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**Economic Commission for Africa  
Regional Committee of United Nations Global Geospatial  
Information Management for Africa**

Seventh meeting  
Abidjan, Côte d'Ivoire (online), 22–26 November 2021

## **Report on geospatial information management activities in Africa**

### **I. Introduction**

1. The Regional Committee of United Nations Global Geospatial Information Management for Africa was created following the establishment of the United Nations Initiative on Global Geospatial Information Management, which was designed to create a formal geospatial information coordination mechanism involving member States as the key stakeholders.

2. Such initiatives have recognized the significance of geospatial information in virtually every aspect of human life (e.g. government, commerce, academia and societal development). Geospatial information is a means to track, monitor and analyse any occurrence that has a location or temporal element. More importantly, it is designed to look forward by creating models and analysing the potential consequences of policy and events.

3. The Regional Committee provides a regional focus, for coordinating African geospatial development and contributing to the wider global initiative. The Regional Committee works with Governments and the private sector to improve policy, institutional arrangements and legal frameworks; address global issues; and contribute to collective knowledge on geospatial information management.

4. The implementation of the work programme of the Regional Committee has to a great extent focused on promoting and facilitating the realization of the major aspects of the issues recommended during its sixth meeting:

(a) Issues in advancing policy, institutional arrangements and legal frameworks;

(b) Technical issues in developing information and knowledge resources, applications and services that improve the availability and use of spatially-enabled information for development at the national, regional and subregional levels;

(c) Capacity-building issues in contributing to collective knowledge as a community with shared interests and concerns;

(d) International cooperation and partnership in collaborating and coordinating its activities with United Nations system entities, international and regional networks and programmes, and other development partners, as an



important vehicle for mobilizing financial resources and technical know-how in support of African geospatial information development.

5. The work of the Regional Committee is built around the following key pillars:

(a) African regional spatial data infrastructure, which serves as a framework for policies and structures to facilitate the availability of and access to spatial data through data-sharing among data producers and users;

(b) The African Geodetic Reference Frame project, to develop a regional geodetic reference frame, aligned with the Global Geodetic Reference Frame to enable direct and seamless applications of all geospatial information on the continent;

(c) The Second Administrative Level Boundaries project, to build authoritative and accurate second administrative-level boundary databases with validated data sets from member States that will be used in a plethora of applications, including census data analysis and disaster management;

(d) The GeoNyms project, to create an African gazetteer populated with member State data and input through the United Nations Group of Experts on Geographical Names;

(e) Fundamental geospatial data sets, to develop a well-structured and comprehensive data foundation that will be consistent, comparable and compatible at the local, national, regional and global levels;

(f) The integration of geospatial information and statistics, to mainstream the application of geospatial information in the various sectors and subnational constituents of statistics;

(g) The 2030 Agenda for Sustainable Development, to develop common tools and data for applications of geospatial technologies that are used to monitor and track progress towards the Sustainable Development Goals.

6. The present report covers activities carried out by the Regional Committee since its sixth meeting, which was held online in December 2020. The report describes actions taken as a follow-up to adopted resolutions and other activities considered to be of interest to member States and partners.

## II. Objectives

7. The main objective of the Regional Committee is to coordinate African geospatial development through consolidating previous efforts, building upon the achievements of existing initiatives, and striving to establish synergies and linkages with other networks and initiatives at the regional and global levels. This will be mainly achieved through:

(a) Promoting and supporting technical activities in the development of standards, interoperability and streamlined electronic services delivery in such a way that they anticipate the future potential use of geospatial information resources on the continent;

(b) Strengthening and aligning the specific needs and interests of Africa with international mechanisms;

(c) Encouraging and facilitating the integration of statistics with geospatial information efforts to attain viable and meaningful outcomes, analysis and visualization of data in supporting and tracking progress towards the Sustainable Development Goals.

