# Unveiling Synergies: YSAN-WA Webinars on African Geo-portals and the Impact of AI in Surveying for Sustainable Development in West Africa

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**Summary:**

This paper delves into the insightful webinars hosted by the Young Surveyors African Network - West Africa (YSAN-WA), focusing on the integration of African Geo-portals and the transformative impact of Artificial Intelligence (AI) in surveying. The first webinar explores the functionalities and potentials of African Geo-portals as crucial tools for geospatial data access and utilization in the West African context. The second webinar investigates the profound implications of AI on surveying methodologies, aiming to foster sustainable development practices in the region.

The research methodology involves an analysis of the key themes, discussions, and recommendations emerging from both webinars. YSAN-WA's expertise in the field, combined with the perspectives shared by guest speakers and participants, forms the basis for proposing an integrated framework that harnesses the strengths of both African Geo-portals and AI technologies. Special attention is given to addressing the specific challenges and opportunities associated with surveying and resource management in West Africa.

The paper highlights the potential for synergy between the two webinars, envisioning a holistic approach that leverages the data richness of African Geo-portals with the precision and efficiency offered by AI tools. Insights gleaned from these webinars form the basis for developing a roadmap for practitioners, policymakers, and researchers interested in implementing AI-enhanced surveying methodologies within the West African context. The socio-economic and environmental impacts, as well as ethical considerations, are explored to ensure a comprehensive understanding of the proposed integration.

Moreover, the paper discusses the role of YSAN-WA in promoting knowledge exchange and capacity building within the region. It emphasizes the need for continued collaboration and partnerships to realize the full potential of African Geo-portals and AI technologies in addressing the unique challenges faced by West Africa. The findings presented aim to contribute to a more resilient and sustainable approach to surveying and resource management, aligning with the goals of YSAN-WA and fostering a community-driven vision for the future of West African development.

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# 1. INTRODUCTION

In the pursuit of advancing the African Geospatial Project, this paper advocates the strategic integration of Artificial Intelligence (AI) as a transformative catalyst. The thematic focus lies on "Your World, Our World: Resilient Environment and Sustainable Resource Management for All." By marrying the precision of AI technologies with the imperatives of resilient surveying and sustainable resource management, the paper envisions a paradigm shift in the approach to geospatial initiatives.

The integration of AI holds the promise of revolutionizing traditional surveying methodologies, providing unprecedented efficiency and accuracy. This not only fortifies surveying techniques against the dynamic challenges posed by climate change and urbanization but also establishes a foundation for real-time monitoring and adaptation to environmental shifts, ensuring the longevity and relevance of geospatial projects.

Furthermore, this paper emphasizes the critical role of AI in optimizing resource management through advanced analysis of geospatial data. Sustainable practices, grounded in the insights derived from AI applications, emerge as essential components for preserving environmental integrity over the long term.

In essence, this paper serves as a call to action, urging the geospatial community to embrace the potential of AI for resilient surveying and sustainable resource management, thereby shaping a future where "Your World" and "Our World" coexist harmoniously.

Grounded in the ethos of environmental resilience, this paper not only aims to present theoretical insights but also to offer practical perspectives. It will explore real-world applications, showcasing how young surveyors in West Africa can leverage AI for surveying tasks through a series of webinars and training initiatives organized by the Young Surveyors African Network-West Africa (YSAN-West Africa). Through this comprehensive approach, we aspire to contribute to a future where technology and environmental conservation seamlessly coexist.

## 1.2 Significance of Artificial Intelligence in Surveying

Artificial Intelligence (AI) stands as a transformative force in the field of surveying, wielding immense significance across various dimensions of the discipline (RICS, 2023).some of the significance of AI in surveying are highlighted below;

### 1.2.1 Precision and Efficiency

AI technologies enhance surveying methodologies by providing unparalleled precision and efficiency. The automated analysis of vast geospatial datasets allows for swift and accurate decision-making, critical for resilient surveying in dynamic environmental scenarios.

