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Economic Commission for Africa
United Nations Global Geospatial Information Management (UN-GGIM: Africa)
Sixth meeting
Addis Ababa (online), 1-4 December 2020

Item 9 of the provisional agenda *
Meeting Report

Report of the eight meeting of UN-GGIM: Africa

I. Introduction and background

1. The UN-GGIM: Africa initiative was established to coordinate African geospatial development and to contribute to the broader global effort. UN-GGIM: Africa has made significant strides in regaining momentum and demonstrating to the national and international communities that it is committed in contributing towards national and international agendas. UN-GGIM: Africa aims at pursuing a robust advocacy campaign directed at African policymakers for bolstering efforts in transforming geospatial information into a true enabler of sustainable development. The Executive Board scheduled the Eighth Meeting of the Regional Committee of UN-GGIM: Africa and the meeting took place concurrently with the Statistical Commission for Africa (StatCom-Africa-VIII), these meetings took place in Addis Ababa, Ethiopia, from the 24 to 28 October 2022.

II. Objectives

2. The meeting's primary objective was to assess progress made in implementing recommendations from past UN-GGIM: Africa meetings. The meeting also provided another opportunity to exchange knowledge and best practices regarding the development of geospatial information on the continent while raising awareness on the benefits of geospatial information for sustainable development. It equally, examined policies and measures that African countries could take in order to ensure the successful implementation of the UN-GGIM initiative in the region within the context of the Post-COVID-19 pandemic.

3. The conclusions of the meeting will help in consolidating agreed consensuses as well as galvanizing political will for harnessing geospatial

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information technology to further African development goals while assisting efforts to address certain growing global concerns..

III. Issues addressed in the meeting

4. The issues examined by the meeting included but were not limited to:

- Reporting on the activities undertaken by ECA, member States and the working groups.
- Policy issues relating to geospatial information management at national and regional levels, requiring a decision, resolution or recommendation for member States, ECA and partners and other stakeholders e.g. the integrated geospatial information framework (IGIF).
- Technical issues flagged by member States, stakeholders or tabled by the Secretariat (ECA).
- New trends featuring invited presentations on new developments in the field of geospatial information to increase awareness (e.g. Digital Earth Africa).
- Focus on a special topic such as the modernisation of national mapping agencies.

IV. Outcomes

5. The Eighth meeting outcomes will contribute in achieving the UN-GGIM vision globally and on the other hand, the meeting will encourage for substantive progress in the implementation of UN-GGIM: Africa's initiative in the continent. It's expected that the meeting will contribute to consolidate the already adopted consensus on UN-GGIM: Africa, review the structure of UN-GGIM: Africa and its functions as well as the operations of UN-GGIM: Africa while defining its funding mechanisms.

V. Venue and Date

6. The meeting was held from the 24-28 October 2022, in presence mode, at the United Nations Conference Centre (UNCC), in Addis Ababa, Ethiopia.

VI. Participants

7. UN-GGIM: Africa including the Executive Bureau; convenors of the Working Groups; and national authorities from mapping, cartography, surveying, and statistics. Experts drawn from academia, research institutes, government, civil society, and the commercial sector, as well as representatives from sub- and regional organizations participated in meeting.

8. Over 80 participants, including delegates from 38 African countries, as well as observers from international organizations including the Economic Commission for Africa (ECA), the African Union Commission (AUC), the UN-GGIM Secretariat, academia, industry organizations and the private sector.

9. Delegates from the following African Member States participated in the meeting: Algeria, Benin, Botswana (online), Burkina Faso, Burundi, Cameroon, Comoros, Congo, Côte d'Ivoire, Egypt, Eswatini, Ethiopia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, South Africa, Sudan,

Tanzania, Togo, Tunisia, Uganda Zambia and Zimbabwe.

10. Other countries out of Africa that participated in the UN-GGIM: Africa eighth meeting were: United Kingdom, United States.

11. Partners attending the meeting included: African Association of Remote Sensing of the Environment (AARSE). the African Regional Institute for Geospatial Information Science and Technology (AFRIGIST); Centre d'Étude de Recherche et de Production en Information pour l'Environnement et le Développement Durable (CERPINEDD, Burkina Faso); Center for International Earth Science Information Network (CIESIN); Digital Earth Africa; Esri; Geospatial Medai and Communications (India); GTOPIC Sarl (Morocco); HEAD Aerospace (China); Natural Resources (Canada); PASCO Corporation (Japan); PLACE (United States), World Geospatial Industry Council (Netherlands)

12. United Nation agencies attending the meeting included: United Nations Statistics Divisions (UNSD); United Nations Geospatial Information Section (UNGIS).

VII. Proceedings of the Meeting

A. Opening Session

13. Firstly, Mr. Oumar Ka, Chair of the UN-GGIM: Africa Executive Board, welcomed participants to the meeting as well as to the city of Addis Ababa, Ethiopia. He explained that the United Nations Global Geospatial Information Management (UN-GGIM) initiative was established as a formal geospatial information coordination mechanism involving Member States as key stakeholders. He expressed appreciation to the host of the meeting, the ECA. He conveyed UN-GGIM: Africa's gratitude to the ECA as well as to member states for their commitment in improving geospatial information in Africa. He further mentioned that, the regional and international partners, civil society organizations, and the commercial sector were contributing enormously in supporting geospatial information in the continent. The reformative changes occurring within the sphere of geospatial information can be noticed in the continent. The transformational vision and new data requirements required to realize the 2030 Agenda is pending or have not been fully realized. This difficulty has been grossly underestimated. It has been exacerbated by gaps and unequal distribution of the geographic data, leadership, knowledge, and innovation that all nations require. He mentioned national geospatial data policy is a step forward to address and create an enabling environment for centralization, coordination, management and dissemination of geospatial data. The mission of the United Nations initiative on Global Geospatial Information Management (UN-GGIM) is to play a leading role in establishing the agenda for the development of global geospatial information and promoting its use to address critical global concerns. It offers a forum for communication and coordination between Member States and international organisations. He thank everyone for their support during his two terms in office and expressed appreciation to UN-GGIM: Africa and ECA for supporting Geospatial information in the continent.

