GEOIMPACT WEST AFRICA | Q3 2025 EDITION

EMPOWERING WEST AFRICA WITH LOCATION INTELLIGENCE

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FOREWORD

In this 12th edition of GeoImpact West Africa, we spotlight how innovation, collaboration, and purpose continue to shape our geospatial journey across the subregion.

From the Esri User Conference West Africa 2025 in Lagos a gathering that united over 400 industry professionals to explore how "Geospatial Innovation is Shaping Our World" to our impactful client projects in Ghana, Nigeria, Liberia and Gabon, this issue reflects Sambus Geospatial's commitment to empowering decisions through the Science of Where.

In Solutions in Action, we feature success stories that show how GIS technology is being leveraged to transform urban planning, enhance environmental monitoring, and optimize resource management. Our Map Gallery highlights some of the most creative geospatial visualizations from professionals and students who continue to push the boundaries of spatial storytelling.

As we move towards the close of 2025, we celebrate the power of partnership with Esri, Trimble, NV5 Geospatial, and Wingtra and the growing community of GIS practitioners driving progress across West Africa.

We invite you to dive in, be inspired, and see how every map, every story, and every innovation is helping to build a smarter, more sustainable Africa.

Akua Aboabea Aboah

MANAGING DIRECTOR - SAMBUS GEOSPATIAL
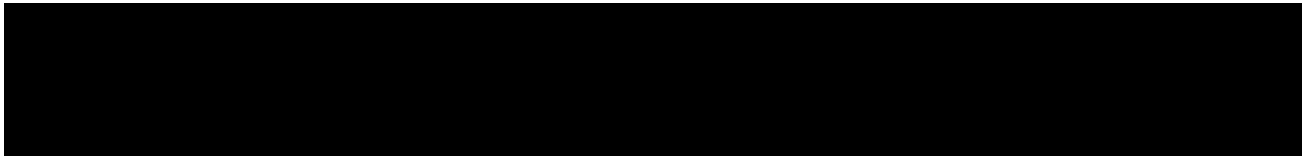
IN FOCUS

Geospatial Technology and the Future of Decision-Making in West Africa

What if farmers could predict crop failures before they happened? Or could banks choose the best branch location with just a map click? Decision-making in West Africa is evolving. From governments to private enterprises, institutions are realizing that location intelligence is not just a technical tool but rather a strategic necessity. Being able to analyze spatial data, uncover patterns, and visualize change in real-time is reshaping how we approach governance, business, development, and even everyday life. Now, across West Africa, possibilities are no longer futuristic. They are becoming reality, thanks to geospatial technology. At Sambus Geospatial, we are seeing firsthand how organizations are harnessing location intelligence to solve complex problems, drive growth, and improve lives.

Geospatial AI: Smarter Insights for Complex Challenges

Artificial Intelligence (AI) is redefining geospatial analytics. By automating pattern recognition, predictive modeling, and real-time monitoring, Geospatial AI (GeoAI) enables decision-makers to anticipate challenges before they escalate.

🌾	Agriculture	AI-powered satellite imagery is helping farmers in Ghana detect crop stress and predict yields
🏢	Urban planning	Nigerian cities are using AI-driven GIS models to forecast population growth and plan infrastructure more effectively
⛈️	Disaster response	Real-time flood mapping powered by GeoAI allows agencies to predict impact zones and coordinate faster interventions

In essence, GeoAI allows West Africa to leapfrog traditional constraints, offering data-driven foresight for better resource allocation and policy-making.

Artificial Intelligence, when combined with GIS, is unlocking new possibilities for predictive analytics. From forecasting climate impacts on agriculture to optimizing city traffic, GeoAI turns maps into intelligent decision tools. Sambus Geospatial supports this transformation by delivering Esri's advanced AI-powered tools and training institutions to use them effectively.

Increased Collaboration: Breaking Down Silos

The future of geospatial technology in West Africa lies in collaboration across borders, industries, and institutions. Regional partnerships like ECOWAS are beginning to see the value of shared geospatial infrastructures. Cross-border disease surveillance or integrated transportation systems, for instance, has taken a leap in smoother operations with the help of smoother communication capabilities of a central monitoring system, thanks to geospatial technology.

Equally important is the synergy between public and private sectors. Governments may provide authoritative datasets, while tech startups and established geospatial firms contribute innovation, platforms, and expertise. Together, they create an ecosystem where data is interoperable and solutions are scalable.

A great case study is Lagos State, where collaboration between government agencies, universities, and private companies has accelerated the adoption of GIS for traffic management and urban planning. This model demonstrates how joint ownership of geospatial solutions leads to more inclusive and impactful outcomes.

No single organization can solve regional challenges alone. Governments, private companies, and communities need to work together to transform data into solutions that scale across sectors. Sambus plays a key role by providing enterprise GIS platforms that enable seamless data sharing and cross-sector partnerships.

Capacity Building: Empowering the Next Generation

Technology is only as effective as the people who use it. Across West Africa, the demand for GIS skills and geospatial literacy is growing exponentially. Universities, training centers, and industry leaders must continue investing in building a new generation of geospatial professionals. Building our technical and human capacity ensures that projects are sustainable and have long-term impact.

Sambus has invested heavily in training programs, workshops, and knowledge transfer to equip universities, businesses, and governments with the skills to thrive in a digital-first economy. Our industry webinars, GeoAcademy programme and user conferences are few of such initiatives. We equip students, professionals, and policymakers with the skills to harness GIS in solving real-world problems. From climate change monitoring to smart agriculture, capacity-building ensures that West Africa is not just a consumer of geospatial solutions, but a creator and innovator.