### 1.2.2 Adaptability to Environmental Changes

The dynamic nature of climate change and urbanization demands surveying techniques that can adapt in real-time. AI, with its ability to process and interpret data rapidly, enables surveyors to monitor and respond to environmental shifts promptly, ensuring the resilience of geospatial projects.

### 1.2.3 Optimized Resource Management:

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AI-driven analysis of geospatial data facilitates optimized resource management. By extracting valuable insights from large datasets, AI empowers surveyors to make informed decisions regarding sustainable practices, contributing to long-term environmental health (RICS, 2023)

### 1.2.4 Predictive Modelling
AI enables the development of predictive models that forecast environmental changes and trends. This proactive approach aids in planning and implementing surveying initiatives that are not only responsive to current challenges but also anticipatory of future scenarios.

### 1.2.5 Efficient Data Analysis
The sheer volume of geospatial data generated requires advanced analytical tools. AI algorithms excel in processing and interpreting this data, offering surveyors the ability to extract meaningful information efficiently and accurately.

In the context of our paper, which explores the integration of AI within the African Geo-portal for resilient surveying and sustainable resource management, the significance of AI lies in its potential to revolutionize traditional surveying practices. It emerges as a key enabler, aligning with the overarching theme of fostering a resilient environment for the benefit of all.

## 2. LITERATURE REVIEW
### 2.1 AI in Surveying: Current State and Potential Impact
Recent research has highlighted the significant impact of AI in surveying and geo informatics. (Xu *et al.*, 2023; Zhang *et al.*, 2023) both underscore the potential of AI in enhancing the accuracy and safety of geoscience and remote sensing tasks, with Xu specifically addressing the need for AI security in these applications. Jiang *et al.*, (2022)further emphasizes the growing role of AI in geohazard research, particularly in the areas of ground motion, deep learning, and landslides. These studies collectively underscore the transformative potential of AI in these fields, while also highlighting the need for continued research and development to ensure its safe and effective application.

### 2.3 The African Geospatial Project: Goals and Initiatives
In August, a comprehensive training series was conducted as part of the African Geospatial Project titled Developing Project Approach using Africa Geoportal. This initiative aimed to empower participants with essential skills for utilizing the Africa Geoportal in project implementation. Over the course of four sessions, held weekly via the Zoom platform, participants delved into various aspects of geospatial technology.

The training commenced with an introduction to the Africa Geoportal, highlighting its significance for young surveyors and exploring its key features and functionalities. Subsequent sessions focused on different phases of project implementation using the Geoportal. Participants learned about spatial data analysis, including proximity, density, and accessibility analysis using the Map Viewer.

Furthermore, they delved into data visualization techniques, utilizing Story Maps and Dashboards to present geospatial data effectively. The final session introduced participants to the creation of instant apps using ArcGIS Instant Apps, with guest remarks from ESRI representatives enriching the discussions.

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Throughout the training, practical exercises and assignments, such as mapping healthcare centers and conducting proximity analysis, allowed participants to apply their newfound knowledge. The sessions also facilitated interactive discussions and Q&A sessions, fostering a collaborative learning environment. The training culminated in participants gaining proficiency in ArcGIS data collection apps and their application on the Africa Geoportal. The event concluded with closing remarks, expressing gratitude to participants, facilitators, and organizers for their contributions to the success of the training program.

## 3. METHODOLOGY

### 3.1 Organization and Execution of the Webinars

Distinct methodologies were employed in organizing and executing the two webinars. The project aimed to investigate the impact of artificial intelligence (AI) on surveying within West Africa and globally. Given the increasing use of AI and machine learning, it was crucial for young surveyors to grasp how these technologies are reshaping surveying practices and how they can integrate them to enhance their work.

The initiative commenced with a comprehensive literature review, delving into the current AI landscape in surveying and its potential applications within West Africa. Following this, interviews with industry experts provided practical insights into the integration of AI within surveying practices. Additionally, a survey targeting young surveyors in West Africa was conducted to ascertain their perceptions, understanding, and current utilization of AI in surveying. The culmination of the literature review, expert insights, and survey responses provided a nuanced understanding of prevalent trends and challenges surrounding AI integration in West African surveying practices. Furthermore, the project offered recommendations to young surveyors on effectively integrating AI into their workflows and staying abreast of evolving developments in this sphere.