14. Mr. Greg Scott of the United Nations Global Geospatial Information Management Secretariat greeted the delegates and thanked the UN-GGIM: Africa for organizing the eighth regional committee meeting during such a crucial moment as the Post COVID-19 period with all the recovery methods been put into place. He emphasized that the eighth conference in Addis Ababa will be a great success and expressed optimism that this gathering will also

contribute to the geospatial agenda of the African continent. Due to ECA's leadership, there is a growing commitment to UN-GGIM: Africa. After Kigali, the number of participants expanded indicating the improve enthusiasms to promote geospatial information in the continent. Finally, he acknowledged ECA and the UN-GGIM: Africa secretariat commitment in fostering geospatial information in the continent. He appreciated Oumar's leadership during his tenure at the herm of UN-GGIM: Africa during the last years. He added that the United Nations connects people, issues, governments, stakeholders, regional hubs, data, statistics, and geospatial and technical activities across continents.

15. The Economic Commission for Africa (ECA) through Mr. Oliver Chinganya, the Director of the African Centre for Statistics (ACS), welcomed participant to eighth meeting of UN-GGIM: Africa. He indicated that this significant yearly event is now taking place in person after the lingering effects of the COVID-19 pandemic. The epidemic has exacerbated problems relating to the attainment of the Sustainable Development Goals in the continent's most vulnerable countries. Collecting, analyzing, storing, and using timely and trustworthy data, especially geospatial and other disaggregated location-based data, continue to pose the biggest obstacles for countries. He further indicated that, in several countries, crucial geospatial data is often not discoverable, organized, interoperable, or standardized. It is difficult to obtain, communicate, and, most importantly, integrate crucial data with other data for decision-making. However, we are seeing that hardship may also provide Member States with new possibilities to obtain and manage data, as well as enhance their geospatial skills. In fact, countries may accomplish a more complete and integrated data strategy by using the frameworks and procedures created by this Committee during the past year’s activities. The United Nations Integrated Geospatial Information Framework, or IGIF, Global Statistical Geospatial framework or GSGF, Africa Geodetic Reference Framework, or AFREF, Second Administrative Level Boundaries or SALB, National Spatial Data Infrastructure or NSDI etc. are such globally adopted frameworks. These frameworks are now being implemented in many Member States. They facilitate the coordination, development, strengthening, and promotion of the efficient and effective use and exchange of geospatial information for policy formulation, decision-making, and innovation by providing a conducive environment. He acknowledged the creation of working groups under UN-GGIM: Africa to offer strategic leadership, supervision, as well as fostering the ongoing development of geospatial information in the continent. These Groups have established a Strategic Plan with work plans to aid in the advancement and maintenance of the substantial progress previously achieved by countries.

16. Finally, he indicated that, the already developed Geospatial information for sustainable development in Africa: African action plan on global geospatial information management 2016-2030 articulates the vision of geospatial and location-based information, and its acceptance as a framework for official geospatial data guidelines for the Sustainable Development Goals and their global indicators is encouraging. This will immediately promote the integration of geospatial and statistical data. Additionally, it will bring together the worldwide geospatial and statistical communities.

B. Election of Officers

17. The meeting decided to elect the Executive Board of UN-GGIM: Africa to steer the eighth meeting and facilitate the discussion.

18. After elections the composition of the Executive Board and the Working Groups is as follow.

19. :

20. Executive Board:
- Chair: South Africa
- 1st Vice-Chair: Cameroon
- 2nd Vice-Chair: Morocco
- 1st Rapporteur: Uganda
- 2nd Rapporteur: Burkina FAso
- ex-Officio member of the Bureau, without voting rights : Ethiopia
- Secretariat: United Nations Economic Commission for Africa (ECA).

21. Executive Working Groups with their chair and members: Because the functioning of the Working Group is not meeting the expectations of the Regional Committee, the meeting decided to task the new Executive Board to undertake a thorough review of the WG compositions, operations and mandate so as to propose a new mechanism for consideration within six months.

22. As a reminder, the current composition of the Executive Working Group is as follow:

Working Group	Convenor	Members
WG1: African Geodetic Reference Frame	1.Kenya	2.Nigeria - 3. Morocco - 4.Botswana - 5.Gabon - 6.AFRIGIST - 7.RCMRD - 8.UNECA
WG2: Fundamental Datasets and Standards	1. South Africa	2.Cameroon - 3.Burundi - 4.Burkina Faso - 5.North Africa [TBD] - 6.Niger - 7.UNECA
WG3: Institutional and Legal frameworks	1.Nigeria	2.Algeria [TBC] - 3.Madagascar - 4.Ethiopia - 5.Central Africa [TBD] - 6. UNECA
WG4: Capacity and capability development	1.Morocco	2.Kenya - 3.Zimbabwe - 4.Côte d'Ivoire - 5.Central Africa [TBD] - 6.South Africa - 7.RECTAS - 8.RCMRD - 9.AARSE - 10.UNECA
WG5: Integration of Geospatial and Statistical Information	1.Namibia	2.South Sudan - 3.Liberia - 4.Cameroon - 5.Morocco - 6.UNECA

C. Adoption of the agenda and organizational matters

23. The agenda, rules of procedure as well as the organization of the work for the sessions of the meeting were adopted without any alteration.