TECHNOLOGY IS ONLY AS EFFECTIVE AS THE PEOPLE WHO USE IT

Closing Thoughts: Bridging Gaps, Accelerating Decisions

The future of geospatial technology in West Africa lies in bridging geographical and communication gaps, enabling faster and smarter decisions. The future is one where location intelligence becomes the foundation of progress: Mapping Ideas, Guiding Policies, and Shaping Sustainable Development Across the Sub-Region, just as our tagline embodies. At Sambus Geospatial, we are proud to be at the heart of this transformation. We believe that mapping not just data, but rather opportunities for sustainable growth across the region. By integrating GeoAI, fostering collaboration, and building human capital, we can empower institutions to make faster, smarter, and more inclusive decisions.

Redwire Marketing Consulting

Redwire Marketing Consulting – Harnessing GIS for Consumer Insight

Redwire Marketing Consulting, a leading brand strategy firm, has been leveraging Sambus Geospatial's ArcGIS-powered solutions to transform how businesses understand consumer behavior. By integrating geospatial intelligence into their market research, Redwire has been able to:
• Map consumer demographics with precision.
• Identify location-based patterns that shape purchasing behavior.
• Provide clients with actionable insights for targeted brand strategies.

This collaboration has helped Redwire go beyond traditional research, positioning them as pioneers in data-driven marketing powered by location intelligence. With GIS, Redwire delivers effective marketing solutions to their clients, strengthening their competitive edge in Nigeria's evolving consumer market.

Segilola Resources Operating Limited (SROL)

Segilola, one of Nigeria's leading gold mining companies, has taken bold steps to modernize its operations and improve efficiency through the adoption of geospatial solutions provided by Sambus Geospatial.

Faced with the challenges of resource exploration, operational monitoring, and sustainability compliance, Segilola embraced ArcGIS-powered solutions that transformed its mining operations by enabling:

- **Smarter Exploration** – Segilola uses ArcGIS Pro for mineral mapping, analyzing satellite imagery to identify mineral structures that reveal potential gold deposits.
- **Enhanced Accuracy** – ArcGIS integrates geophysical data with terrain models, significantly improving the reliability of exploration results.
- **Productivity Gains** – Automation of repetitive tasks through ArcGIS helps Segilola saves time and increases overall efficiency in operations.
- **Precision Planning** – GIS supports drill collar placement and orientation planning, ensuring better accuracy and cost-effectiveness.

These solutions have empowered Segilola with data-driven operations, improved sustainability compliance, and maximized resource productivity. The result is a mining operation that's not only more efficient but also aligned with the future of sustainable resource management.

TRAININGS &
— CAPACITY DEVELOPMENT

EMPOWERING ORGANIZATIONS TO MAXIMIZE THE POWER OF GIS

In Q3 2025, Sambus Geospatial continued to demonstrate its commitment to empowering organizations with the knowledge and skills to maximize the power of GIS. Through tailored, hands-on training programs, we strengthened capacity across the mining and oil & gas sectors by delivering five specialized GIS trainings.

1. Field Data Collection and Management Using ArcGIS: Segilola Resources Operations Limited (Osun State)

Over an intensive 8-day session, participants mastered workflows in ArcGIS Field Apps, Survey123, Dashboards, and Workforce to streamline field operations and improve data-driven decision-making.

2. Spatial Analysis with ArcGIS Pro – Segilola Resources Operations Limited (Osun State)

Another 8-day advanced training introduced participants to a broad range of spatial analytical tools, including proximity and overlay analysis, suitability modeling, geostatistical interpolation, and 3D analysis, helping them unlock deeper insights from their geospatial data.

3. Introduction to GIS using ArcGIS Pro: Essential Workflows – Newcross Oil and Gas (Victoria Island, Lagos)

This 4-day foundational training equipped participants with a strong understanding of GIS concepts, data management, spatial analysis, and map production using ArcGIS Pro.

4. Field Data Collection and Management Using ArcGIS – Newcross Oil and Gas (Victoria Island, Lagos)

A focused 4-day course enhanced participants' abilities in enterprise geodatabase design, geodatabase topologies, and leveraging ArcGIS apps for smarter, more reliable field operations.

5. ArcGIS Enterprise Portal Management – Newcross Oil and Gas (Victoria Island, Lagos)

In a 2-day specialized training, participants gained practical experience in web GIS, content sharing, publishing workflows, and user management within the ArcGIS Enterprise environment.

Impact and Reach

Number of Trainings - 5		Total Participants 31		Locations Osun State & Lagos State
Industries		Duration		
•Mining •Oil & Gas		26 days		

This succeeded in equipping 31 professionals in Osun and Lagos States with practical skills to enhance field operations, spatial analysis, and enterprise GIS management to drive innovation and efficiency in their operations.

From field data collection with ArcGIS apps to advanced spatial analysis in ArcGIS Pro and ArcGIS Enterprise portal management, these programs strengthened organizational capacities, driving smarter decision-making and sustainable growth through geospatial technology.

This reflects Sambus Geospatial's dedication to not just providing software but delivering capacity development that enables organizations to achieve operational efficiency, smarter decision-making, and sustainable growth through GIS.

TRAININGS &
CAPACITY DEVELOPMENT

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BOOSTING DATA MANAGEMENT CAPACITIES WITH ARCGIS PRO

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In the modern mining industry, the most valuable resources are often data and skilled professionals who can turn that data into insight. This past quarter, we delivered a week-long, virtual training session with some staff of Asanko Gold, a leader in Ghana's gold mining sector. It was designed to elevate their team's geospatial capabilities with ArcGIS Pro.

Our mission was clear: to empower their operations team to harness the full power of GIS for smarter, faster, and safer mining.

The Training Journey: From Core Concepts to Complete Workflows
We designed a hands-on, intensive curriculum that took participants on a complete journey, ensuring a deep, practical understanding of the ArcGIS ecosystem.