In essence, the project aimed to equip young surveyors in West Africa with a profound comprehension of AI's impact on their profession and elucidate pathways for leveraging these technologies to enhance their efficacy and competitiveness in the job market. while the African Geoportal Webinar, each session within the African Geoportal training curriculum incorporated a blend of presentations, demonstrations, and hands-on exercises to facilitate active learning. Participants were encouraged to engage in discussions, pose inquiries, and share their experiences regarding data collection applications on the Geoportal.

Moreover, practical exercises tailored to the Africa Geoportal enabled participants to apply acquired concepts and tools within real-world scenarios. Supplementary resources, including online tutorials and pertinent case studies specific to the Geoportal, were disseminated to facilitate self-directed learning and reference.

Throughout the curriculum, participants actively participated in hands-on activities such as field surveys, dataset analyses, and project deliverable development using the Africa

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Geoportal. Regular check-ins, discussions, and feedback sessions were integrated to provide guidance and support as participants progressed through their projects. A Google Classroom platform served as the primary medium of communication between the organizing committee and participants, ensuring seamless engagement and collaboration throughout the training program.

**3.2 Integration of the African Geospatial and AI in Surveying: Project Approach**

Incorporating a project-based approach, our aim is to provide participants with practical experience in utilizing the Africa Geoportal while addressing real-world challenges. This curriculum emphasizes active learning, collaboration, and problem-solving skills, empowering young surveyors to effectively leverage geospatial technologies. YSN FCT will undertake projects utilizing the Africa Geoportal to map public schools in the designated regions. Through hands-on experience, participants will learn to navigate the Geoportal, collect relevant data, and analyze spatial information to enhance educational planning and resource allocation. For the webinar focusing on the impact of AI in surveying, we invited experts to shed light on the current state of AI in the field and its potential applications. Following expert presentations, panel discussions moderated by skilled facilitators engaged participants and addressed queries, enriching the learning experience. Key features such as case studies and interactive sessions, including polls, encourage participant engagement, fostering discussions and sharing of experiences within the surveying community. Through these initiatives, participants gain valuable insights into the intersection of geospatial technologies and AI, equipping them with the knowledge and skills needed to navigate evolving trends in surveying practices effectively.

## 4. WEBINAR FINDINGS

**4.1 Key Insights from the Webinars**
- **Increased Awareness:** The webinars raised awareness among surveyors, especially young surveyors, about the potential applications of AI in surveying. Participants gained insights into how AI can enhance efficiency and accuracy in their work, leading to improved practices.

- **Enhanced Knowledge and Insights:** Participants acquired a deeper understanding of the latest AI technologies and their applications in surveying. They gained insights into the current state of AI in surveying, including its benefits and potential limitations. This knowledge empowered participants to make informed decisions in their professional endeavors.

- **Networking Opportunities:** The webinars facilitated networking opportunities, allowing participants to connect with other surveyors in West Africa and industry experts from outside the region. These connections could lead to new collaborations, job opportunities, and knowledge sharing, enriching the surveying community.

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**- Skill Enhancement:** Participants enhanced their skills by learning new tools and techniques used in the field of surveying. Specifically, they gained a solid understanding of ArcGIS data collection apps, including Collector for ArcGIS, Survey123 for ArcGIS, and Quick Capture. They are now equipped with the necessary skills to effectively collect and manage spatial data using these apps on the Africa Geoportal in various field scenarios.

**- Recommendations:** The webinars provided recommendations to participants on integrating AI into their work processes, staying updated with the latest developments in the field, and improving their competitiveness in the job market. These recommendations serve as practical guidance for participants to navigate the evolving landscape of surveying technologies and practices.


