Integrated Geo-information and Environmental Management Services (INTEGEMS)

INTEGEMS

Integrated Geo-information and Environmental Management Services

Integrating innovative Geographic Information Systems (GIS) and Remote Sensing technologies with geo-information, environmental management and research expertise and experience to effectively and efficiently respond to socio-economic, environmental and natural resources management challenges and opportunities

Professionally Serving Our Clients Since 2011

Embracing technology for enhanced environmental, research and natural resources management

OUR SERVICES AND SOLUTIONS

- Geo-Information and Management Information Systems
- Environmental and Natural Resources Management
- Web Mapping Applications, Development and Hosting
- Public/Occupational Health & Health Information Systems
- Research, Monitoring and Evaluation
- Disaster Risk Reduction and Disaster Risk Management
- Geological and Mining Consulting

For more information, please contact:

Tel: +232 (0) 7889 8260
8G Main Motor Road, Technical Institute Drive,
Congo Cross, Freetown ,Sierra Leone

Tel: +44 (0) 20 3287 3805
109 Bentworth Court, 80 Granby Street,
London, United Kingdom

Email: info@integems.com Website: www.integems.com

Integrated Geo-information and Environmental Management Services (INTEGEMS)

Our Core Team

Unleashing the creative potential of our people through innovation and technology in ways that sustainably add value

Including a Talent Pool of 10 Affiliate Consultants and 32 Researchers/GIS Data Collectors

Our Vision

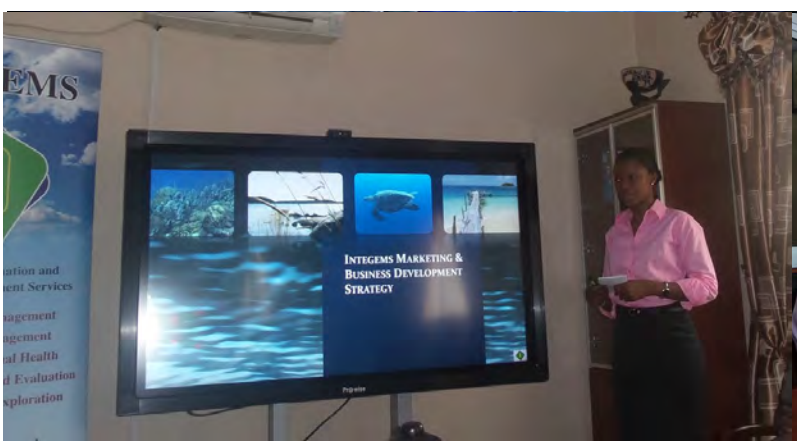
To be a leading provider of innovative and cost-effective research, environmental and geo-information management services to all for sustainably improving human life

Our Values

At all times we are driven by professionalism and a set of core values

Integrity **Passion** **Shared Vision** **Leadership** **Learning** **Ethics**

Our overriding business philosophy is total commitments to the needs of our clients, people and communities



Integrated Geo-information and Environmental Management Services (INTEGEMS)

INTEGEMS Geo-Innovations Centre (IGC)

A HUB OF INNOVATION, TECHNOLOGY, PASSION AND CREATIVITY

http://www.integems-geo-innovations-centre.website

We offer premium and professional venue spaces suitable for conferences, seminars, meetings, corporate events, video conferencing, workshops and training

8H Technical Institute Drive, Off Main Motor Road
Congo Cross, Freetown, Sierra Leone

info@integems-geo-innovations-centre.website

Integrated Geo-information and Environmental Management Services (INTEGEMS)

INTEGEMS

Integrated Geo-information and Environmental Management Services

Our success is about teamwork, a coordinated effort from all disciplines, from our consultants and partners to clients and most important, it's about delivering on our commitments

We Collaborate With Our Strategic Partners

ARUP

Engineering, Design & Project Management
www.arup.com
UK

ZERIHUN ASSOCIATES

Evaluation & Research
www.zerihunassociates.com
USA

Economic Policy Research Institute

Policy Research
https://epri.org.za/
South Africa

Earth Networks

Meteorology and Early Warning
www.earthnetworks.com
USA

JACOBS

Engineering
www.jacobsconsultancy.com
UK

HydroNova
INNOVATING WATER PROSPERITY

Water Systems & Resources
http://hydronova.tech/
USA, Europe

WILLIAM DAVIDSON INSTITUTE
AT THE UNIVERSITY OF MICHIGAN

Knowledge Sharing
https://wdi.umich.edu/
USA

ZORYA

Secure Printed Products
http://www.pc-zorya.com.ua/
Ukraine

FEEDBACK INFRA
Making Infrastructure Happen

Energy, Transportation, Engineering
http://www.feedbackinfra.com
India

EHS DATA

Environmental and Occupational Health
www.ehsdata.com
UK

We Make Innovation a Strategic Imperative in Delivering for Our Clients

UNDP

unicef

UNOPS

UNITY FREEDOM JUSTICE

CEC Africa
SIERRA LEONE

Natural Habitats
organic products grown in a sustainable habitat
Heemraadssingel 188, 3021 DM, Rotterdam, Netherlands

Bumbuna Watershed Management Authority (BWMA)

TRANSCO CLSG

SINCLAIR KNIGHT MERZ
SKM

Goldtree (SL) Ltd
Goldtree

IFAD
INTERNATIONAL FUND FOR AGRICULTURAL DEVELPMENT

山钢集团
SD STEEL

JACOBS

THE WORLD BANK

Sierra Rutile Limited

ARUP

CEMMATS

Integrated Geo-information and Environmental Management Services (INTEGEMS)

Geo-Information Management

We provide cutting-edge geo-information management services and solutions that can be tailored to specific requirements to help all sizes and types of organisations in a range of sectors to make better use of geographical information to aid their decision making and deliver real benefits

Geographic Information Systems (GIS) Consulting Services

- **GIS Software Installation and Configuration -** Desktop, Server, Mobile & Cloud
- **Spatial Databases** - Design, Development, Management, Operations & Support
- **Web Mapping & Enterprise GIS** - Design, Development, Hosting and Management
- **Mobile Geo-data Collection** - Conversion, Migration and Management
- **GIS Applications** - Mapping, Analysis, Modelling, Visualization & Reporting
- **Spatial Data, Information and Knowledge Management**
- **GIS Training** - Customized Instructor-led GIS Courses

We power up GIS and add it to traditional ICT systems to enhance business processes, cut costs, lower risks, solve real challenges, increase benefits and create opportunities for growth and sustainability

Remote Sensing Consulting Services

We integrate GIS with satellite and airborne remote sensing technologies for land cover/land use change detection, spectral analysis and image classification to manage and analyze data for natural and man-made resources management, environmental monitoring, climate change, and disaster risk management

We use various commercial and open source GIS, Remote Sensing and Database tools:

- ArcGIS (Desktop, Enterprise, Mobile & Online)
- MapInfo Pro/Discover, Surfer, Global Mapper
- QGIS, Global Mapper, GeoServer, MapServer
- Geomatica, ERDAS IMAGINE, ENVI, IDRISI
- PostgreSQL/PostGIS, MS SQL Server, Oracle
- LiDAR, Drones, ASTER, SRTM, LANDSAT, etc.