• **Building a Strong Foundation:** We started with the fundamentals, establishing a solid understanding of GIS principles and navigating the powerful ArcGIS Pro interface. Participants quickly got comfortable working with different data formats, managing attribute tables, and understanding the critical role of coordinate systems and projections to ensure data integrity.

• **Mastering Data & Visualization:** From there, we dove into the core skills of a GIS professional. The Asanko Gold team mastered vector data editing to ensure their spatial data is always accurate. They also learned advanced visualization techniques, turning raw data into clear, insightful maps using sophisticated symbology, labeling, and annotation.

• **Harnessing Advanced Data like LiDAR:** We pushed beyond the basics to explore modern data sources. A key module focused on LiDAR data processing, where the team learned to work with LAS datasets, classify point clouds, and generate high-resolution surface models like Digital Elevation Models (DEMs) and Digital Surface Models (DSMs), essential for modern earthworks and terrain analysis.

• **Creating a Seamless Field-to-Office Workflow:** The training culminated in connecting field operations directly to the decision-makers. We implemented a complete mobile workflow using the ArcGIS ecosystem:

- **ArcGIS Survey123 & Field Maps:** Participants learned to design smart forms and deploy field apps for efficient, accurate data collection directly on-site.

- **ArcGIS Online:** They practiced sharing data seamlessly from the field to a central cloud platform.

- **ArcGIS Dashboards:** Finally, they learned to link this live field data to interactive dashboards, enabling real-time monitoring of mining operations.

The Impact: A Team Equipped for Data-Driven Decisions
The results were immediate and tangible. The Asanko Gold team left the training with not just theoretical knowledge, but with the practical skills to implement end-to-end geospatial workflows. They are now fully equipped to manage and edit their own data, produce professional-grade maps for reporting, process advanced datasets, and leverage mobile tools to enhance operational efficiency.

This program has laid a robust foundation for integrating GIS technology deeper into Asanko Gold's operations, enhancing everything from exploration to environmental management.

Looking Ahead: A Partnership for the Future
Our work with Asanko Gold is a testament to our belief that technology is only as powerful as the people who use it. We are excited to see them apply their new skills and look forward to continuing our partnership to explore more advanced applications, including 3D GIS and spatial analysis tailored specifically for the mining sector.

In a nutshell, the training succeeded in providing participants with skills to:

◁	Confidently navigate ArcGIS Pro and manage geospatial datasets
🖼	Perform data editing, visualization, and map creation
🌐	Work with coordinate systems and symbology controls
🛰	Visualize and classify LiDAR data for surface analysis
🖼	Create and export professional-quality maps
🖥	Share data and maps securely using ArcGIS Online
📱	Utilize Field Maps and Survey123 for mobile data collection
📊	Build Operational Dashboards for real-time reporting

Empowering Surveyors with Geospatial Skills: Sambus Geospatial Partnered with NIS Lagos

Sambus Geospatial partnered with the Nigerian Institution of Surveyors (NIS), Lagos State Branch, in a strategic effort to strengthen geospatial capacity and enhance the professional development of surveyors across the state. This collaboration reflects our long-term commitment to supporting institutions, empowering professionals, and advancing geospatial understanding across the region.

As the geospatial industry continues to evolve, the responsibilities of modern surveyors have expanded far beyond traditional field measurements. Today's professionals are expected to work with tools that integrate satellite imagery, real-time data streams, advanced spatial analytics, and digital mapping workflows. These capabilities support smarter planning, improve accuracy, and enable data-driven decision-making across critical sectors such as land administration, environmental management, infrastructure development, and urban planning.

This shift has created a growing need for surveyors to understand how to collect, analyze, and interpret spatial data using cutting edge GIS softwares, skills that are now essential in delivering work that meets global standards. Recognizing this transformation, Sambus Geospatial partnered closely with NIS Lagos to help members embrace these emerging requirements.

Key components of our engagement included:
• Provision of an Esri software license
This enabled participants to explore ArcGIS solutions firsthand, gain practical experience, and understand the full capabilities of modern GIS technology. The license provided a hands-on opportunity for surveyors to experiment, practice, and apply geospatial tools in their day-to-day work.
•Access to curated Esri Academy training pathways
These self-paced learning resources were carefully selected to match the technical needs of the NIS Lagos community. Members were equipped to take foundational and advanced courses covering spatial analysis, data management, geospatial workflows, and modern mapping techniques—allowing them to build skills progressively and on their own schedule.

• A two-day demonstration training on flood mapping using ArcGIS Pro
This session focused on applying GIS to a real-world scenario: flood assessment in the Lower Ogun River Basin. Participants were guided through data preparation, spatial analysis, hydrological modeling, and map output creation. The training clearly demonstrated how geospatial technology can support environmental monitoring, disaster preparedness, and informed community planning.

Through this collaboration, NIS Lagos successfully advanced its Mandatory Continuing Professional Development (MCPD) program, ensuring that its members remain technically relevant in a rapidly evolving digital landscape. Participants gained a stronger understanding of how Esri-powered solutions can improve their workflows, expand their professional capabilities, and help them contribute to national development in more measurable ways.

In addition to the training, the program created room for value-filled conversations about the future of surveying, the growing demand for spatial intelligence, and the role technology plays in building resilient, efficient, and sustainable communities.
At Sambus Geospatial, we remain dedicated to helping professionals and institutions grow their geospatial capacity. By engaging in partnerships like this, we continue to promote innovation, support ongoing learning, and empower the community with practical, industry-ready technical skills. Our goal is to ensure that organizations across West Africa have the tools, knowledge, and confidence needed to harness the full potential of geospatial technology.