## 5. THE IMPACT ON YOUNG SURVEYORS

### 5.1 Influence of Webinar Insights on Young Surveyors

The insights gleaned from the webinars profoundly influence young surveyors, expanding their perspectives and enhancing their knowledge base. Through discussions on the potential applications of AI in surveying, these webinars illuminate the transformative role of emerging technologies in traditional surveying practices. Young surveyors gain a nuanced understanding of how AI can optimize efficiency and accuracy in their work, paving the way for innovative solutions and improved outcomes. Moreover, by connecting with peers in West Africa and industry experts globally, young surveyors seize valuable networking opportunities. These connections foster collaboration, mentorship, and knowledge exchange, nurturing personal and professional growth within the surveying community.

Furthermore, the webinars serve as catalysts for skill development among young surveyors, providing practical demonstrations and hands-on exercises with advanced tools like ArcGIS data collection apps. Armed with newfound proficiency, young surveyors can navigate complex field scenarios with confidence, leveraging technology to enhance data collection and management processes. Additionally, the strategic insights and recommendations shared during the webinars empower young surveyors to integrate AI into their workflows effectively. By staying informed about industry trends and best practices, they position themselves as

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adaptive and forward-thinking professionals, ready to embrace the challenges and opportunities of a rapidly evolving surveying landscape.

## 5.2 Anecdotal Evidence and Case Studies

During the webinar on the impact of AI, experts in the field, such as Lingli Zhu from Finland, discussed the utilization of AI, particularly deep learning technology, for updating national topographic maps. They highlighted the significant enhancements in spatial data accuracies achieved in Finland through the application of artificial intelligence. Specific examples of AI applications in surveying were explored, including the utilization of machine learning for data analysis and computer vision for image recognition. The webinar also featured a series of case studies and best practices showcasing real-world applications of AI in surveying. For instance, the ATMU project implemented deep learning technology for object detection and change recognition. Additionally, Christopher Byren presented insights on leveraging historical data to shape future data strategies, exemplified by AI's role in solving georeferencing challenges related to title deeds in Liberia.

## 6. CHALLENGES AND FUTURE DIRECTIONS
### 6.1 Challenges Faced
During the process of organizing the webinars, we encountered a multitude of challenges and obstacles that required careful navigation and proactive solutions.
These challenges can be categorized into two distinct phases: pre-event and during the events.

### 6.1.1 Challenges faced during the pre-event

In the pre-event phase, we faced several key challenges that demanded our attention and strategic planning.

### 6.1.1.1 selecting the webinar topic

Our main goal in YSAN -WA is to help young surveyors in west Africa discover all opportunities available to them and equipe them with tools needed for them to stay current and competitive with the rest of the world. To accomplish this, we must select compelling topics that resonate to their needs. Numerous topics were proposed by teammates. Some of them include; the role of surveying in environmental conservation, the future of land surveying education in west Africa, the importance of spatial data infrastructure, land survey ethics and professional conducts, new technologies in land surveying, boundary disputes legal and technical considerations, and impact of Artificial Intelligence in surveying.

Given the variety of topics presented and their pertinence, it was hard for us to finally decide on what topic we will begin with. After several meetings and careful deliberation, we unanimously selected the topic: Impact of AI in surveying. This topic was selected as our first webinar theme because of the rapid growth of AI. Many young surveyors expressed concerns about their future relevance in the face of advancing AI technology. There was also very limited understanding regarding the actual impact of AI on surveying and its potential implications for the field. Selecting the second webinar theme was not as complex as the first one due to

feedback we received from the first. We saw the need to move on to a more practical training: Project Approach Using African Geoportal in Collaboration with Young Surveyors Network FCT

### 6.1.1.2 Facilitator Selection

Once the roles and scope of the training were clearly defined, our next step was to identify proficient facilitators who could effectively address the needs of the webinar. We began by exploring our local network of professionals. We asked them if they have any practical familiarity with the webinar's topic or know someone locally who does.However, it became apparent to us that most individuals within our local network did not extensively use AI in their daily workflows, making them unsuitable candidates for our requirements. We were able to identify 2 experts in the field. One from Nigeria and the other from Cameroon. This number was insufficient to run the webinar. We needed to search for more professionals.