We Make GIS Affordable and Easy To Drive Efficiencies

Discover What's Possible!

For more information, please visit our Website: www.integems.com or email info@integems.com

Integrated Geo-information and Environmental Management Services (INTEGEMS)

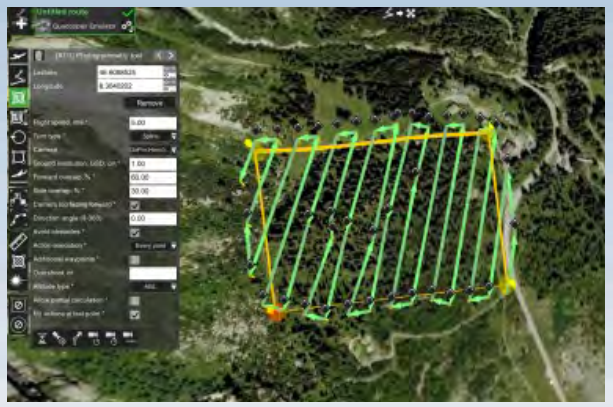
Aerial Survey and Drone Mapping

We offer aerial mapping and topographic mapping services through the use of drones for various applications. We provide real-time, high-resolution and actionable data, information, videos and photos to produce quality survey-grade mapping results, eliminating the need to wait for weeks or months to get traditional ground survey results.

Our fully licensed, insured and experienced pilots use the latest drone technology to create 2D & 3D visualizations, take measurements and perform calculations on volumes of large areas in an efficient manner (faster turnaround time, lower cost and more detailed modelling of sites)

We provide Aerial Drone Applications and Services in :

- GIS Mapping, Surveying and Data Acquisition
- Urban Planning and Land Management
- Civil Engineering & Design Mapping
- Mining and Pit Operations
- Site Inspection/Construction Monitoring/As-Built Mapping
- Disaster Management & Response and Relief Operations
- Digital Elevation Models and Digital Terrain Models
- Utilities (Water, Electricity and Telecommunications, etc,)
- Environmental Studies and Conservation
- Agricultural Mapping and Monitoring



INTEGEMS pilots using a DJI Phantom drone to provide environmental monitoring and mapping services at the 14 August 2017 Landslide site (Regent, Freetown, Sierra Leone) during the Freetown Emergency Response Project (FERP), sponsored by the World Bank and managed by UNOPS Sierra Leone

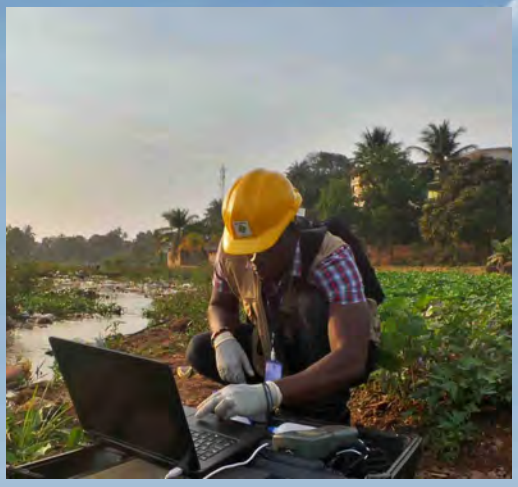
Can We Fly Your Site?

For more information, please visit our Website: www.integems.com or email info@integems.com

Integrated Geo-information and Environmental Management Services (INTEGEMS)

Environmental Management

We provide creative environmental services and solutions, leading edge analysis and proven value for our clients with respect to their immediate concerns and project particulars, as well as promoting a higher understanding of environmental knowledge and sustainability



- Environment and Social Impact Assessment (ESIA), including Resettlement Action Planning
- Biodiversity, Soil, Water, Noise and Air Quality Monitoring
- Environmental Compliance Assistance, Auditing and Environmental Management System Implementation
- Environmental Management Information Systems
- Greenhouse Gas Emissions Inventory & Data Reporting, Management Plans and Verification
- Climate Change (Mitigation and Adaptation) and Energy
- Environmental Health & Safety

We work very closely with clients and communities to solve the most complex environmental challenges in accordance with the following international and national principles, standards and guidelines:

- IFC Performance Standards
- Equator Principles
- World Bank Group Environmental and Social Standards
- World Bank Group Environmental, Health & Safety Guidelines
- WHO Standards
- National Environmental Standards
- National, Regional and Local Laws
- ISO 14000 Environmental Standards

Our comprehensive expertise in air, land and water combined with GIS, Remote Sensing, project management and implementation services allows us to successfully handle any environmental challenge from consulting to completion

INTEGEMS Consultant undertaking air quality monitoring as part of an ESIA study for Natural Habitats' Proposed Oil Palm Plantation and Milling Project in Makpele Chiefdom, Pujehun District , Sierra Leone

Always delivering our very best in everything we do

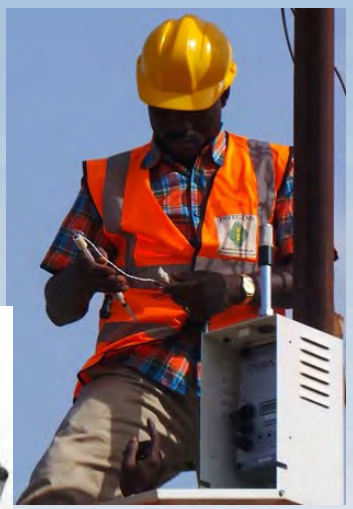
For more information, please visit our Website: www.integems.com or email info@integems.com

Integrated Geo-information and Environmental Management Services (INTEGEMS)

Air Quality Monitoring

INTEGEMS provides independent expert advice and assessments covering all ambient air quality issues. We have a strong and proven track record in providing air quality services to private and public sector clients, both within Sierra Leone and internationally

- Real-time graphical display of dust levels
- Simple icon driven user interface
- Extensive range: 0.001mg/m^3 to 250g/m^3 (Auto-ranging)
- Unique removable sampling probe
- Rugged design for harsh environments
- Multi-language operation
- Sampling for total, respirable, $PM_{2.5}$ or PM_{10} with optional adaptor
- Unique on-site calibration insert
- Environmental enclosure available for boundary monitoring applications
- Casella insight data management software



We provide Air Quality services in the following sectors:

- Open Cast Mining & Quarrying
- Construction & Demolition
- Chemical Processing
- Environmental, Social & Health Impact Assessment
- Environmental Health & Safety Consultancy
- Particulate Matter, Ground-level Ozone, Carbon Monoxide, Sulphur oxides, Nitrogen oxides, Hydrocarbons, etc.
- Factory - Indoor Air Quality