As the world becomes increasingly data-driven, the need for skilled professionals who understand spatial relationships, mapping technologies, and analytic workflows grows stronger. We believe that collaborations like this lay the foundation for a more informed, empowered, and future-ready geospatial community.

# DELIVERING IMPACTFUL GEOSPATIAL SOLUTIONS

SOLUTIONS
—— IN ACTION

S ambus Geospatial delivered impactful ArcGIS-powered solutions across mining, banking, and agriculture, helping the organizations harness the power of ArcGIS technology for smarter decision-making, operational efficiency, and sustainable growth.

• Mining Sector: Transforming Operations with ArcGIS
Clients: Lafarge, Dangote, & ANMRL
Sambus deployed a suite of ArcGIS-powered solutions that enhanced exploration accuracy, operational efficiency, and asset visibility. By combining mineral mapping, drill hole monitoring, field data collection, and IoT-enabled asset tracking with real-time dashboards, mining firms gained unprecedented insight into their operations. This data-driven approach is enabling predictive modeling, operational transparency, and sustainable resource management.
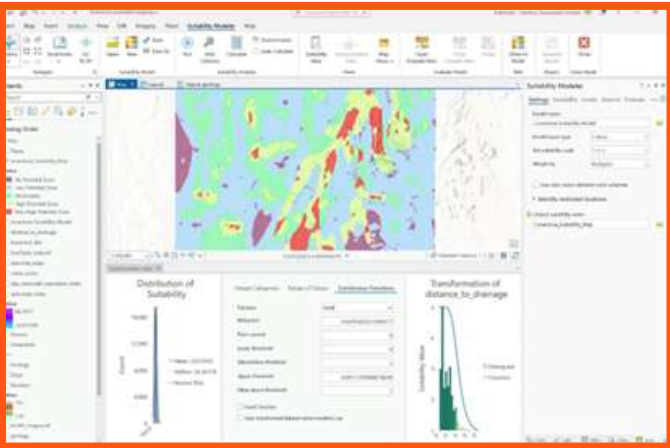
Satellite image showing structures holding mineral zones

**• Agriculture: Mapping Farmers, Empowering Food Security**
Clients: Agbeyewa Farm & Ondo State Agribusiness Empowerment Center
To address the challenge of accurate farmer profiling and equitable resource distribution, Sambus deployed ArcGIS Survey123, Field Maps, and Dashboards. The solution enabled digital farmer registration, GPS-based farmland mapping, and real-time dashboards to track input distribution and

• Banking Sector: Smarter Decisions with Geospatial Intelligence
Client: Parallex Bank
For Parallex Bank, Sambus implemented GIS-driven intelligence solutions to transform both asset management and network expansion. Interactive dashboards now provide real-time tracking and predictive maintenance of branches, ATMs, vehicles, and IT infrastructure. Site suitability assessments that combine demographics, accessibility, and competitor insights are guiding smarter branch and ATM deployment strategies. The result: greater efficiency, optimized investments, and stronger customer reach.
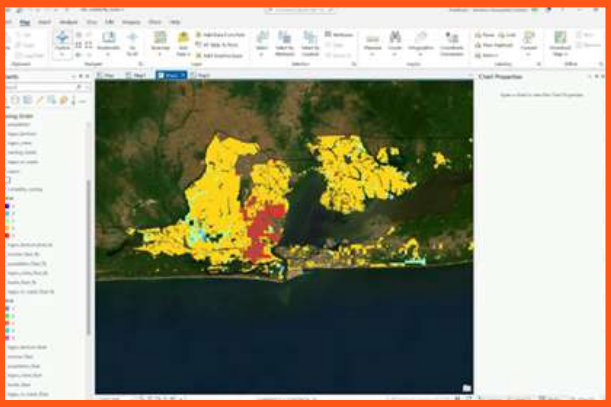

Suitability map for banks suitable zones

ensure accountability. Policymakers and donor agencies now benefit from live data for smarter planning, transparency, and food security interventions.

These solutions showcase how Sambus continues to bridge geospatial technology with real-world impact, empowering industries with smarter strategies and sustainable growth. Thus, Sambus reaffirmed its role as a trusted partner in driving digital transformation across West Africa's key industries. Our Q3 results show that we don't just deliver software; we provide actionable geospatial solutions that solve real-world problems.
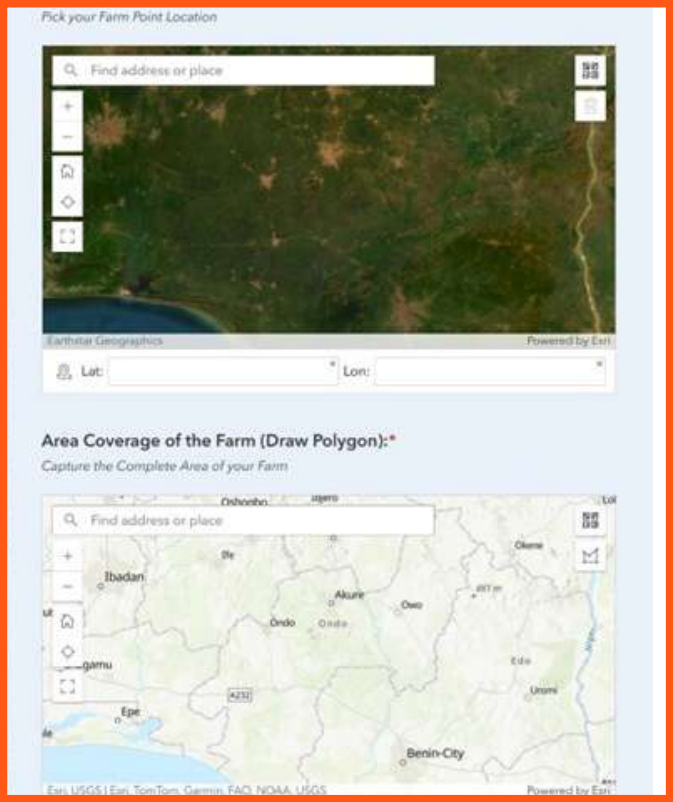
Survey form showing farm point location