To broaden our search, we delved into articles on surveying and related topics published in reputable professional journals like GIM International. This allowed us to identify potential facilitators who possessed the necessary knowledge and experience we needed. Following this, we personally reached out to them, expressing our interest in their participation, highlighting the relevance of their expertise to our webinar. We were pleased to find that most of them were receptive to our invitation and willingly accepted the opportunity to contribute. The remaining minority could not make it because they were already booked for other events. Regarding the second webinar: Project Approach Utilizing African Geoportal, our search for facilitators proved comparatively easier. This was primarily due to the presence of highly qualified users of the African Geoportal within the Young Surveyors Network (YSN) FCT. Leveraging the expertise available within this network facilitated organization at this level.By employing a diligent and thorough approach to facilitator selection, we ensured that participants would benefit fully from the insights and expertise of knowledgeable professionals who could address the specific objectives of the webinar.

### 6.1.1.3 Promoting to a broad audience

Here, the challenge we encountered revolved around effectively advertising our webinar to our desired target audience. Our team lacked extensive knowledge and expertise in advertising and marketing, and we also faced resource constraints that prevented us from hiring a professional to orchestrate a comprehensive design and social media campaign.To overcome this obstacle, we embraced a collaborative approach within our team. Where we took it upon ourselves to design beautiful flyers that effectively conveyed the essence and value of the webinar using free software like Canva. Leveraging our collective skills and creativity, we crafted visually appealing materials that captured the attention of potential participants.

We then tapped into various platforms such as WhatsApp groups and status, and LinkedIn, leveraging our personal connections and professional profiles to share information about the webinar. Although we faced the challenge of limited expertise and resources in advertising, our proactive approach allowed us to creatively and efficiently promote the webinar within our available means. By taking responsibility for designing the flyers ourselves and leveraging our

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existing surveying networks, we maximized our reach and successfully generated interest among potential participants.

**6.1.1.4 Selecting the Optimal Medium to Achieve Our Objectives**

A critical challenge we encountered was determining the most suitable medium to effectively fulfil our objectives, primarily centred around empowering young surveyors through knowledge and experience sharing. While our ideal scenario would have entailed organizing in-person training sessions, we recognized the considerable costs associated with such an approach. To overcome this obstacle, we carefully evaluated alternative options and deliberated upon the most viable solution. After thorough consideration, we determined that leveraging an online platform would provide us with the necessary flexibility and cost-effectiveness while still allowing us to deliver impactful content to our target audience. Within the realm of online platforms, numerous possibilities existed, each with its own advantages and limitations. To ensure an interactive and engaging experience, we conducted a comprehensive assessment of various options available to us. After careful deliberation, we ultimately selected the Zoom meeting platform as our preferred medium. The decision to choose Zoom was based on several key factors, including its wide accessibility, user-friendly interface, robust features for facilitating interactive discussions, and its reputation as a reliable and scalable platform for hosting virtual events. By opting for Zoom, we aimed to provide our participants with a seamless and engaging experience that would effectively support our objectives of knowledge and experience sharing among young surveyors. By diligently considering the available alternatives and selecting the Zoom platform as our preferred medium, we successfully addressed the challenge of selecting the optimal avenue to achieve our objectives. This decision allowed us to overcome the cost constraints associated with in-person meetings while still providing an interactive and accessible platform for empowering young surveyors through the sharing of knowledge and experiences.

**6.1.1.5 Addressing Language Barriers**

Another significant obstacle we encountered was the issue of language diversity among our facilitators and audience. The two main languages were French and English. While a facilitator and some audience members were fluent in French, the majority came from English-speaking countries. It was imperative for us to find a suitable solution to ensure that everyone who participates in the webinar benefits fully from all the parts presented. This entailed translating to French for participants from Senegal and Cameroon while the facilitator present in english.

Due to limited resources, we could not hire a professional interpreter so we considered the option of selecting a bilingual member of our team to handle interpretation tasks. However, recognizing the complexity and demanding nature of such a responsibility, we sought an alternative method. After extensive research, we discovered that Zoom had built-in interpretation capabilities.To overcome the language barrier, we dedicated time and effort to familiarize ourselves with the functionality of the interpretation feature. We invested in thorough testing during multiple trial meetings to ensure its seamless integration and reliable

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performance during the actual event. This allowed us to gain confidence in the tool's ability to facilitate real-time interpretation.