For more information, please visit our Website: www.integems.com or email info@integems.com

Integrated Geo-information and Environmental Management Services (INTEGEMS)

Water Quality Monitoring

INTEGEMS provides a range of short term, medium and long term water and waste water monitoring services including effluent monitoring, flow and load surveys in the natural urban and industrial environment. We make use of the best technologies available couple with years of experience to deliver cost effective solutions

HI 9829 Multiparameter Meter

With available GPS, logging probe, turbidity and ion measurements

- Rugged meter and probe
- Measure up to 16 parameters and display of up to 12 parameters
- Tracking of measurement locations with GPS
- Waterproof protection (IP67 for the meter and IP68 for the probe)
- Exclusive Fast Tracker™—T.I.S. (Tag ID System)
- Graphic LCD with backlight
- Built-in barometer for D.O. concentration compensation
- Quick calibration feature
- Measurement check to eliminate any erroneous readings
- Auto recognition of probe and sensors
- Log-on-demand and automatic logging (up to 45,000 samples)
- Graphical display of logged data
- USB interface for PC communication
- Auto-ranging for EC, ISE and turbidity readings
- Field-replaceable sensors with colour coded caps
- Meter can be powered with either alkaline or rechargeable batteries

We use HI 9829 microprocessor based multi-sensor probe, a waterproof portable logging multiparameter meter, to monitor up to 16 different water quality parameters.

We measure various key parameters, including pH, ORP, conductivity, dissolved oxygen, turbidity, ammonium-nitrogen, chloride, nitrate-nitrogen, resistivity, total dissolved solids, salinity, seawater sigma, atmospheric pressure, and temperature.

We provide location tracking of measurements using in-built GPS capabilities. We transmit readings digitally with options to log data while disconnected from the meter.

For more information, please visit our Website: www.integems.com or email info@integems.com

Integrated Geo-information and Environmental Management Services (INTEGEMS)

Noise Monitoring

INTEGEMS offers specialised services such as measurement, monitoring, assessing, prediction and reporting of environmental and workplace noise. We also have experience in using an extensive range of Sound Level Meters and Loggers.

CEL633 Sound Level Meter

- Preconfigured setups
- Audio recording
- Single measurement range
- Level triggered events
- Real-time octave & 1/3 octave measurements
- More than 1 year storage
- Voice notes to annotate measurements
- Analysis of noise level time history
- Replay voice notes and event audio
- Intuitive user interface
- Remove anomalous data from results
- Analysis of time history
- Generate comprehensive reports
- Store data by, person, place, location
- Manage multiple instruments and calibration

Environmental Noise

- Boundary noise assessments
- Noise nuisance complaints
- Measurements to ISO1996, BS4142
- Short or long term assessments
- Noise source identification
- Real-time frequency analysis

Occupational Noise

- Workplace noise assessments
- Selection of hearing protection
- Noise exposure calculations
- Compliance with international regulations

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Integrated Geo-information and Environmental Management Services (INTEGEMS)

Research and Monitoring & Evaluation (M&E)

INTEGEMS provides cost-effective, innovative and quality solutions to meet its clients' qualitative and quantitative research, monitoring and evaluation challenges and opportunities for robust results-based management

Research Survey and M&E Data Collection Just Became Easier...

- *We easily design interactive research survey forms using intuitive and powerful tools (e.g., ODK, GeoODK, Ona, KoBoToolbox, Fulcrum, Survey 123 for ArcGIS, Epi Info)*
- *We quickly and reliably collect your research survey data and media (images, videos, sound) on Windows, Android and iOS smartphones and tablets, both online & offline*
- *We can manage your data in our Cloud servers and/or your PC and visualize your data and captured GPS coordinates after they are collected - or download them for analysis*

Our integrated GIS, Research and M&E approach allows us to provide better insights compared to other traditional business and socio-economic research organisations

- Computer Assisted Personal Interviews (CAPI)
- GPS-enabled Mobile Data Collection
- Baseline, Mid-term and Endline Evaluations
- Knowledge, Attitude and Perception (KAP) Surveys
- Experimental and Quasi-Experimental Research
- Qualitative and Quantitative Research Studies
- Stakeholder Analysis and Engagement
- Statistical Analysis
- Case Studies
- Structured & Semi-Structured Interviews
- Focus Group Discussions
- Key Informant Interviews
- Participant Observation
- Participatory Rapid Appraisal (PRA)
- Surveys
- **SPSS, STATA, CS Pro, Minitab, SAS, R**

Monitoring & Evaluation Management Information System (MEMIS)

We design, develop, host and manage MEMIS for clients on our UK-based dedicated servers in the Cloud

Key Features of MEMIS

- Accessible Online/Offline
- Accessible via the Web Smartphones & Desktops
- Multi-user Access
- Charts and Dashboard
- GIS and Mapping
- Data Visualisation
- Mobile Data Capture

INTEGEMS takes care of all aspects of developing, hosting, maintaining and supporting the MEMIS application with system upgrades, reliable backups, automatic scaling and minimal down-time.

This allows organisations to focus on what is important: using information, managing results (outputs, outcomes and impacts) and doing advanced data analysis and reporting.

Key Features of MEMIS

- Import/Export to CSV, Excel, KML, JSON,
- SMS Messaging
- One-click Reporting
- Data Validation
- Data Management
- Flexible Data Entry Forms
- Multiple Web API

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Integrated Geo-information and Environmental Management Services (INTEGEMS)

Web Mapping Applications, Development and Hosting

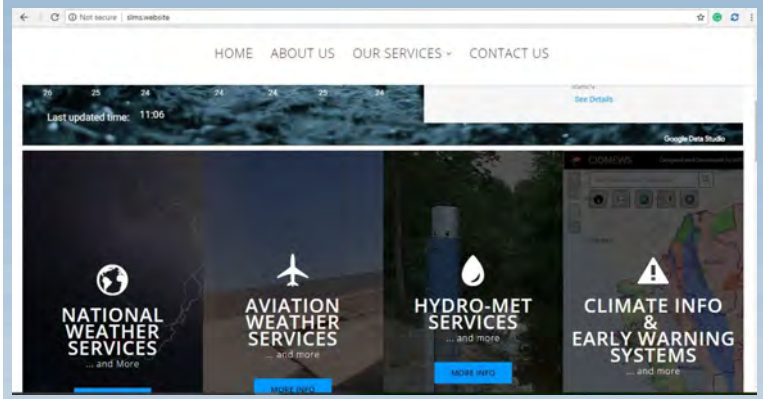
INTEGEMS specialize in developing compliant, clean GIS-enabled and custom websites, custom templates, business templates. We have extensive experience designing and developing various Content Management Systems (CMS) such as Joomla, WordPress and Drupal

Helping your business realize the path to its greatest success

- *We are proficient in new Web technologies such as HTML5, CSS, Dojo, JQuery*
- *We offer an experienced Project Team of Web Designers with CMS and Web GIS experience; PHP, JavaScript and HTML5 Developers/Programmers; and MS SQL Server, MySQL and PostgreSQL/PostGIS Database Specialists*