Impact

	Mining Lafarge, Dangote & ANMRL	Real-time dashboards, mineral mapping, and IoT-enabled monitoring enhanced exploration accuracy, operational efficiency, and sustainability
	Banking Parallex Bank	Interactive dashboards and site suitability analysis empowered smarter asset management, predictive maintenance, and customer-focused expansion
	Agriculture Agbeyewa Farm & Ondo State Agribusiness Empowerment Center	Digital farmer profiling, GPS farmland mapping, and distribution dashboards improved accountability, transparency, and food security planning

Advancing Asset Management Through Geospatial Technology

O ur team tackled one of the most persistent challenges in Ghana's real estate sector: managing physical assets efficiently. We are thrilled to share a major achievement that moves asset management from a complex problem to a streamlined, data-driven solution, which is successfully being used by Ghana Cocoa Board, Ghana National Petroleum Authority, and Ghana Water Limited.w

Real estate development in Teshie, Accra, Ghana

From Scattered Data to 'Lost' Land

Many large-scale property managers, from government bodies to private developers, are plagued by critical inefficiencies. The core issues we aimed to solve were:

• **Limited and Inefficient Data:** Tracking hundreds or thousands of buildings and plots with outdated systems leads to errors and wasted resources.

• **'Lost' Parcels:** A surprising but common problem where inadequate records make it difficult to know who owns or occupies a specific parcel of land, leading to disputes and revenue loss.

• **Allocation Headaches:** Assigning properties to clients or tenants was often a complicated, manual process prone to error.

A Unified Digital Ecosystem

In response, we developed a comprehensive digital ecosystem designed to bring absolute clarity to property management. Our solution provides a single source of truth for every asset, empowering managers to:

• **Monitor Asset Occupation:** Get a real-time, bird's-eye view of which properties and parcels are occupied, vacant, or pending allocation.

• **Streamline Maintenance:** Capture maintenance requests directly from tenants or users through a simple digital form. This ensures issues are logged, tracked, and resolved efficiently.

• **Manage Costs Effectively:** Evaluate and control the costs associated with asset maintenance, providing clear financial oversight.

• **Visualize Everything:** At the heart of our solution is a powerful, customizable dashboard that presents all this critical data through interactive maps, charts, and reports for intuitive monitoring and evaluation.

Real estate development at Kwabenya, Accra, Ghana

Asset management dashboard for monitoring occupied and unoccupied buildings in an estate

Powered by Leading Technology, ArcGIS

To build this robust system, we leveraged the industry-leading ArcGIS suite:

• **Data Collection:** We used ArcGIS Survey123 to create intuitive forms for property overview, maintenance reporting, and issue resolution.

• **Data Visualization:** All incoming data is fed directly into a live ArcGIS Dashboard, providing stakeholders with instant insights.

• **Mapping and Analysis:** The foundational maps and spatial data are managed using ArcGIS Pro and ArcGIS Online, ensuring geographic accuracy.

Real-World Impact and Applications

The implications of this solution are far-reaching, offering immense value to a wide range of clients:

• **Government Housing Projects:** Can now track the construction, allocation, and maintenance of public housing with unprecedented accuracy.

• **Private Real Estate Developers:** Can manage their portfolios more effectively, from land acquisition to leasing and sales.

• **Property Lessors:** Can easily oversee their rental properties, track occupancy, and improve tenant satisfaction through faster maintenance responses.

Ultimately, this solution delivers what every asset manager needs:

	enhanced efficiency		significant cost savings		greater client satisfaction

This Q3 achievement is more than a technical success; it is a new benchmark in providing intelligent, reliable property management solutions. We look forward to deploying this powerful tool for more of our clients.

MAP

3D MAPPING TRANSFORMS DATA INTO VISION—TURNING ANALYSIS INTO INSIGHT FOR SMARTER INFRASTRUCTURE PLANNING.

GALLERY

Military Grid Reference System (MGRS) Mapping – Produced an operational map for the Artillery Corps leveraging MGRS standards, improving spatial accuracy and situational awareness in defense operations. - A map of Kachia in Kaduna State.