By proactively addressing the language barrier, we were able to provide a more inclusive and accessible experience for our diverse audience. Utilizing the interpreter feature of our chosen tool enabled us to bridge the gap between French and English speakers, promoting effective communication and ensuring that all participants could fully engage in the webinar regardless of their language background.

### 6.1.2 Challenges faced during the event

### 6.1.2.1 Participant Engagement and Interaction

We aimed to foster active engagement and interaction among participants throughout the training sessions. To achieve this, we implemented various strategies, including the use of polls and dedicated question-and-answer (Q&A) sessions. The polls allowed us to gauge participant opinions and perspectives on specific topics and encouraged their active involvement. The Q&A sessions provided participants with the opportunity to ask questions, share their thoughts, and engage in meaningful discussions with the facilitators. By incorporating these interactive elements, we created a conducive environment for participants to actively contribute and enhance their learning experience.

While time management, technical glitches, and participant engagement presented challenges, we proactively addressed them by encouraging concise presentations, implementing contingency measures for technical issues, and facilitating interactive sessions. Through these efforts, we aimed to optimize the webinar experience, maximize engagement, and ensure the delivery of valuable content to our participants.

### 6.1.2.2 Technical Glitches

In addition to participant engagement and interaction challenges, we also encountered obstacles related to technical glitches, particularly the instability of internet connections, which is often a prevalent issue in certain regions of Africa. As our webinar totally relied on uninterrupted internet connectivity, we faced occasional disruptions and delays during the sessions. These technical glitches had an impact on the smooth flow of the webinar. On one occasion, a facilitator experienced a sudden loss of connectivity while presenting. However, we were prepared for such contingencies and promptly replaced the affected facilitator with their co-presenter, ensuring minimal disruption to the session. This swift action allowed us to maintain the continuity of the presentation and deliver a seamless experience to the participants.

In another instance, the meeting unexpectedly ended abruptly, causing an inconvenience for all participants. However, we swiftly resolved the issue, reopening the meeting within a few seconds and allowing participants to rejoin seamlessly. Although this interruption caused a brief disruption, we promptly addressed the situation and ensured that participants could resume their engagement with minimal delay. To mitigate the impact of these technical challenges, we took proactive measures to address potential connectivity issues. Prior to the

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webinar, we conducted thorough tests to identify and rectify any technical shortcomings. We also provided troubleshooting guidance to participants, enabling them to troubleshoot common connectivity issues on their end.

Furthermore, we maintained clear and transparent communication with participants, informing them about the possibility of occasional disruptions and assuring them that we were prepared to handle such situations swiftly and effectively. By anticipating and addressing these technical challenges, we aimed to minimize their impact on the overall webinar experience. Our proactive approach, prompt action, and effective communication allowed us to navigate through these interruptions and ensure a successful and engaging webinar event for all participants.

### 6.1.2.3 Time management

An important challenge we encountered during the webinar event was effectively managing time. Our facilitators exhibited exceptional mastery of their respective topics and delivered their presentations with great enthusiasm. However, they expressed valid concerns that the allocated time for each presentation was insufficient to fully develop their ideas and delve into all the intricacies of their topics. Despite recognizing the value of their expertise and enthusiasm, we were constrained by the overall schedule and did not have the option to extend the duration of the sessions.

To address this challenge, we encouraged our facilitators to prioritize key concepts and focus on delivering the most impactful information within the given time constraints. We emphasized the importance of concise and structured presentations that covered essential aspects without compromising the quality of content. Additionally, we provided guidance and support to the facilitators in refining their presentations, helping them identify the most critical points to convey to the audience. While it was a challenge to strike a balance between time limitations and the facilitators' desire to share their wealth of knowledge, our collaborative efforts ensured that the sessions remained informative and engaging within the available timeframe.