Secure, Reliable Backups, Scalable & Compliant Hosting in the Cloud (Web) or/and on Local PCs

We offer the perfect Cloud/Web hosting, technical support and consulting services to our clients worldwide



Open Data Services

We develop commercial and open source portals and platforms to make data easy to create, analyse and understand using various applications:

- CKAN
- DKAN/Drupal
- Socrata
- Junar,
- ArcGIS Online/ArcGIS OpenData

- Website Design
- Website Maintenance
- Programming
- Mobile Websites
- Domain Registration,
- Windows and UNIX Hosting Services
- Application and Web-based Email Services
- Search Engine Optimization (SEO)
- Database Development
- Google Analytics
- E-Commerce Storefronts
- Merchant Credit Card accounts
- SSL certificates and data encryption
- Social Media Optimization

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Integrated Geo-information and Environmental Management Services (INTEGEMS)

Disaster Risk Reduction and Management

INTEGEMS is firmly committed to delivering the most cost-effective, innovative and quality technological solutions to contribute to disaster prevention, mitigation and preparedness, response, recovery and restoration, and vulnerability reduction based on risk management principles, to minimize loss of life and economic damages.

Building safer communities against disasters ...

- *We support the development and implementation of disaster risk reduction and disaster risk management strategies, plans, policies, programmes and projects.*
- *We develop reliable forecasting and early warning systems, which can credibly develop real-time hydro-meteorological flood analysis/forecasting systems.*
- *We undertake multidisciplinary planning and policy making for disaster management from national to local levels in many urban and rural areas around Sierra Leone*

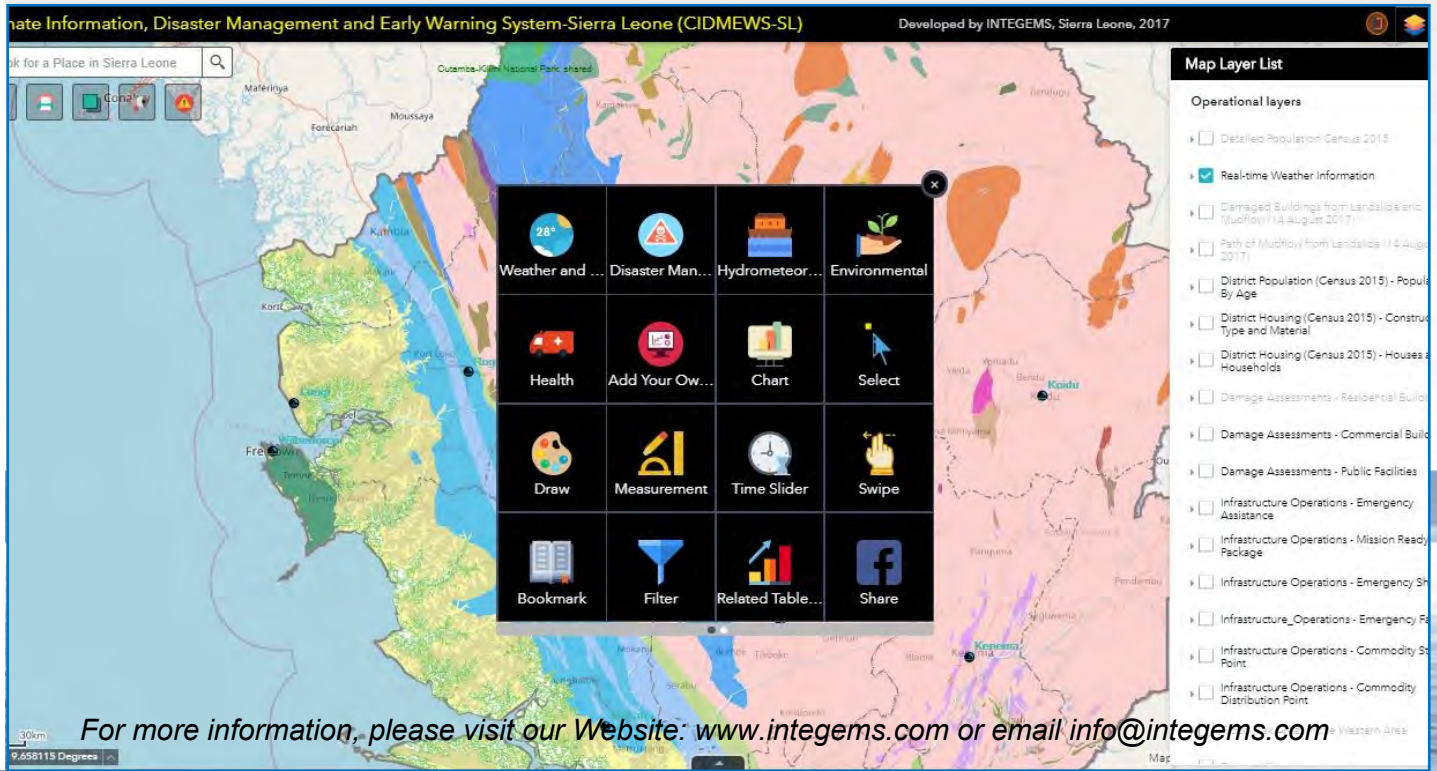
Some of our key interventions in this field focus on:

- Climate, Weather and Early Warning Systems
- Hazard Assessment, Profiling and Mapping
- Support for Disaster Risk Management
- Disaster Risk Management Planning
- Institutional Planning and Capacity Building for Disaster Preparedness and Mitigation
- Multi-Hazard Disaster Risk Assessment
- Community-based Approach to Disaster Preparedness
- GIS and Web Management Information Systems
- Technical Advisory Services
- Knowledge Documentation and Dissemination

Developing information systems for disaster preparedness responses and recovery

Climate Information, Disaster Management and Early Warning Systems (CIDMEWS)

https://www.cidmews-sl.solutions



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Integrated Geo-information and Environmental Management Services (INTEGEMS)