EACH MAP TELLS A STORY—OF GROWTH, CHANGE, AND INNOVATION ACROSS WEST AFRICA'S EVOLVING LANDSCAPE."
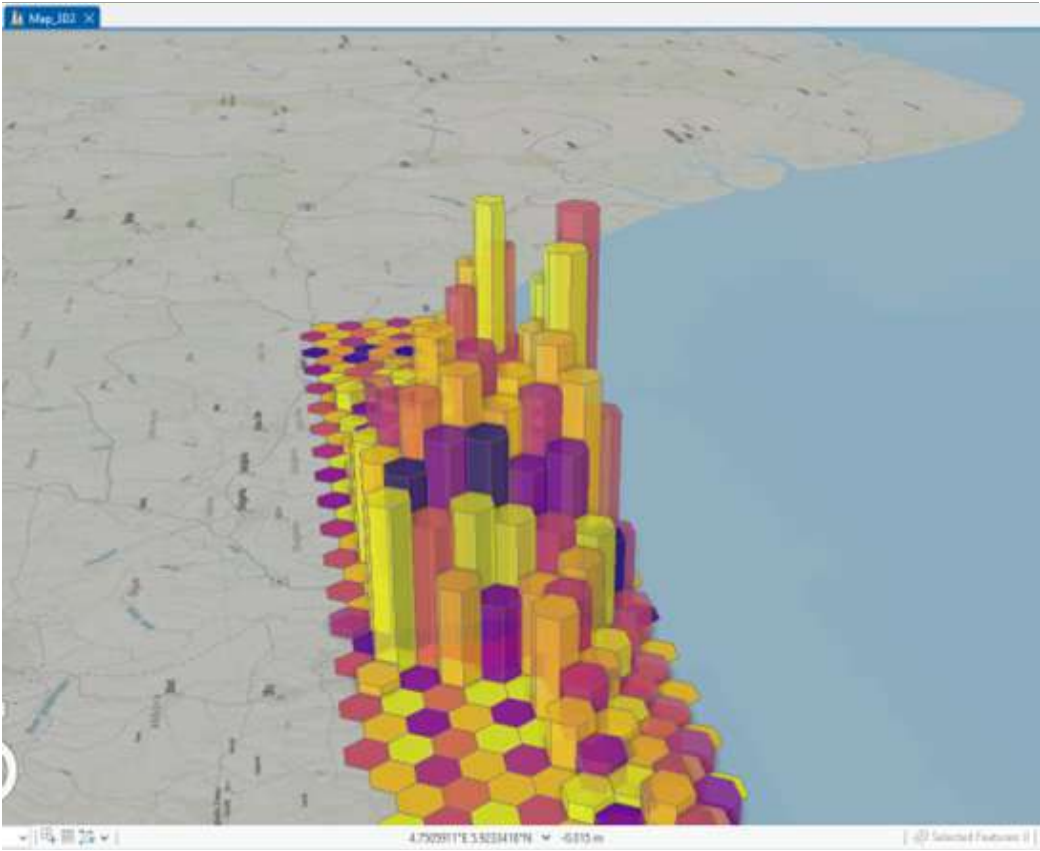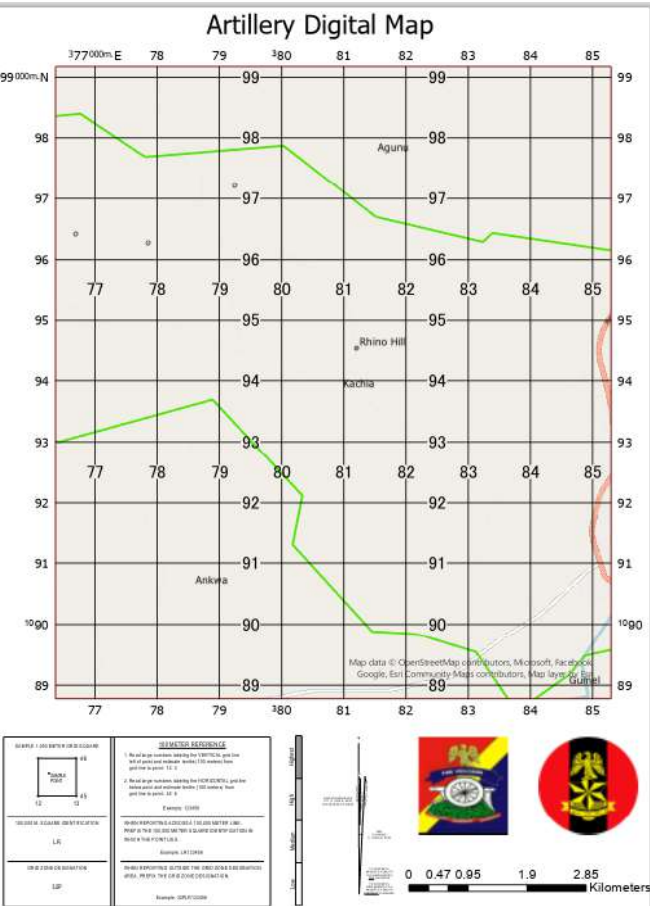

3D Gas Distribution Model – Built a three-dimensional representation of residential gas distribution networks using ArcGIS Utility Network, enabling better visualization of infrastructure and supporting future planning and maintenance workflows. - A model based on Abuja

Settlement Growth Finger Tool – Developed a custom Python tool in ArcGIS Pro to analyze and visualize settlement growth patterns. This tool helps stakeholders monitor urban expansion and plan for sustainable development. - A Python tool tested by dummy data based on Kaduna State.

3D Visualization of VIIRS Data – Transformed two-dimensional VIIRS (Visible Infrared Imaging Radiometer Suite) satellite data into 3D visualizations in ArcGIS Pro, making nighttime light intensity and related insights more interactive and actionable, which was presented during the UC. - A map of Lagos State.

FEATURE
ARCHIVE

FEATURE ARTICLE

Monitor, Measure & Mitigate: Integrated Solutions for Geohazard Risk

ENVI Inform InSAR Monitoring for Rail

Displacement (mm)