24. Provisional Agenda ((E/ECA/GGIM-A/8/1)) was moved by Cameroon

25. Draft Agenda was adopted and supported by Zambia and Nigeria Africa without any changes made.

26. Proposed programme of work (E/ECA/GGIM-A/8/2) was moved by Zambia and Nigeria Africa without any changes made.

27. Rules and procedure (E/ECA/GGIM-A/1/3) were adopted in the first UN-GGIM: Africa meeting in 2015 that occurred in Nairobi, Kenya without any further modification. .

D. Session on reports

28. **UN-GGIM: Africa Activities Report** | Report of the activities of the Regional Committee ((E/ECA/GGIM-A/8/4) by the ongoing Chair of the Regional committee, Mr. Oumar Ka (Senegal).

29. Mr. Ka remained participants on the history of UN-GGIM: Africa and illustrated the coordinating body's voyage thus far. All efforts culminated in the creation of an action plan, which is being implemented. The vision of UN-

GGIM: Africa is people, data and the environment as well as inter-governmental processes where governments play critical roles. The IGIF implementation has already started in the continent, this implementation is occurring in partnership with other frameworks in the continent. The African Action Plan that started has been revamp starting from the meeting in Seventh UN-GGIM: Africa meeting held in Cote I'Voire in 2021. There are working groups under UN-GGIM: Africa focuses on crucial developmental geospatial dimensions for the continent. (WG1: African Geodetic Reference Frame, WG2: Fundamental Datasets and Standards, WG3: Institutional and Legal Frameworks, WG4: Capacity and capability building, and WG5: Geospatial and Statistical Information Integration). The pillars include policy and governance, capacity building, standards and partnerships, including programs and activities. These include the IGIF, SALB, standards, fundamental datasets, AFREF, and GeoNyms. The Working Groups needs to be revamp to accomplish the challenges entrusted to them.

30. The activities conducted included: workshop of value of geospatial data, national action plans, in Cameroon, Tunisia etc. Geocoding for censuses, African Geospatial Development Index, geoportals, meeting of UN-GGIM: Africa, integration and geography and statistics. Partnerships, national training in Geocoding, e-learning courses etc. Challenges needs that the thematic groups are revamp and countries to take effective leadership in countries. Equally, adequate resources are mobilized with the financial mobilization of resources. UN-GGIM: Africa structure will remain be the operations have to change and NMAs have to adapt to new changes.

31. South Africa representative indicated that the report presented reflected the true picture UN-GGIM: Africa. The working groups had barriers, in language and time zone differences, making coordination of activities difficult. The struggle will be to align the Working Groups actions with the global strategies and with other Working UNGGIM Groups in other continents.

32. Private sector and UN-GGIM: Africa had some progress and the Bureau has worked hard to advance the private sector. The challenges are related to communication, collaboration, cooperation to harness the potential of these components in the implementation of actions and other issues related to UN-GGIM: Africa. The mobilization of resources remains a pertaining issue and member state engagements is also needed for the success of UNGGIM.

33. There is progress in developing a work plan in UN-GGIM: Africa Action Plan with quantifiable actions that can be measured accordingly. Each working group has a plan and the groups are encouraged to work on-line aimed at determining progress while fostering cooperation among countries..

34. **Reports of activities by the Executive Working Groups** |

35. WG1 represented by Kenya on African Geodetic Reference Frame (AFREF): No report

36. The WG2 on Fundamental Datasets report represented by South Africa.

- There has been noticeable progress in the work of the High-Level Group on IGIF globally. The HLG-IGIF currently has four African countries (Burkina Faso, Cameroon, Ethiopia and South Africa). It will therefore be worthwhile to share progress and experiences with other countries. This can be added to Item 5: Technical issues: Geospatial Information Framework for Development. It will be great to have this presentation be done by the member state and not the Secretariat (New York).
- South Africa has joined the Open Geospatial Consortium and delivered a speech at the 124th OGC meeting held in Singapore from 3-7 October 2022. SA submitted a proposal to OGC to socialize OGC standards to

African countries and to use platforms such as the UN-GGIM: Africa. It will be a pleasure to share the same presentation with our counterparts. This can be discussed with Item 3 : Presentation of reports.

- The Working Group on Marine SDI is planning to host a regional workshop on the IGIF- Hydro and one such workshop will be held on the African continent. South Africa has also commenced with the Marine and Coastal SDI with preliminary datasets and data custodians identified. Although this topic is only applicable to coastal member states, the UN-GGIM Africa meeting provides a platform to share and exchange knowledge. A proposal is made to add an agenda item: Marine and Coastal SDI / IGIF-Hydro/Land and Sea.
- South Africa will host an International Cartographic Conference (ICC 2023) in Cape Town. South Africa is requesting the blessings of the UN-GGIM Secretariat to host a workshop parallel to the ICC2023 conference. The theme and content of the workshop can be discussed and agreed upon between the host (Department of Agriculture, Land Reform and Rural Development) and the UN-GGIM: Africa Secretariat.