### III. Activities, areas of work and achievements

#### A. Organization of the sixth meeting

8. The sixth meeting of the Regional Committee was held online, in a scaled-down format, from 1 to 4 December 2020. The meeting was attended by over 90 participants from 43 countries across the globe; 32 participants were from African countries represented by heads of national geospatial authorities and agencies. A large number of partners and private-sector representatives were also in attendance.

9. The meeting served as a platform for reviewing and sharing knowledge and best practices in the development of geospatial information on the continent; promoting networking among institutions and practitioners in the field of geospatial information; and generating synergy at the national level to facilitate its management, as well as ensuring linkages with partners and other regional subcommittees within the context of the coronavirus disease (COVID-19) pandemic. The meeting offered the opportunity to review progress achieved on the recommendations and actions of previous meetings of the Regional Committee.

10. The issues examined at the meeting included but were not limited to:

(a) Reporting on the activities undertaken by ECA, member States and the working groups;

(b) Reviewing issues relating to geospatial information policy at the national and regional levels (e.g. geospatial strategies relating to COVID-19) that required a decision, resolution or recommendation for member States, ECA and partners, or other stakeholders;

(c) Examining technical issues flagged by member States and stakeholders, or raised by the secretariat of the Regional Committee (i.e. ECA);

(d) Exploring new trends and developments in the field of geospatial information (e.g. Digital Earth Africa);

(e) Focusing on a special topic such as the geospatial response to the COVID-19 pandemic.

11. In addition, meeting participants reviewed the implementation of activities by the Regional Committee in the following critical areas:

(a) Defining the modalities of engagement for the working groups to take concrete actions that can be converted into fundable projects, with priority actions, milestones and related costs, in line with the African Action Plan under the United Nations Initiative on Global Geospatial Information Management;

(b) Outlining the strategy for resources mobilization, to ensure the funding of key activities such as the African Geodetic Reference Frame, GeoNyms, the development of spatial data infrastructure and mapping Africa for Africa;

(c) Assessing the status of the development of national data infrastructure in Africa, including related issues and challenges;

(d) Stressing the role and place of geospatial information in the implementation and monitoring of the Sustainable Development Goals;

(e) Addressing relevant issues that came out of the participation by African representatives in various expert and working groups at the 11th session of the United Nations Committee of Experts on Global Geospatial Information Management, such as updates, issues and opportunities.

12. The meeting contributed to raising countries' awareness of opportunities and facilities offered by pan-African institutions and partners to respond to the impact

of the pandemic, which will be critical for supporting geospatial activities, both currently and post-pandemic.

## **B. Geospatial information policies**

### **National spatial data infrastructure policy development and implementation**

13. The Regional Committee has carried out an assessment of national spatial data infrastructure development in African countries, and gathered primary data that accurately reflect the current state of the six components of national spatial data infrastructure (strategic plan, policy and legal frameworks, data, standards, access network, and people), along with their respective indicators. The assessment methodology adopted was based on the capability maturity model, which was originally developed by the Software Engineering Institute at Carnegie Mellon University in the United States for evaluating and improving software development processes. Twenty African countries responded to the questionnaire and were included in the assessment. The assessment categorized the countries, based on the capability maturity model rankings of “Champions”, “Aspirers” or “Beginners”. The assessment classified 4 countries as Champions (South Africa, Namibia, Malawi and Senegal), 5 countries as Aspirers (Burundi, Ghana, Ethiopia, Burkina Faso and Togo), and 11 countries as Beginners (Cameroon, Comoros, Côte d’Ivoire, Eswatini, Lesotho, Liberia, Madagascar, Mozambique, Niger, South Sudan and Uganda). The assessment also identified the four main challenges to the successful implementation of national spatial data infrastructure in Africa: an inappropriate implementation approach, which uses a bottom-up and voluntary model; poorly developed access network infrastructure such as electricity and information and communications technology; limited human resources capacity and capability; and lack of funding.