Minimum **-23.90**

Maximum **0.30**

Average **-10.43**

Confidence
84.5%
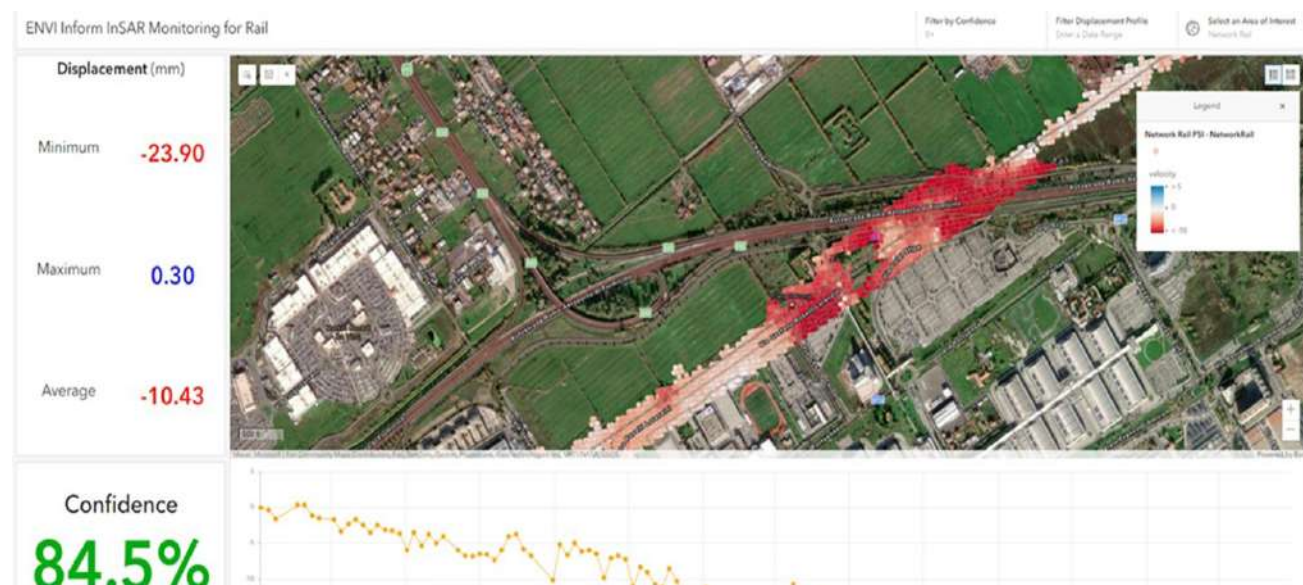
Geohazards such as slope instability, erosion, settlement, or seepage pose ongoing risks to critical infrastructure. Roads, railways, pipelines, and utility corridors are especially vulnerable to these natural and human-influenced processes, which can evolve silently until sudden failure occurs. Traditional ground surveys provide only periodic snapshots, leaving blind spots in between inspections. That is where NV5's integrated approach makes the difference.

Helping Infrastructure, Transportation and Utility Leaders Stay Ahead of Landslides, Subsidence, and Slope Failures

As satellite imagery and Synthetic Aperture Radar (SAR) technology advance with higher revisit rates and improved resolution, the opportunities for continuous geohazard monitoring have never been greater. NV5 has built on this momentum, combining automated tipping and

cuing systems with 30+ years of engineering expertise to deliver comprehensive geohazard monitoring, measurement, and mitigation solutions to prevent costly damage and catastrophic failures.

1. Proactive Detection Through Remote Sensing
Traditional ground surveys, especially over hundreds of miles of spatially dispersed assets like roads, railways, or landslide-prone corridors, require extensive time and resources and still often fail to identify evolving threats between surveys. SAR-based monitoring with ENVI Inform, NV5's automated monitoring system that analyzes large volumes of data and delivers insights, fills those gaps with near real time detection of abnormal movement.

This is done through:
• Baseline Creation
• Routine Surveillance Cadence
• Tipping and Cueing Alerts

2. Ground Truthing the Alerts
Once SAR-based monitoring is used to identify potential issues, NV5's engineers and surveyors investigate using ground-based instrumentation. They can confirm settlement, slope stability, subsidence, and other potential hazards through
• Subsurface Exploration
• Installation of additional instrumentation to understand site conditions (e.g. slope inclinometers, TDR (Time Domain Reflectometry) cables, groundwater piezometers, crack gauges, settlement monuments, and others)
• Contextual Interpretation

3. Engineering Solutions That Work
With prioritized high-risk areas identified, NV5's engineering team steps in to deliver:
• Comprehensive Remediation Designed
• Cost-Effective Execution
• End-to-End Responsibility

LIDAR: Precision Change Detection and Terrain Analysis
While SAR offers powerful capabilities for large-scale monitoring, lidar remains one of the most effective tools for high-resolution terrain analysis, change detection, and volumetric measurement. NV5 integrates repeat lidar collections into its geohazard workflows to quantify subtle but critical changes in topography over time.

1. Erosion and Sedimentation Tracking
Lidar-derived morphology products (hillshades, slope maps, roughness indices) enable detection of subtle terrain failure and erosion patterns. These data are interpreted by NV5's geologists and engineers to understand causation, whether from natural processes or human activity like uphill development.

2. Target Mitigation Planning
With LIDAR, the appropriate level of precision depends on the scale of the problem being addressed. Broad-area collections at the county, state, municipal, or watershed level provide a valuable historic record and context for identifying emerging patterns of instability. But when the goal shifts to site-specific remediation, UAS-

based lidar surveys deliver the centimeter-level precision needed to quantify displaced material, map future risk zones, and design effective mitigation strategies. By combining these scales, engineers can move from big-picture monitoring to detailed, actionable plans tailored to high-risk area.

Smarter, Unified Geohazard Management
By combining SAR-base wide area surveillance with LIDAR's precision measurement capabilities, NV5 delivers a multi-scale approach to geohazard monitoring. This allows infrastructure, transportation and utility leaders to detect emerging issues early, measure their scope with accuracy, and take timely, informed action before problems escalate.
Unlike traditional approaches that require juggling multiple vendors for satellite analysis, surveying and engineering, NV5 offers a true end-to-end solution. Their integrated workflows ensure continuity, accountability, and efficiency from first detection through remediation.