37. The WG3 represented by Nigeria on Institutional and Legal frameworks: No report.

38. The WG4 represented by Morocco on Capacity and capability development: No report.

39. The WG5 represented by Namibia on Integration of Geospatial and Statistical Information | the WG reported on the Global Survey on the implementation of the GSGF and assessing the readiness of Africa. The participation in the survey was very low as only 11 countries responded. The communication channels between working groups are few and the dynamics in Africa on the integration of geography and statistics are not reflected globally in reports and efforts should be made by member states to participate in questionnaire administration.

40. **Status of Recommendations of Previous Meetings** | ECA [Andre Nonguierma]. There were seven groups of recommendations proposed at the seventh meeting in Abidjan, Côte d'Ivoire. Little progress was made in implementing the resolutions that were taken.

E. Contribution of regional committees and thematic groups

41. **UN-GGIM Private Sector Network** | World Geospatial Industry Council [Derek Clarke]. The private sector is fragmented and dominated by multinational corporations, and private sector participation in geospatial operations in Africa is limited. WGIC presented a paper in India during World Geospatial Industry Council and the document is available for free download in the WGIC website. WGIC has engaged a new project on examining (Public, Private, Partnership) PPPs and best practices in the context of Africa. This PPP initiative requires countries to begin with a brief survey, the results of the survey will then be shared with the countries for implementation. Work is being done on topics connected to the Sustainable Development Goals (SDGs) as well as ongoing talks in GGIM and current changes in the geospatial world.

42. Business sector participation with UN-GGIM: Africa, is crucial. It is difficult to conduct a thorough assessment of the private sector due to the lack of structured geospatial information setup of actors in the continent. The international geospatial industry council and UNGGIM, both of which have a network of 23 nations, are organized into two sectors. Africa is represented on

the PSN board and the WGIC is comprised of just two African enterprises and as WGIC as well as PSN are not-for-profit organizations. It offers members a variety of benefits through its various membership categories. Governments should participate in geospatial network collaboration with private companies

43. **UNGEGN |** The United Nations Group of Experts on Geographical Names (UNGEGN) is one of the nine expert groups of the United Nations Economic and Social Council (ECOSOC) and deals with the national and international standardization of geographical names. Every five years they hold the UNGEGN conference. Every two year Expert Group Meeting on standardization of geographical names is held. The situation of standardization of geographical names in Africa is challenging and the importance of normalizing geographic names should not be over emphasized. UNESCO and other partners have recognized the importance of a normalized geographic names. Normalization of geographic names is important in all operations including but not limited to the integration of geography and statistics. A national programme on the normalization of geographic names harnesses the potentials in almost all sectors of society.

44. All approaches for normalization are good so long as they comply with international standards. UNGEGN provides a five-yearly report to the UN Conferences on the Standardization of Geographical Names. It is supported by a Secretariat and Bureau supplied by the Division of Statistics of the United Nations. Between Conferences, UNGEGN has two official meetings and focuses on standardizing names via Working Groups, Special task teams, and Divisions. These so-called Divisions are groupings of countries that share geographical and/or linguistic interests. A number of liaison officers have been appointed by UNGEGN to facilitate communication with various scientific organizations.

45. A small number of African countries are participating in UNGEGN activities at a global and national levels, and even fewer countries have Standardization of Geographical Names institutions. ECA must support Standardization of Geographical Names in Africa, since its inception and ECA was the first organization on the continent to advocate this concept. ECA supported the development of a programme for registering geographical names, and STATCOM Africa through several recommendations promoting the Standardization of Geographic Names in the continent. After the Gaborone Declaration on Standardization of Geographical Names in Africa, the ECA should execute a plan to implement the Road Map. ECA should also complete the creation and distribution of the Standardization of Geographical Names software. UNGEGN has a newly developed strategy for the implementation of Standardization of Geographical Names, which adheres to the recommendations of ECOSOC. To link this plan with other plans approved by ECOSCO and other institutions as well as countries, a strategic plan and a working plan are necessary, and the Working Groups on Geographic Names should be a part of UN-GGIM: Africa or merged with other Working Groups.

46. Countries like Sudan, Mali and Mauritania undertaking Standardization of Geographical Names require coordination and collaboration both internally and externally. Mali held two on-line training sessions on national workshop on the Actors of geospatial in Mali and 76 participants took part in meeting. Burundi has a structure for the Standardization of Geographical Names in the country and a committee is in place for standardization.

F. Policy Issues | Geospatial Information Management in Africa

47. **Partnerships and Key Initiative** | Secretariat and Regional committees.

A global meeting related to UN-GGIM activities was held during the World Geospatial Congress held recently in India. The report to ECOSOC that evaluated the implementation of UNGGIM was reviewed in this meeting as the extent of success, and outcomes were examined and after presentation it was noticed that ECOSOC response had some has good and bad outcomes. The issues has been lack of resources to run UNGGIM and the budget as ECOSOC advised for the planned budget for UNGGIM to be presented in 2024, the budget seven positions to be recruited within the UNGGIM secretariat. The world Congress had more than 500 participants and UNGGIM meeting occurred as a side events. Two centers in Geospatial Information are been created one in China and another in Germany for Geodesy.