Geological and Mining Consulting

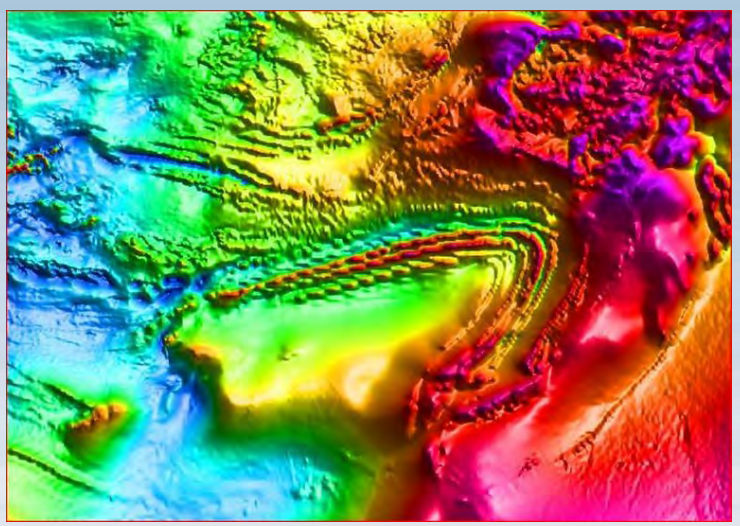
We integrate our cutting-edge Geographic Information Systems (GIS) and Remote Sensing technologies with geological, geochemical, geophysical, exploration, minerals and mining expertise to enable the capture, storage, integration processing, visualisation, modelling and interpretation of client's valuable data, information and knowledge, and makes it quickly and easily accessible (secured) to all stakeholders on any device, at anytime and from anywhere

INTEGEMS provides clients with quality services and solutions in the following areas:

- Geo-scientific Data Management and GIS Mapping
- Ground & Aerial Surveys, including Drone Mapping
- Tailings & Mine Waste Mapping and Monitoring
- Remote Sensing Data Processing and Interpretation
- Scoping/Pre-Feasibility Studies for Mining Projects
- Geological Mapping, Modelling, Analysis & Reporting
- Geophysics and Geochemistry
- Environmental and Social Impact Assessments (ESIA)
- Environmental & Social Audits, Review & Monitoring

Our tools and resources include the following:

- ESRI ArcGIS (Desktop, Server, Mobile, Online)
- Geosoft Target for ArcGIS, including Add-Ins
- Geosoft Oasis montaj
- Pitney Bowes MapInfo Pro/Discover (2D & 3D)
- Surfer, LogPlot, Didger, Grapher
- Discover PA, QuickMag Pro, ModelVision
- PostgreSQL/PostGIS, MS SQL Server, Oracle
- ERDAS IMAGINE, ENVI, GEOMATICA
- LiDAR, ASTER, SRTM, LANDSAT, SAR, InSAR



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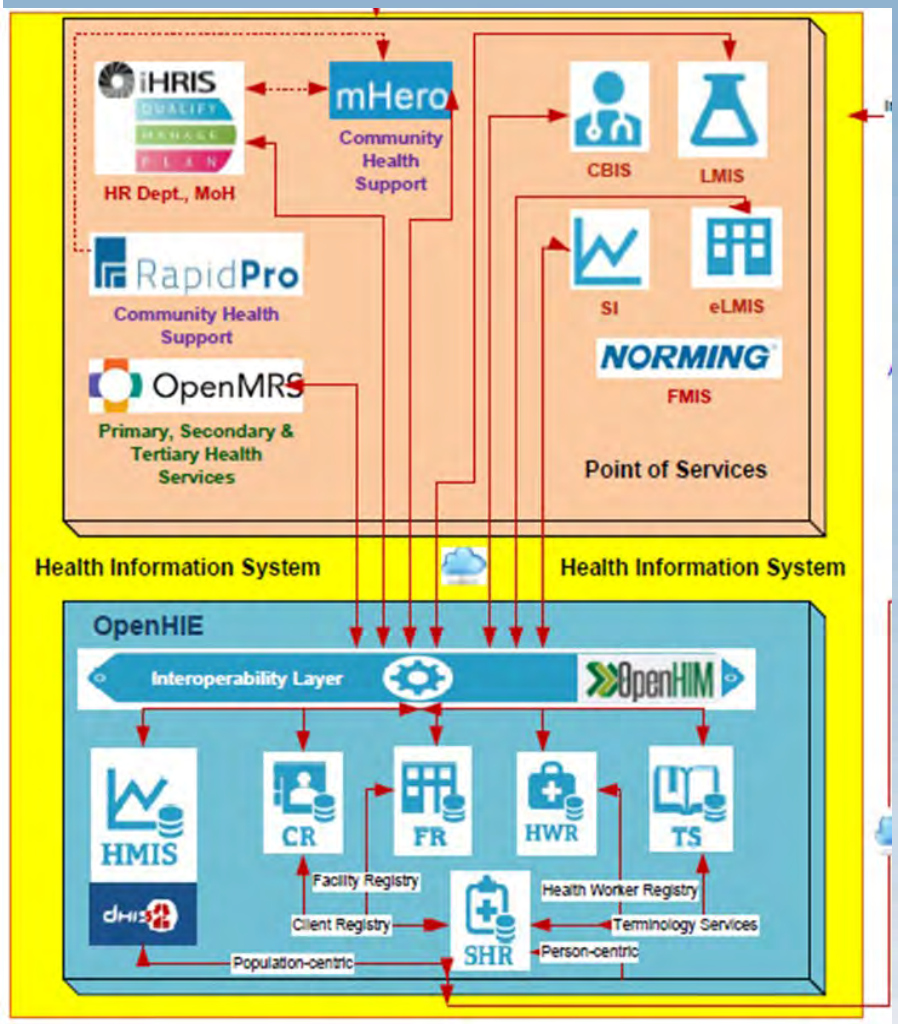
Integrated Geo-information and Environmental Management Services (INTEGEMS)

Health Information Systems (HIS)

We design, develop, integrate and implement Geographic Information Systems (GIS) with Health Information Systems (HIS) to cost-effectively deliver better health information products, services and solutions for decision making with better coordination, collaboration, efficiency, cost savings and improved overall health status and outcomes of people.

We design, develop, host and manage DHIS2 for clients on our UK-based dedicated servers in the Cloud



We manage the complex demands of a functioning M&E system by using **District Health Information** (**DHIS2**) Software.

Strengthening health data collection systems with a focus on harmonization of Health Management Information Systems (**HMIS**) with Logistics Management Information Systems (**LMIS**), Financial Management Information Systems (**FMIS**), Integrated Human Resources Information System (**iHRIS**), Laboratory Information Systems (**LIS**), and Community-Based Information Systems (**CBIS**).

Instituting and building capacities for robust health data and information collection, management, analysis, visualisation, mapping and dissemination for improved policy and decision-making and health system performance at the health facility, district, provincial and national levels.

Using GIS to combine socio-economic determinants on health (e.g., water and sanitation, physical environment, social protection and gender equity, road access,) and establishing a mechanism for intersectoral dialogue and collaboration for a harmonized plan for recovery and rebuilding.