14. In view of the above, the following action items and approaches are recommended to support successful national spatial data infrastructure implementation in African countries: (a) securing buy-in from top-level policymakers and decision makers; (b) adopting a mandatory model of implementation; (c) adopting a product-based implementation approach; and (d) adopting a step-wise implementation methodology that involves analysing the environment, formulating a strategy, then implementing that strategy. Such a methodology should include a mechanism for integrating national spatial data infrastructure with other national strategies, such as those for the application of the Integrated Geospatial Information Framework, and strategies for the development of statistics, through situation analysis, strategic plan development, strategy formulation, strategy implementation and continuous improvement.

## **C. Integrated Geospatial Information Framework**

15. The Integrated Geospatial Information Framework focuses on geospatial information that is integrated with other meaningful data to solve societal and environmental problems. It is a stand-alone framework that is independent of all other spatial data infrastructure. However, it fundamentally recognizes, builds upon and augments previous investments and substantial achievements in planning and implementing spatial data infrastructure, including national spatial data infrastructure. The Framework not only provides additional structure, explanation and evidence as to why national spatial data infrastructure is important, but also provides the guidance, options and actions to plan for, develop and implement an integrated national geospatial information management programme that is aligned with the national strategic priorities and circumstances in a given country.

16. In its decision 10/103, the Committee of Experts on the United Nations Initiative on Global Geospatial Information Management acknowledged the Implementation Guide of the Integrated Geospatial Information Framework as a means of strengthening national geospatial information management arrangements.<sup>1</sup> In addition, the Regional Committee has recognized that providing adequate resources and support for ground-level action is imperative for African countries to develop national action plans that can be effectively operationalized, with a view to having a significant impact. Assisting member States in developing country-specific action plans will help them to develop spatially-enabled e-services, embark on the path towards digital transformation, and bridge the geospatial digital divide on the continent.

17. Currently, technical and financial assistance is underway to support Burkina Faso and Ethiopia to organize national stakeholder engagement in connection with the Integrated Geospatial Information Framework.

#### **D. Integration of geospatial and statistical information**

18. The need and demand for disaggregated data are great, and geocoding is needed in the context of the COVID-19 pandemic. At its sixth meeting, held online in December 2020, the Regional Committee acknowledged the progress that had been made in developing the guidelines for the implementation of an African geospatial and statistical framework. The framework will be articulated around the dimensions of scale, policy, institutions and modelling. Both national statistical offices and national mapping agencies can adapt, adopt and apply the statistical framework to their national contexts, such as in geoenabling the national strategies for statistical development; ensuring effective collaboration between the statistical and geospatial communities; building basic data themes; using common specifications and standards; and making geospatial analysis a core competency in every census office.

19. In addition, it was noted that the Regional Committee must provide policy-level support for the African statistical geospatial framework. It should prioritize and propose ground-level actions to advance the implementation of national and regional activities relating to the integration of statistical and geospatial information in Africa.

#### **E. Knowledge generation**

20. The Regional Committee has developed a financial appropriation framework with an assessment of the economic benefit of geospatial information management in Africa. The economic benefits are represented as tangible and relatable factors for investors and government budget authorities to increase their buy-in and interest in geospatial information.

21. The framework provides member States with an approach that guides their efforts in the budgeting, funding and resource distribution of geospatial information projects and programmes at each stage. The establishment of the economic viability of new technologies and the substantial implementation of geospatial information technology are important to ensuring proper planning and management of information for sustainable development. The assessment has used qualitative and quantitative research methods to do the following:

- (a) To conduct a comprehensive literature review (identifying the research questions);

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<sup>1</sup> See E/2021/46–E/C.20/2020/35.

- (b) To perform a cost-effectiveness analysis (of the return on investment);
- (c) To establish survey gaps and identify problems through a case-by-case analysis within selected African countries;
- (d) To examine and assess the economic implications for African economies if geospatial technologies were not deployed as part of the various development activities on the continent;
- (e) To develop a workable financial appropriation framework and a resource mobilization strategy.