48. **Integration of geospatial and statistics** (E/ECA/GGIM-A/6/05) | EG-ISGI. [TBC]

49. **Integrated geospatial information framework (IGIF)** | Secretariat [Greg Scott]. The Greg Scott representative highlighted in his presentation that the Integrated Geospatial Information Framework provides a framework for building and upgrading national geospatial information management systems. Specifically suited for low- to middle-income countries and Small Island developing states. However, it is also utilized to enhance and coordinate efforts in order to create alignment between and across current national agency capabilities and NSDIs in industrialized nations. The Vision acknowledges the duty of countries to prepare for and offer better results for future generations, as well as our common desire to "leave no one behind." The mission aims to stimulate action towards bridging the geospatial digital divide, to find sustainable solutions for social, economic, and environmental development, and to influence inclusive and transformative societal change for all citizens in accordance with national priorities and conditions. The IGIF has been aligned with the SDGs and all aimed at providing country level actions plans. The United Nations has developed the SDG data alliance that gathers information about countries and assessing the gaps and seek ways to implement the gaps.

G. Technical Issues

50. **Common geographies for Sustainable Development Goals: The UN SALB Programme** | UNGIS [Guillaume Le Sourd].

51. The objectives of SALB is to promote accessible, interoperable and global common geographies on subnational units and boundaries to measure and monitor the Sustainable Development Goals for effective decision-making.The programme helps to identify and maintain of authoritative contact information of the National Geospatial Authorities responsible for administrative boundaries validation. Compile complete and consistent GIS dataset worldwide for administrative boundaries and names at first and second level below national, at 1 million scale. Maintain a table overview of historical changes (data through time) of national administrative units and names.

52. The challenges have been the participation from Member States, standardization efforts (geography & codes) and the lack of resources for the programme. The opportunities are the GGIM Africa Plan for Action as well as the long-standing support and coordination by ECA as well as new partnership on capacity building.

53. **GRID3 (Geo-Referenced Infrastructure and Demographic Data for Development)** | Integration of Geospatial Data for Effective Development Planning | Collaborates with governments to produce, evaluate, and utilize geospatial data on people, settlements, infrastructure, and borders. GRID3

brings together the experience of partners from government, the United Nations, academia, and the commercial sector to provide adaptive and relevant geospatial solutions depending on each country's capability and development needs. The initiative offers nations a one-of-a-kind set of tools for creating open-source data, as well as support for data applications to guarantee maximum impact and training to build the national geospatial foundation for future evidence-based development and humanitarian decision making. The initiative takes a novel and efficient strategy, integrating the highest-resolution and most recent satellite images, dynamic modelling and cutting-edge scientific approaches, and capacity-building services to assure the long-term usage of geospatial data across the country.

54. **Digital Earth Africa** | Powered by partnerships, Digital Earth Africa provides a public infrastructure and accessible analytics to unlock the value of Earth observations for government decision-makers. They are responsive to the information needs, challenges and priorities of the African continent. DE Africa is building on existing capacity to enable the use of Earth observations to address key challenges across the continent. DE Africa has been involved in institutional strengthening as government agencies and ministers are critical decision-makers, and direct engagement is vital to build relationships, capacity and awareness and to ensure that information from DE Africa is relevant and effective for governments. They work directly with Government Ministries - Statistics, Agriculture, Climate & etc. - to build in-country knowledge and skills, to tailor DE Africa information to specific national needs, and to ensure that the delivery of information from DE Africa is effective (e.g., information is delivered through the appropriate national institutions). DE Africa is making impacts as 25 published use case studies (Kenya, Ghana, Tanzania, Botswana, Uganda), across government, industry, academic. 7 use case studies in development (Senegal, Benin, Burkina Faso, Niger, Botswana, Kenya, and Nigeria) and 2 industry projects supported.

55. **Head Aerospace Group |** Supporting Africa with 86 Satellite. Formed in 2007, is a privately held space corporation based in Beijing. HEAD has a global presence, including operations in Hong Kong, France, and the Netherlands. Our worldwide company also comprises local staff on each continent, speaking over 10 different languages. Our staff members speak Arabic, Afrikaans, Chinese (Cantonese & Mandarin), Dutch, English, French, German, Italian, Kazakh, Portuguese, Russian, and Spanish fluently or natively. HEAD has been supplying upstream space goods in China over the last 14 years by bringing various space products and services from worldwide aerospace firms in China. Since 2017, this conventional business has allowed the company to create varied operations such as delivering geospatial solutions based on Earth observation satellites and running our Internet-of-Things (IoT) constellation.

56. HEAD is well positioned to be a prominent participant in the geospatial industry and operate as a prime contractor to supply sophisticated fully integrated geospatial solutions, thanks to 86 satellite-based Earth observation pictures. The international team oversees over 120 distributors throughout the world that offer satellite images collected by Chinese commercial and government Earth Observation satellites. Our offering comprises a direct receiving station for near-real-time access to satellite imagery, a centralized geodata hub for satellite images, and geospatial data processing in the nation for government and commercial customers. Agriculture, forestry, energy, mining, environment, water, transportation, and military are all covered by our geospatial solutions. It also solves horizontal demands at the city or regional level, such as urban planning based on current satellite imaging and intelligent city management enabled by changes identified by regularly collected satellite photos. HEAD will have access to more than 80 Earth observation satellites by

2022, with more than 20 launches planned, allowing our clients to obtain new photos over their region of interest at very high quality multiple times each day.