Providing Advanced GIS and Mobile Data Collection, Management and Visualisation for the Health Sector

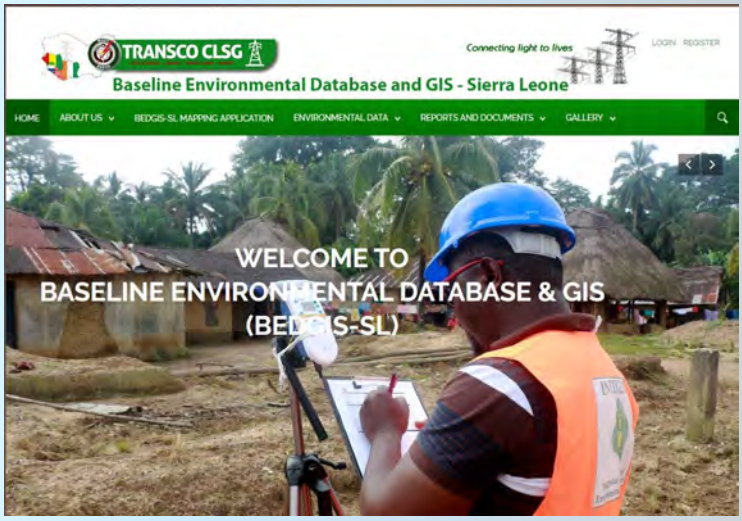
INTEGEMS staff using mobile data collection device for real-time mapping of Ebola Virus Disease (EVD) in Sierra Leone in 2014/2015

For more information, please visit our Website: www.integems.com or email info@integems.com

Integrated Geo-information and Environmental Management Services (INTEGEMS)

A SELECTION OF PROJECTS BY INTEGEMS

June 2017 – July 2018: Establishment of a Baseline Database of the Environmental Component of the CLSG Project Area in Sierra Leone, TRANSCO Cote D'Ivoire-Liberia-Sierra Leone-Guinea (CLSG); Sierra Leone. TRANSCO CLSG, a Regional Transmission Company set up under the West African Power Pool (WAPP), contracted INTEGEMS to undertake consulting services for the Establishment of a Baseline Database of the Environmental Component of the CLSG Project Area in Sierra Leone. INTEGEMS specifically undertook water quality monitoring of the specified watercourse crossed by the corridor of the transmission line; preliminary characterization of the soils, vegetation and wildlife of the project area; and air quality and noise level monitoring in the settlements of the Project area. The project also includes field data monitoring and collection; data management and laboratory analysis and mapping; development and deployment of a Web-based GIS mapping application (http://www.bedgis-sl.website) and database to support TRANSCO in its mission to streamline baseline environmental data-flows and provide accurate, reliable and timely baseline environmental data and information to policy-makers and the public.



May 2017 – September 2017: Environmental and Socio-Economic Impact Survey (ESIS) of Keimadugu Community within Shandong Steel (SL) Limited's Tonkolili Iron Ore Project (TIOP) Concession in Tonkolili District; Sierra Leone. Shandong Steel (SL) Limited contracted INTEGEMS to undertake a comprehensive Environmental and Socio-Economic Impact Survey (ESIS) to assess the current (baseline) conditions (hydrology/hydrogeology and water quality monitoring, slope and sedimentation, land use and land cover and socio-economic surveys) in the area surrounding the Keimadugu community, and in particular the nearby rivers and streams/creeks and farmlands. The results of the ESIS served as the basis to identify and mitigate the prevailing and potential environmental and socio-economic impacts from the TIOP artisanal mining activities and future resettlement of local communities.

September 2017 – April 2018: Baseline Study of the Community-based Early Childhood Development (ECD) Programme in Sierra Leone; United Nations Children's Fund (UNICEF) Sierra Leone & Economic Policy Research Institute (EPRI) South Africa; Sierra Leone. EPRI South Africa sub-contracted INTEGEMS, under UNICEF's multi-year Baseline Study of the Community-based Early Childhood Development (ECD) Programme in Sierra Leone, to design/adapt mobile data collection tools; collect qualitative and quantitative ECD data in four target districts (Moyamba, Port Loko, Bombali and Koinadugu), process and statistically analyse the data; and prepare a comprehensive report to set the stage for a summative evaluation by assessing and documenting the status of the young children's early development, as well as the contexts at home and in the communities in which the pilot project is to be implemented before the project intervention activities are carried out.

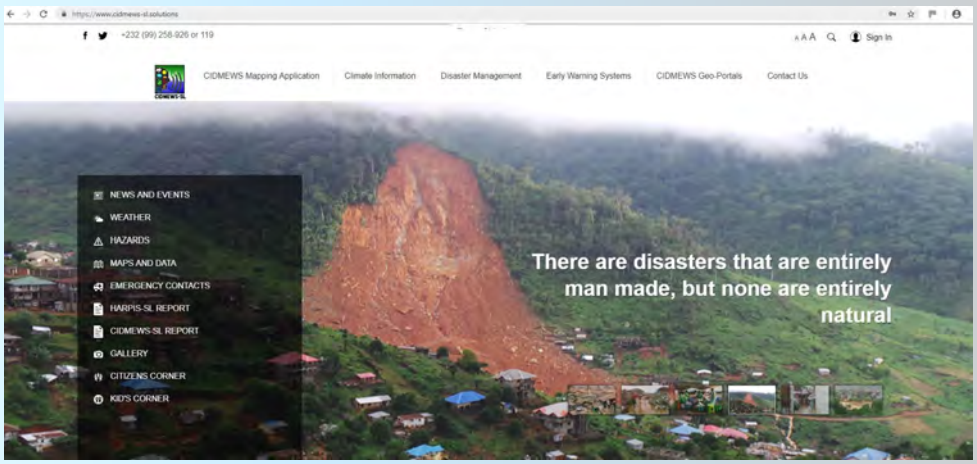
Integrated Geo-information and Environmental Management Services (INTEGEMS)

A SELECTION OF PROJECTS BY INTEGEMS

March 2017—Ongoing: Multi-City Hazard Review and Risk Assessment in Sierra Leone. Ove Arup & Partners International Ltd (Arup) and World Bank and Global Facility for Disaster Reduction and Recovery (GFDRR); Sierra Leone. Ove Arup and Partners International Ltd (Arup) contracted INTEGEMS as a local consultancy firm to help better understand and quantify natural hazard and disaster risk in Sierra Leone for the World Bank and Global Facility for Disaster Reduction and Recovery (GFDRR) project ("Multi-City Hazard Review and Risk Assessment in Sierra Leone"). INTEGEMS, in partnership with Ove Arup and Partners International Ltd (Arup), JBA Risk Management, British Geological Survey (BGS) and TTAC Limited, is providing field GIS Data Collection and Disaster and Risk Mapping expertise for the development of new hazard and risk information in Sierra Leone for targeted cities namely, Freetown, Makeni and Bo. INTEGEMS helped to build City Councils' capacities in risk knowledge, disaster prevention, and preparedness to strengthen urban communities' resilience against disasters.