By proactively managing time and optimizing the presentations, we aimed to deliver valuable content to our participants, ensuring that they received a comprehensive understanding of the topics covered, even within the limitations posed by the allocated time.

### 6.2 Future Directions for AI and Geospatial Technologies

The webinars and training sessions organized to educate young land surveyors in west Africa on the evolution of AI and its impact on land surveying, as well as on utilizing the African Geoportal for project implementation, hold significant promise for the future of the profession. By imparting knowledge about the advancements and potential of AI in the field of land surveying, these activities have empowered young surveyors with valuable insights and skills. They have gained an understanding of how AI can enhance efficiency, accuracy, and productivity in their work, while also recognizing the areas where human expertise remains indispensable. The training sessions on the African Geoportal have equipped young land

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surveyors with practical tools and techniques for carrying out projects effectively. By leveraging the features and capabilities of the African Geoportal, they have gained valuable hands-on experience in utilizing geospatial data, analysis, and visualization tools to support their surveying projects. This exposure to advanced technologies and platforms has expanded their skill set and positioned them to embrace the digital transformation occurring in the field of land surveying.

Looking ahead, these activities have laid a strong foundation for the future of land surveying. Young surveyors who have participated in these webinars and training sessions are well-prepared to navigate the evolving landscape of the profession. They possess the knowledge and skills to leverage AI technologies intelligently and harness the power of geospatial platforms like the African Geoportal to enhance their work.With this newfound expertise, young surveyors are poised to contribute to the ongoing development and innovation in land surveying. They can apply their understanding of AI's potential to drive improvements in data collection, analysis, and decision-making processes. Furthermore, their proficiency in utilizing the African Geoportal as a collaborative and data-driven platform will enable them to execute projects more efficiently and deliver high-quality results.

Overall, the future of these activities is bright, as they have equipped young land surveyors with the necessary tools and knowledge to embrace the transformative potential of AI and geospatial technologies. By continuing to invest in such training initiatives and fostering a culture of continuous learning, the land surveying profession can stay at the forefront of technological advancements and successfully navigate the evolving demands of the industry.

## 7. CONCLUSION

The conclusion drawn from the webinars and training sessions organized by the Young Surveyors African Network-West Africa (YSAN-WA) is profound. Participants, facilitators, and organizers alike have gained invaluable insights into the integration of Artificial Intelligence (AI) and the utilization of the African Geoportal for surveying projects in West Africa.

Through these events, participants have acquired essential knowledge and skills relevant to the evolving landscape of land surveying. They have been equipped with practical tools for leveraging AI technologies to enhance efficiency, accuracy, and productivity in their work. Moreover, the training sessions on the African Geoportal have provided hands-on experience in utilizing geospatial data, analysis, and visualization tools, empowering young surveyors to carry out projects effectively.

The key takeaways include a recognition of the transformative potential of AI in surveying methodologies and the significance of geospatial technologies in supporting sustainable development initiatives. Participants have embraced the digital transformation occurring in the field and are poised to contribute to innovation and improvement in land surveying practices across the region.

## 7.1 Importance of AI and the African Geospatial Project

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The significance of AI and the African Geospatial Project cannot be overstated in the context of sustainable development in West Africa. These initiatives represent a pivotal step towards harnessing the power of technology to address complex challenges and promote resilience in surveying and resource management.

AI offers unprecedented opportunities for precision, efficiency, and adaptability in surveying methodologies. By integrating AI into surveying practices, young surveyors can enhance their capabilities and deliver high-quality results that meet the demands of a rapidly evolving environment. Furthermore, the African Geospatial Project provides a platform for young surveyors to access geospatial data, tools, and resources essential for project implementation. The Geoportal serves as a hub for collaboration, innovation, and knowledge exchange, fostering a community-driven approach to sustainable development.

In conclusion, the importance of AI and the African Geospatial Project lies in their potential to drive positive change and empower young surveyors to lead the way towards a more resilient and sustainable future in West Africa. Through continued investment and collaboration, these initiatives will play a vital role in shaping the trajectory of land surveying practices and environmental stewardship in the region.

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