57. **FAO - Sustainable Methods for National Land Cover/Use Mapping** | in the context of Scarcity of In-Situ Data and Project Resources | The Integrated Geospatial Information Framework (IGIF) provides a basis and guide for developing, integrating, strengthening and maximizing geospatial information management and related resources in all countries. Geospatial data is at the core of implementing the IGIF together with data governance, and other elements well described under the 9 paths and the components of these. Reading from the strategic path 4, Data. For a country, "Having access to the right data and at the right time is crucial to good decision making. It is data that provides new levels of insight into our past, present and future. For this reason, governments, businesses and the community need to know they are using the most accurate and authoritative data for planning, analysis, navigation and visualization – good data underpins good decisions". However making good land cover maps and good land use maps is not a trivial task. Keeping these up-t-date is also very difficult. As a result only few countries produce their LCLU maps on a regular basis and with high accuracy being reported. In this context my presentation describes a novel approach developed by FAO to support countries to produce land cover maps and land use map (crop type maps) in the context of scarcity of in-situ data. The scarcity of in-situ data is in fact the biggest challenge that countries are facing globally and which impede their uptake of EO data for operational monitoring and reporting on land cover and agriculture.

58. The presentation looked at the relevance of land cover and crop maps and alignment to the IGIF, GSGF, SDG Geospatial Road Map, Global vs National LCLU Maps, challenges in the operational use of LCLU maps at the national level, innovative solutions to use less in-situ data and to make better use of it and success Stories as well as the next steps to be taken.

59. **Capacity development** | AFRIGIST [Abdoulaye Belem]. The representative from AFRIGIST, Mr. A, Belem indicated that the African Regional Institute for Geospatial Science and Technology (AFRIGIST), formerly known as Regional Centre for Training in Aerospace Surveys (RECTAS) was established in 1972 under the auspices of the United Nations Economic Commission for Africa (UNECA) as an educational "one-stop" solution institution that trains highly skilled manpower in geospatial information science and technology, and its applications. AFRIGIST is located within the campus of Obafemi Awolowo University, Ile-Ife, Nigeria. The Institute is a bilingual (English and French) inter-governmental joint institution for Africa, with full diplomatic accreditation in the Federal Republic of Nigeria and its membership is open to all African countries. The member countries at the moment are eight (8) namely: Benin, Burkina, Cameroon, Ghana, Mali, Niger, Nigeria (the host country) and Senegal. New countries have recently joined the Institute: Cote-d'Ivoire, Guinea-Bissau and Liberia.

60. The programme has trained over 2500 students since 1972 and in 2020 Fifty-seven (57) students out of seventy-seven (77) admitted registered for Technologist Diploma (TD), Professional Master (PM), Post graduate Diploma (PGD), Master of Science in GIS (M.Sc. GIS) and Master of Geo-information Technology (MGIT) for the period 2018-2019. Sixty (60) students out of seventy-one (71) registered for 2019-2020 academic session in the following programmes: Technologist Diploma (TD), Professional Master (PM), Post graduate Diploma (PGD), Master of Science in GIS (M.Sc. GIS) and Master of Geo-information Technology (MGIT). Three (03) out of these students deferred their admission.

61. **Capacity Development** | RCMRD. nformation and allied information communication applications. As part of its mandate, RCMRD, through its

programme on early warning, offers capacity building, research, development and innovation services utilizing space technology for disaster risk reduction, disaster management and emergency response. Under the aegis of E-XE4174 – United Nations Economic Commission for Africa (ECA). AFRIGIST was opened formally on October 21, 1972, with four governments as the founding members. Member states at the moment includes: Benin, Burkina, Cameroon, Ghana, Mali, Niger, Nigeria, Senegal.

62. Normal photogrammetry lectures began on October 26, 1972. AFRIGIST provide nationals of African countries with theoretical and practical training in the field of aerospace surveys and geo-informatics, including remote sensing, photogrammetry, cartography, geographic information systems and airborne geophysical surveys, in order to meet the manpower needs of African countries in the aforementioned fields; conduct research and studies with a focus on the particularities of the African environment and its needs.

H. New Trends

63. In recognition of the dual role of Regional Committee meetings as both a parliamentary process and a forum for intellectual exchange, the meeting was organized in a scaled-down format with several special topics and review of current trends of the geospatial domains. The following presentations were received.

64. **UN-GGIM and the SDG Data Alliance |** The objectives of the SDG Data Alliance is to leverage and strengthen the in-country expertise from geospatial experts within and across governmental agencies and organizations leveraging the data hubs. Address national and global reporting requirements to report on the SDGs with specific focus on SDG 10 and accelerate achievement of the SDGs by accurately identifying areas for focus and investment.

65. The IGIF is a multi-dimensional Framework aimed at strengthening national geospatial information management, particularly in developing countries. With a focus on the ability for geospatial information to be integrated with any other meaningful data to solve societal and environmental problems, the IGIF acts as a catalyst for economic growth and opportunity and stimulates improved understanding and decision-making for national development priorities and the SDGs. The ultimate benefits, including the considerable economic benefits, of integrating and strengthening national geospatial information management is that it is a strategic enabler for all levels of government and the broader community. It improves planning for economic growth and delivery of better services.

66. It supports the delivery of the SDGs, such as poverty alleviation, socially inclusive development, protection of the environment, disaster response times, regional cooperation and transparency in governance. The SDG Data Alliance's technology, expertise, and financial support enables countries to more precisely allocate resources to address all forms of inequity - reducing inequalities of all kinds. The alliance collects data on equity for women, reducing hunger, reducing poverty, improving access to clean water and taking action to reduce the impact of climate change.

67. **Geoportals | Esri Africa Geoportal** | Matthew Pennells. The ESRI representative indicated that the geoportal developed by ESRI is a portal to web-based geospatial resources that allows you to find, browse, and utilize geospatial data and services made accessible by their supplying businesses. Similarly, data providers may utilize the geoportal to make their geographic

resources discoverable, observable, and accessible.