## **F. Capacity development**

22. Under the United Nations trust fund for peace and development programme, the Regional Committee, with support from ECA, has carried out several regional capacity-building activities, including:

- (a) Organization of workshops for Central and Southern African countries: The workshops aimed at raising awareness as well as contributing to enhancing the capacity of the member States in the production of geospatial information;
- (b) Engagement of young women to undertake a research fellowship to study the current state of national data ecosystems, to assess the existing strategies and achievements of African countries in integrating statistical and geospatial information, and to learn from experiences and best practices in each of the five subregions;
- (c) Organization of an online e-learning course on evaluating the socioeconomic benefits of investing in geospatial information: This e-learning course was designed to help build a business case that justifies investment in geospatial information and systems. It has enabled national mapping authorities to effectively leverage the power of geography. Delivered as both e-learning training and a supporting webinar, it helped participants to prepare a business case for investment in geospatial projects.

## **G. Contribution to activities of the United Nations Initiative on Global Geospatial Information Management**

23. The Africa region participated in the following events and activities of the United Nations Initiative on Global Geospatial Information Management:

- (a) Participation and contribution to the eleventh session of the Committee of Experts and its side events, held online on 23, 24 and 27 August 2021. During the session, Morocco was elected on behalf of the Africa region as the rapporteur for the global Initiative;
- (b) Participation in and contribution to the meeting of the expanded Bureau of the global Initiative ;
- (c) Participation in and contribution to the work and meetings of the Expert Group on the Integration of Statistical and Geospatial Information;
- (d) Participation in and contribution to the work of the Inter-Agency and Expert Group on Disaster-related Statistics, in particular with regard to preparations for an expert forum for producers and users of disaster-related statistics, held on 7, 8 and 10 June 2021.

## **H. Geospatial response to the coronavirus disease**

24. Although geospatial technology and georeferenced data can play an essential role in the African effort to combat COVID-19, the Regional Committee has noted numerous challenges and tensions related to the use of geospatial information in response to the pandemic. It carried out a study to conceptualize and develop a continental strategy for using geospatial information to mitigate the effects of the COVID-19 pandemic. The strategy includes a road map to harness the power of geospatial information to track and monitor the transmission of the disease and quell its impact on the continent. The African geospatial response consists of four building blocks: (a) mapping African geospatial expertise to provide a fact-based decision tool to health-care authorities, Governments and frontline workers; (b) using geographic information systems to strengthen African health-care systems through the development of geospatial data infrastructure, including data warehouses; (c) building geospatial infrastructure to support the implementation of the geospatial response; and (d) putting in place mechanisms to govern the response strategies.

25. The Regional Committee calls upon member States and interested partners and entities to assist the region in determining which ground-level actions can be taken by national mapping agencies, the private sector and civil society organizations to leverage geospatial information technology to respond to the COVID-19 crisis, in accordance with national circumstances.

## **I. Partnerships, and regional and international collaboration**

26. A number of solid initiatives pertaining to geospatial information have been initiated in Africa. The Regional Committee cooperates with them to become more effective in working towards common goals. Doing so greatly enhances the development of geospatial information on the continent.

27. The Regional Committee provided advisory services to the Global Monitoring of Environment and Security programme of the African Union Commission, the African Space Agency, and the African chapter of the Group on Earth Observations, among others.

## **IV. Priority issues and challenges**

28. Participants in the sixth meeting of the Regional Committee acknowledged that solutions needed to be identified for the following issues:

(a) Numerous data sets sat hidden and unused on shelves across the continent. Member States should publish such data through, for example, the Africa Geoportal application of the Environmental Systems Research Institute, thereby augmenting the accessibility of their national data sets and information products;

(b) Fundamental geospatial data set production, updating, revision and maintenance were stalled in many African countries. Greater effort must be made to validate and submit national data on administrative units in the context of the Second Administrative Level Boundaries programme, in line with the priorities of the African plan of action on global geospatial information management for the period 2016–2030;