The NV5 Advantage:
• Pre-emptive satellite-based monitoring
• Seamless ground-based validation by engineers
• Turnkey mitigation planning and execution

Read the full article here: https://www.nv5.com/news/integrated-solutions-geohazards/
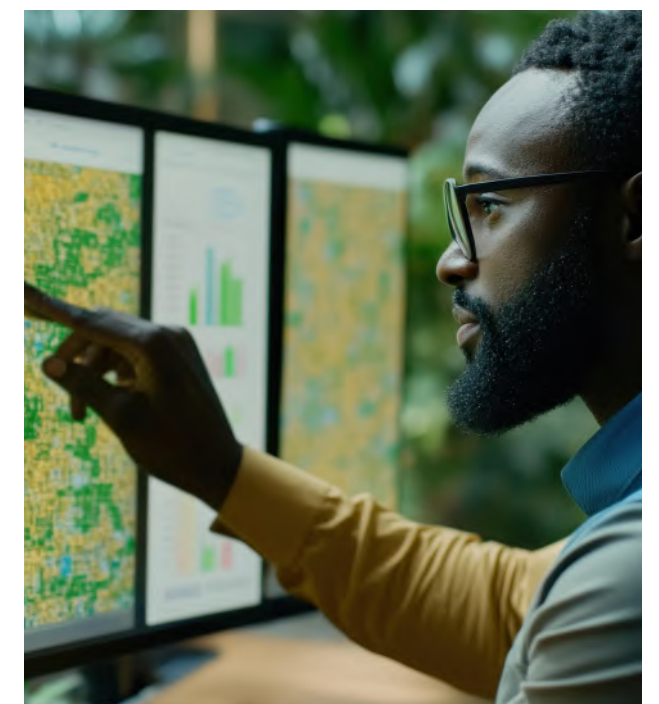
NAVIGATING THE CHANGING LANDSCAPE OF GEOSPATIAL CAREERS

Now more than ever, the geospatial technology industry is undergoing a significant transformation driven by rapid technological advancements and an increasing demand for innovation. As a result, job responsibilities are evolving at a rate that can seem overwhelming, requiring professionals to adapt and develop new skills to remain relevant.

But how exactly are things changing? What does it mean for GIS professionals, employers, and the future of work? And what are the concrete steps you can take to make sure you're keeping up with a landscape that is constantly shifting under your feet?

Emerging Technologies:
1. Shifting from a carbon-based economy to a more sustainable and environmentally friendly one: It involves reducing greenhouse gas emissions, promoting renewable energy sources, and implementing practices that protect and restore the environment.

2.Digital Access and Data Management: For GIS careers, this translates to a growing demand for expertise in data governance, integration, and interoperability.

Changing Career Roles
And with the foregrounding of jobs related to AI, big data, and environmental stewardship, new roles are emerging. In the GIS industry, this means new and evolving positions that leverage these technologies, including:

1. Geospatial AI specialists: These specialists integrate artificial intelligence with geospatial data to uncover hidden patterns and trends in spatial data, providing organizations with deeper insights and more informed strategies.

2.Climate Resilience Analysts: These analysts help organizations develop strategies to adapt to changing environmental conditions and enhance their resilience against natural disasters.

Digital twins enable more efficient urban planning, infrastructure management, and environmental monitoring. By simulating and optimizing various scenarios, these specialized engineers help organizations improve resource allocation, reduce operational costs, and enhance overall efficiency.

How To Stay Ahead of the Curve
1. Blend interdisciplinary skills into your technical approach to problem-solving.
2. Adapt, upskill, and reskill to keep pace with technological changes and to leverage new tools and methodologies effectively.
3. Adopt an initiative-taking approach in developing new skills and staying updated on industry trends. This journey begins with embracing continuous learning..
4. Gain practical experience like internships and project opportunities to apply your skills in real-world scenarios.
5. Develop technical skills by mastering GIS software and familiarizing yourself with advanced features and functionalities, including programming languages and AI,

machine learning, and the IoT.
6. Develop soft skills like effective communication as well as strong teamwork and collaboration skills.
7. Build a professional network through membership in professional bodies, engaging with industry professionals on platforms like LinkedIn, and participating in discussions,
8. Stay current and up to date on industry developments by subscribing to publications, participating in geospatial forums and communities, and contributing to thought leadership by sharing your expertise.

Over time, GIS skills are becoming not just relevant but essential. And as the industry evolves, professionals must adopt an initiative-taking approach in developing new skills, embracing continuous learning, and adapting to the latest trends.

Read the full article: *https://www.esri.com/about/ newsroom/arcuser/navigating-the-changing-landscape-of-geospatial-careers*

PHOTO GALLERY

YSA & HACKATHON
AWARD WINNERS

TEAM SPATIAL SYNTAX
Omolola Adeyemi Olaide &
Ethan Akpowevwe Simeon

FALCON TEAM
Abayomi Glory Kehinde &
Olusola Favour Joy

TEAM GEO-NEXUS
Ogungbemi Ezekiel Tobiloba &
Fatoki Akinjide Lawrence

UPCOMING
EVENT

	GIS DAY 2025	
	19TH NOVEMBER	
	2026 SAG AWARDS	
	DEADLINE FOR SUBMISSIONS: TBD	
	ESRI USER CONFERENCE WEST AFRICA 2026	
	DATE: 14-15 SEPTEMBER 2026	
	CALL FOR SPEAKERS	

CLOSING
NOTE

FROM MAPPING DATA TO MAPPING IMPACT, SAMBUS GEOSPATIAL REMAINS AT THE HEART OF WEST AFRICA'S DIGITAL TRANSFORMATION.

The common thread in our work this quarter, from revolutionizing asset management to empowering industry professionals, is the innovative power of mapping ideas.

Our achievements highlight Sambus' role as a trusted partner shaping smarter decisions across West Africa. As we close Q3, our commitment remains clear: to not only deliver world-class geospatial solutions but to ensure they translate into real impact for governments, businesses, and communities across the sub-region.

Thank you for being part of our journey as we work to build this future together. We are excited about what the next quarter holds.

Join our mailing list to stay informed of product updates, industry trends, upcoming events and training opportunities:

Scan to Join our
Mailing list