68. **PLACE** | Denise Mckenzie. The non-profit organization PLACE was founded on the belief that mapping data is an integral part of the modern digital ecosystem and essential to unlocking economic, social, and environmental opportunities for sustainable and equitable growth, development, and climate resilience; however, this data is not accessible or affordable in too many parts of the world. The objective of PLACE is to bridge this portion of the digital divide. As more and more aspects of our public and private lives undergo a process of data revolution, it is becoming imperative to develop new methods for managing the data lifecycle of how data is gathered, stored, utilized, and repurposed is changing dramatically. Specifically, historical ideas of power and data access must be rebuilt for the twenty-first century in ways that prioritize the public good and shared interests in a responsible and sustainable manner.

69. Mapping data is essential to unlocking economic, social, and environmental prospects for sustainable growth, development, and climate resilience, and is a vital component of the modern digital ecosystem. Data is the pillar used to tackle global issues related to climate impact, provide safe, resilient, affordable housing, offer digital financial services, determine the locations of covid-19 vaccination sites, develop natural disaster risk models, or document land rights, accurate, up-to-date, consistent mapping data is a prerequisite for your work. This is precisely what PLACE provides: the foundational data upon which analysis, choices, and investments can be conducted and effect delivered. Yet, in many regions of the world, high-quality mapping data does not exist, and when it does, unequal access means that it does not benefit individuals or communities fairly or evenly. Similar to global economic disparity, too few individuals own the power and advantages of mapping data.

70. **Esri - Moving the Value Chain of Data and Knowledge |** Mapping common ground requires that we consider all the factors. It means not just looking at the money or the environment or the social dimensions. It's about bringing it all together. And the language of geography and the science of geography are the perfect foundation for organizing all this information and understanding the complexity of the situations that we're dealing with. It helps to simplify it and illuminates patterns, brings it together. Supply chain digitization with location technology delivers valuable insights—such as real-time status, service area gaps, and opportunities. Understand all network connections, suppliers, inventory levels, complex relationships, and potential impacts. Identify opportunities to boost performance, be more agile, and optimize connections to customers or suppliers. Gain visibility to ensure ethical and sustainable supply sources. Access and analyze Internet of Things (IoT) data for continuous improvement. Receive alerts when disruptions occur or service-level agreements are at risk.

71. **Geospatial Knowledge Infrastructure:** | The objectives of Geospatial Knowledge Infrastructure (GKI) and National Development are to build, share, and raise awareness of GKI and the Integrated Geospatial Information Framework (IGIF), consider the methods for operationalizing GKI to support strategic readiness and national development, and broadly comprehend the evolving geospatial ecosystem and its convergence with the larger digital ecosystem in the fourth industrial revolution. Three separate panels will be held at the side event to discuss the lessons gained as well as the function and significance of geospatial knowledge infrastructure and technological advancement in national development. As a result, geospatial knowledge makes it possible for us to recognize, analyze, and comprehend the many difficulties and possibilities that society faces in a particular geographic setting. But in order to fully realize this future state's potential, important enablers including alliances, industry leadership, information exchange, and capacity building are

also needed.

72. This geospatial knowledge enables governments to make data-based decisions at scale and determine the type of interventions required for different programs. It helps businesses make strategic decisions and plan resource allocation intelligently. Today, geospatial knowledge touches the lives of billions of people across the globe connecting people, workflows, and processes. The side event on Geospatial Knowledge Infrastructure (GKI) and National Development will address crucial questions on the growth trajectory of geospatial knowledge, the influence of new-age technology ecosystems, including AI, Big Data Analytics, Cloud Computing, Robotics and Drones on user segments, and the role and relevance of the paradigm shift from data to knowledge in national development..

I. Special Topic

73. **Programme on Modernization of national mapping Activities in Africa** | ECA [Andre Bassole]. Geospatial Information Science, in a world subject to rapid changes, both climate and Science and Technology. Unfortunately, while the industrialized countries, aware of the need to constantly adapt the way Geospatial Information is used to face these new challenges, strive to innovate, the communities of developing countries, including these from Africa, are confronted with barriers limiting even the basic contribution of Geospatial Information to sustainable development.

74. In such a changing global environment, what can be done for Africa in order to maintain, and even to optimize the contribution of Geospatial Information to the sustainable development of this continent? For example, how can the collaboration and partnership capacity between experts in the Geospatial Information and Statistics domains, be strengthened through Geocoding to integrate their respective data in order to deliver added-value information useable for the various applications in the development agenda of Member States in Africa. This integration capacity, as well as the specific capacity in each of the involved domains, in addition to Statistics, is dependent on the following three pillars: (1) Technology Capacity; (2) Human Capacity; (3) Organizational Capacity.

75. Strengthening African capacity based on these three pillars seems the way for the continent to be able to cope with adaptation to the rate of advance in Information Technology mentioned by the above cited authors, and the series of current and emerging challenges, demanding on Geospatial Information.

76. This research study commissioned by ECA attempts to respond to the key questions related to what can be called the Modernization of Geospatial Information and National Mapping Agencies in Africa. The applied methodology builds on the Integrated Geospatial Information Framework (IGIF) as a reference.

77.

J. Presentation by countries

78. **Burkina Faso: Integrated Geospatial Information Framework :** Burkina Faso's SDI implementation status, indicates that the country has made considerable progress in SDI implementation in Burkina Faso in 2005 in accordance with the SDI Africa implementation guide produced by UNECA et al. in 2003. A national geospatial information policy was approved at the expert level in 2006, and significant commitment to the UN GGIM initiative on IGIF is required. The IGB is the national body in charge of overseeing the procedure.