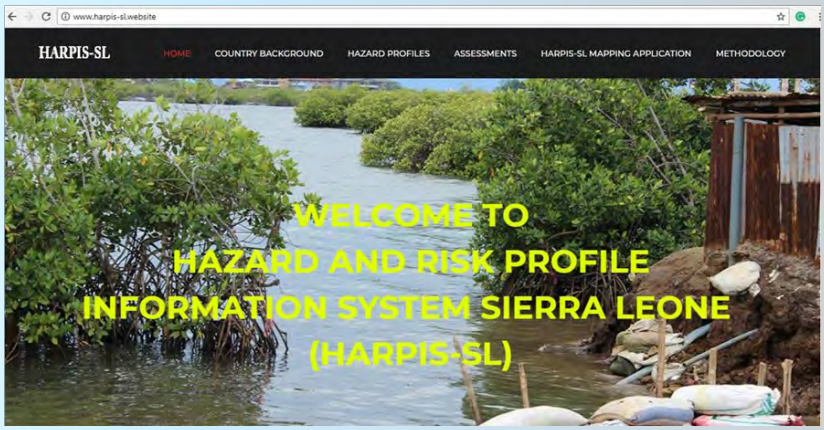
December 2017 - Ongoing: Climate Change Risk Management and Capacity Assessment for the Water Sector in Sierra Leone; United Nations Development Programme (UNDP); Sierra Leone. UNDP Sierra Leone contracted INTEGEMS to undertake the "Climate Change Risk Management and Capacity Assessment for the Water Sector in Sierra Leone" project to enhance the adaptive capacities of the Ministry of Water Resources, the Environment Protection Agency-Sierra Leone (EPA-SL), the Local Councils and decision makers in the public and private sector that are involved in water provision to plan for and respond to climate change risks on water resources; build capacity in water resources sector through institutional strengthening; and to implement critical policies governing the management of water resources to incentivise climate-smart investment.
The project entails the assessment of required tools for climate risks management, including vulnerability maps, climate scenarios, extreme event forecasts, vulnerability and monitoring systems.

September 2016—Ongoing: Support to Communication and Dialogue on Early Warning and Forecasting Products and Climate Information in Sierra Leone, United Nations Development Programme (UNDP); Freetown, Sierra Leone. UNDP contracted INTEGEMS to support and improve climate monitoring and early warning systems through the enhancement of the technical and technology capacities of the relevant mandated institutions – Sierra Leone Meteorological Department (SLMD) in the Ministry of Transport and Aviation (MTA), the Office of National Security – Disaster Management Department (ONS-DMD), the Ministry of Water Resources (MWR), and the Environment Protection Agency-Sierra Leone (EPA-SL). INTEGEMS designed and developed the **Climate Information, Disaster Management and Early Warning Systems-Sierra Leone (CIDMEWS-SL)**, accessed via https://www.cidmews-sl.solutions) for disaster management, meteorological, climatological, hydrological and early warning information. CIDMEWS integrates Geographic Information System (GIS) and Management Information System (MIS) and mobile data collection technology to provide a family of sophisticated tools and Web services for collecting, managing, visualizing, mapping, analysing, monitoring, evaluating and reporting on various aspects of climatological, hydro-meteorological, disaster management and early warning information in Sierra Leone to help understand better the weather and climatic changes over time, and provide timely information to avert any weather and climate change-related disasters.



A SELECTION OF PROJECTS BY INTEGEMS

July 2017 –Ongoing: Update of Sierra Leone Hazard Profile and Capacity Gap Analysis, United Nations Development Programme (UNDP); Freetown, Sierra Leone. UNDP contracted INTEGEMS to provide consultancy services for the "Update of Sierra Leone Hazard Profile and Capacity Gap Analysis" project and provide technical support to the Office of National Security – Disaster Management Department (ONS-DMD), the Ministry of Water Resources (MWR), the Environment Protection Agency-Sierra Leone (EPA-SL) and the Sierra Leone Meteorological Agency (SLMA). The project entails the mapping out of all hazard-prone areas based on historical disaster/hazard events; identifying and assessing the exposure, vulnerability and risk of people, property, critical facilities, infrastructure and economic activities to those disaster/hazards prone areas; creating national multi-hazard profiles in terms of disaster risks, hazards, vulnerability and exposure; and developing and deploying a comprehensive and up-to-date GIS Web-based mapping application and database of a national risk profile of Sierra Leone (Hazard and Risk Profile Information System - Sierra Leone, accessed via http://www.harpis-sl.website).



February 2015 - July 2015: Topographic/Contour and Site Surveys of Copperbelt Energy Corporation Africa-Sierra Leone's (CECA-SL) Heavy Fuel Oil (HFO) Power Generation (128 MW) Project Site in Kissy Dockyard, Freetown; Copperbelt Energy Corporation Africa-Sierra Leone (CECA-SL) Limited, Freetown, Sierra Leone. Copperbelt Energy Corporation Africa-Sierra Leone's (CECA-SL) contracted INTEGEMS to undertake topographic/contour and site surveys of its Heavy Fuel Oil (HFO) Power Generation Project site in Kissy Dockyard, including the fuel pipeline in the old refinery and alongside the road around the proposed HFO Power Plant site. INTEGEMS employed a mixture of sophisticated surveying and GIS technologies (laser measuring devices, GNSS/GPS receivers and total stations) and methods to survey all existing structures inside the site, including the current HV lines, building infrastructure and assets, to produce accurate and detailed measured building plans and plot contours.

February 2018 – March 2018: Environmental Impact Assessment (EIA): Freetown Emergency Recovery Project - Landslide Remediation; United Nations Office for Project Services (UNOPS); Freetown, Sierra Leone.

UNOPS contracted INTEGEMS to support the UNOPS Team in conducting baseline environmental monitoring (i.e., biodiversity, hydrology, air quality, cultural heritage, road traffic/transportation, noise and vibration and landscape and visual impact baseline studies, including data collection, analysis and reporting) of the ESIA study of the Landslide Remediation works in Matomeh, Regent, Freetown, Western Area, Sierra Leone. INTEGEMS was also contracted to support the UNOPS Team with the Public Consultation and Disclosure exercise; information and advice on relevant local environmental laws and regulations as requested; recommend mitigation measures to minimize negative impacts and enhance benefits of the Project Work for inclusion in the ESMP; and support the development of a Community Development Action Plan (CDAP).

Integrated Geo-information and Environmental Management Services (INTEGEMS)

A SELECTION OF PROJECTS BY INTEGEMS

August 2017 – December 2017: Rapid Damage and Loss Assessment (DaLA) of 14 August 2017 Landslides and Floods in the Western Area of Sierra Leone. World Bank and Ove Arup & Partners International Ltd (Arup); Freetown, Sierra Leone. Ove Arup and Partners International Ltd (Arup) subcontracted INTEGEMS for the World Bank's Rapid Damage and Loss Assessment (DaLA) of 14 August 2017 Landslides and Floods in the Western Area of Sierra Leone. INTEGEMS, in partnership with Ove Arup and Partners International Ltd (Arup) and Edward Davies Associates Ltd undertook comprehensive aerial and drone survey, field GIS data capture, data management and socio-economic assessment along the full 7 km corridor (from Sugar Loaf Mountain, Western Area Rural, to Lumley Creek, Western Area Urban) of the main landslide and mudflow with the objective of estimating damages and losses and of making preliminary estimations for mobilizing funds and launching immediate recovery. The socio-economic assessment quantified damages and losses in infrastructure and social sectors (real estate and urban development, transport, electricity, telecommunications, water and sanitation, health, education, social protection) and in cross-sectoral areas (environment, waste management, disaster risk management and gender) and preliminary recommendations for immediate, medium-, and long-term needs.