(c) There is a lack of the financial resources that are key to implementing the activities of the Regional Committee. Funding is required not only for organizing substantive meetings, but also to work at the grass-roots level to ensure that infrastructure is maintained, education is enhanced, and other areas are developed. As demonstrated, the presence and utilization of geospatial information

at the community level have become extremely pervasive and growing. It is the responsibility of the geospatial community, therefore, to raise and maintain awareness of where these data come from and why they must be constantly updated to be effective and efficient. The benefits arising from geospatial information must be communicated to feed into the sustainability and funding aspects of the United Nations Initiative on Global Geospatial Information Management. Each country must develop a workable financing framework and a resource mobilization strategy, while committing to dedicating more resources to the development of their national mapping authorities;

(d) Successful communication should be developed with decision makers. One of the long-standing problems for the geospatial community has been the need to enhance our ability to influence decision-makers, whether they be politicians, senior executives in commercial companies or leaders in our own organizations. Strategic pathway 9 of the Integrated Geospatial Information Framework is dedicated to engagement and communications guidance. There is a need for the Regional Committee to provide practical advice on presenting geospatial information to decision makers and making our propositions compelling.

## V. Perspectives, outlook and future plans

29. The activity plan for the coming year includes:

(a) Organizing the eighth meeting of the Regional Committee of United Nations Global Geospatial Information Management for Africa: The region plans to organize the eighth meeting of the Regional Committee in conjunction with the meeting of the Statistical Commission for Africa in 2022. We expect that the eighth meeting will be held in a fully in-person format. Tentatively, the eighth meeting is scheduled for the second week of October 2022 in Addis Ababa. At the meeting, participants will continue to review progress made in implementing the United Nations Initiative on Global Geospatial Information Management in Africa. The meeting will also provide an opportunity to share experiences and identify the ground-level geospatial infrastructure that will be required for post-COVID-19 recovery at the national level;

(b) Modernizing national mapping organizations: The Regional Committee notes that, given the emergence of new trends, national mapping agencies are at a crossroads when it comes to remaining relevant in the evidence business. Capacity development continues to be a critical issue in Africa, which continues to be left behind in this regard. The region will endeavour to develop a comprehensive programme for modernizing geospatial activities in Africa that will provide ideas, insights and strategic avenues for the cooperative management of development-related information. The programme will serve as a vehicle for mobilizing resources to strengthen member State capacity and to integrate geospatial and statistical information infrastructure;

(c) Adapting to change for sustainability and awareness: The issues of funding, sustainability and awareness are interdependent. Numerous geospatial initiatives have commenced within Africa over the years, with many of them failing to be sustainable and realize their full potential. There are many reasons for this, but ultimately it can be attributed to an inability to adapt to contemporary circumstances so as to secure necessary funding or support, which in part relies on making stakeholders aware of the potential benefits. If sufficient support is not secured, the Regional Committee is in danger of becoming yet another programme that promises a lot but ultimately fades away, thereby undermining the significant role that geospatial information could play in realizing the African development agenda. Critical for successful implementation is the review of the current action

plan for setting and achieving realistic goals, with clear explanations as to how they ultimately affect life in Africa.

## **VI. Conclusion**

30. The global COVID-19 crisis has had a direct effect on the implementation of the activities of the Regional Committee. The impact of the pandemic has compromised the operational capabilities of African national mapping agencies through: (a) the pressure brought on by additional demands for data; (b) the diversion of funds from mapping budgets and expenditures; and (c) the postponement or cancellation of activities related to the production and updating of fundamental and thematic data sets (e.g. surveys of the geodetic network of ground control points).

31. Notwithstanding, the Regional Committee has striven to develop effective geospatial capacity in Africa, and to promote the use of spatially-enabled information to meet key global challenges, in particular those relating to sustainable development. The strategic guidance that has emerged from the United Nations Initiative on Global Geospatial Information Management has been essential in ensuring that the Regional Committee continues to play a leading role in determining the way forward in the use of geospatial information in national and regional policy frameworks. The Regional Committee has also made a substantive effort to provide a forum for member State representatives to meet, discuss and collaborate on important issues relating to global geospatial information management on the continent.

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