May 2015 – July 2016: Environmental, Social and Health Impact Assessment (ESHIA) of Natural Habitats' Proposed Oil Palm Plantation and Milling Facilities in Zimmi Town, Makpele Chiefdom, Pujehun District, Sierra Leone; Natural Habitats (SL) Ltd, Freetown, Sierra Leone. INTEGEMS was contracted by Natural Habitats (SL) Ltd to carry out (in partnership with DigbyWells Consulting Firm) an ESHIA of its proposed oil palm plantation and its accompanying facilities in Zimmi, Makpele Chiefdom, Pujehun District. INTEGEMS is carrying out the ESHIA from Screening, Scoping, Baseline Studies, Impact Assessment, Environmental and Social Management Plans, Stakeholder Engagement, Community Development Action Plan and Public Disclosure and Consultations in view of meeting the International Financial Corporation's (IFC) requirements and the Roundtable on Sustainable Palm Oil (RSPO) standards.

January 2014 – March 2018: Environmental, Social and Health Impact Assessment (ESHIA) of Copperbelt Energy Corporation Africa-Sierra Leone (CECA-SL) Ltd's Heavy Fuel Oil (HFO) Power Generation (128 MW) Project in Kissy Dockyard, Freetown, Sierra Leone. Copperbelt Energy Corporation Africa-Sierra Leone (CECA-SL) is developing a heavy fuel oil (HFO) power plant on a site in Kissy Dockyards, and has contracted Jacobs (a leading projects firm, with global capability in strategic consulting, engineering and project delivery) to undertake an ESHIA of the development in order to comply with the environmental regulations of the Environmental Protection Agency of Sierra Leone (EPA-SL) and the general requirements of International Financing Institutions (IFIs) for ESHIA. Jacobs has developed a trusted partnership with INTEGEMS and appointed INTEGEMS as a Sub-Consultant to provide logistical and technical support and ESHIA specialist inputs to the CECA-SL HFO Power Plant Project, including Screening, Scoping, Baseline Studies, Impact Assessment, Environmental and Social Management Plans, Stakeholder Engagements, Resettlement Action Plan, Community Development Action Plan and Public Disclosure and Consultations.

Integrated Geo-information and Environmental Management Services (INTEGEMS)

Meet the Founder and Managing Director of INTEGEMS - Julius D Mattai

With an unremitting passion for geosciences, technology and innovation at the intersection of business strategy, **Julius Daniel Mattai** founded INTEGEMS in early 2011 in London, UK. Julius is a highly qualified, multi-talented and technically skilled professional with 25 years working experience in both the private and public sectors in various leadership, management and technical roles in the Ukraine, UK, Sierra Leone and Liberia. He has profound knowledge, skills, expertise and demonstrable experience in Environmental and Natural Resources Management; Geographic Information Systems (GIS) and Remote Sensing; Management Information Systems (MIS); Data and Information Management Systems (IMS); Energy and Climate Change (Mitigation and Adaptation); Disaster Risk Reduction and Disaster Risk Management; Health Information Systems (HIS); Geology and Mineral Exploration.

As the Managing Director of INTEGEMS, Julius provides administrative, management and technical leadership in the provision of integrated GIS, geo-information, geological, socio-economic research and environmental management services and solutions to various public and private sector clients in Sierra Leone, Liberia and the UK. He commands outstanding leadership, management, organisational, analytical and inter-personal skills and experience with a verifiable track records of inspiring, motivating, empowering, developing and coaching various multi-national and multi-disciplinary teams and individuals in various challenging environments.

In 2014/2015, Julius served as Head of Information Management and MIS/GIS Specialist with the United Nations Mission for Ebola Emergency Response (UNMEER) and United Nations Office for Project Services (UNOPS) in Liberia, respectively, where he took responsibility for the implementation of strategic plan for emergency and recovery operations and information management. During his tenure with UNMEER and UNOPS, Julius pioneered, designed, developed and implemented various innovative GIS, IMS and Web-based solutions (mobile data collection, integrated geo-databases, Web mapping applications) that strengthened emergency and humanitarian data and information collection, management, mapping and sharing for planning, operations, command, logistics, and public information. In 2013, Julius served as the Geological Data and Information Manager at the Sierra Leone National Minerals Agency, where he provided geo-scientific data management and mapping expertise to multi-disciplinary teams and the public.

Immediately prior to setting up INTEGEMS, Julius worked (2008-2011) as a Principal Consultant at AEA Technology plc (UK), where he led and managed various multi-disciplinary GIS and environmental management programmes and projects. He also provided policy and technical support and consultancy services to various international, national and regional clients in both the public and private sectors, including the EU Commission, European Environment Agency, EU Joint Research Centre, European Space Agency, and the UK Central, Regional and Local Governments. During his tenure with AEA Technology plc Julius helped establish the UK as a key node within the EU Infrastructure for Spatial Information in Europe (INSPIRE), Shared Environmental Information Systems (SEIS), Global Monitoring for Environment and Security (GMES) and the Global Earth Observation System of Systems (GEOSS) initiatives.

From 2002 to 2008, Julius worked as the Environmental Data Manager for the London Mayor at the Greater London Authority (London, UK), where he managed and provided leadership over departmental GIS and enterprise environmental data and information management systems. He pioneered and developed the first comprehensive London Atmospheric Emissions Inventory (LAEI) and the London Energy and Greenhouse Gas Emissions Inventory (LEGGI). Julius also provided policy and technical advice and support to the London Mayor's Office in the delivery of the Mayoral environmental, transport and spatial development strategies and policies. Julius has also worked (1992-2002) as a GIS Data & Information Coordinator, Strategy Officer and Data & GIS Officer in the UK. Prior to his career in the UK, Julius worked as a Geologist at the Ingulets Iron Ore Mining & Enrichment Works, Krivoy Rog (Ukraine).

Julius holds an MSc Degree (with Distinctions) in Environmental & Earth Resources Management (2001, UK) and an MSc Degree (with Distinction) in Geology & Exploration for Mineral Deposits (1992, Ukraine). Julius is very proficient in spoken and written English and Russian.

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Integrated Geo-information and Environmental Management Services (INTEGEMS)

Meet the Core Team

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Mansa-Musa Kamara
Senior Consultant

Kenneth V S Koker
Senior Consultant

Louisa Mattai
Consultant

Ibrahim Aziz Bangura
Consultant

Hafisatu R Dumbuya
Consultant

Mamoud Mansaray
Consultant

Amilia Conteh
Consultant

Musa Septimus Koroma
Consultant

Unis Lebbie
Consultant