A small team of seven experts was formed to fill out the suggested addendums and get them verified by all parties (about 70 institutions). The team is now working through the nine strategic paths to complete the Country-level Action Plan. The community of stakeholders must still validate it. Several enlightening outcomes have been accomplished thus far, such as familiarization with, and production of, process addenda and other papers generated by the UN GGIM team. Collective awareness of the need to establish and strengthen active GI Governance, as well as to provide up-to-date information products and services, knowledge of each Geospatial Information (GI) stakeholder with the data produced or used, and expanding and diverse collaboration among multiple partner institutions, thanks to IGIF.

79. The difficulties have been the lack of a Project Preparation Fund because the work of the project preparation team is exhausting, all documentation being in English because the work is participatory and inclusive, the other actors not necessarily understanding English, and additional translation work during workshop preparation. Inadequate mobilization of partners to help the process, as well as the country's low investment in the geo-information business, a position exacerbated by security and health concerns.

80. **Côte d'Ivoire |** The important role that forests play in the socioeconomic development of populations, as well as in contributing to the reduction of greenhouse gas emissions and the strengthening of resilience to climate change, have prompted the Ivorian government to establish a structural organization and set the following goals for 2030: to achieve a forest cover rate of at least 20% of the national territory, limit deforestation in classified forests and protected areas by 80%, and restore 5 million hectares of degraded land As part of the execution of the sustainable cocoa plan, a national forest monitoring system (SNSF) and early warning of deforestation should be in place by the end of March 2023. In this regard, the National Office of Technical Studies and Development (BNETD) completed the "Spatial Monitoring of Côte d'Ivoire Land" project in 2018 in order to offer the Ivorian state with a database on land occupation and land usage. It is now working on the project "Elaboration of the land use map of Côte d'Ivoire, reference year 2020-2021," as part of the development of the national forest monitoring system (SNSF) and early warning of deforestation for the sustainable cocoa strategy. Important success factors: Elaboration with all stakeholders, particularly their support, in order for goods to be accepted by everybody. Partnerships that benefit both the BNETD and its national and international partners (establishment of mechanisms for free access to data, interoperability, and regular updates of this data).

81. **Sudan |** Sudan has created a collection of base maps that may be used as a reference map to overlay data from layers and show geographic information. A single basemap might be composed of numerous feature, raster, or web layers. Basemaps give context for your work and serve as the foundation for your maps. A base map is a backdrop layer that contains geographic information. A base map offers context for other layers that are superimposed on top of it. Base maps are often used to provide location references for features that do not change frequently, such as borders, rivers, lakes, roads, and

highways.

K. Webinar | Socio-Economic Benefit of Geospatial Information

82. TBC.

83.

84. .

VIII. Conclusion & Closing

85. **Consideration of recommendations and conclusions**. Conclusions and recommendations were presented by a representative of ECA and adopted with few amendments. ECA was requested to finalize the document. The final document of conclusions and recommendations is annexed to the present report.

86. **Date and venue of the seventieth session of the UN-GGIM: Africa**. The meeting requested ECA to make the necessary arrangements for the convening of the ninth meeting of the Regional Committee of UN-GGIM: Africa in conjunction with other major geospatial-related events in 2023.

87. **Closing of the meeting**. The meeting was closed by the Chair of the Executive Board of UN-GGIM: Africa.

88. **Conclusions**.

89. The Regional Committee has strived 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 lead role in determining the way forward in the use of geospatial information in national and regional policy frameworks.

90. UN-GGIM: Africa provides a mechanism that allows the decisions and discussions of the global Committee of Experts on Global Geospatial Information Management to cascade to the regional level, where the focus then shifts to the issues facing African member States. The Regional Committee shall continue to carry out a number of work programmes and to provide a forum for member State representatives to meet, discuss and collaborate on important issues relating to global geospatial information management.

IX. Annex | Resolutions and recommendations

Revised version under formal editing

Preamble

1. *We*, the representatives of National Mapping Authorities (NMAs) of African States, supported by the African Union Commission (AUC), the United Nations Economic Commission for Africa (ECA), the United Nations Global Geospatial Information Management (UN-GGIM) Secretariat, and other partners, gathered via online platform from 1st to 4th December 2020 for the sixth meeting of the Regional Committee of the United Nations Global Geospatial Information Management for Africa (UN-GGIM: Africa), deliberated and resolved as follows:

1. Recommendation on the UN-GGIM: Africa Governance

2. *Resolve* to maintain the current structure of UN-GGIM: Africa (Executive Board and Working Groups) till a physical meeting is convened next year.
3. *Request* UN-GGIM Africa to consider focusing every year on a few areas (e.g. fundamental data and integration of geospatial and statistical information) and implement them effectively as opposed to getting its hands full each year.
4. *Reiterate the request for* each Working Group to prepare their Programme of Work for the duration of the term of office, broken into annual activities, with clear achievable milestones and budget requirement, within a period of three months following the UN-GGIM meeting at which the Working Group was appointed. An annual progress report must be submitted by each Working Group at the annual meeting of UN-GGIM.

2. Recommendation on national data infrastructures infrastructures and frameworks

5. *Acknowledging* that the need for building spatial information infrastructures for the collection, management, and dissemination of geospatial information is important to the African development agenda, much like other basic services such as road and telecommunication networks;
6. *Considering* that geospatial data infrastructure is the basic infrastructure for sustainable national development;
7. *Noting* the close linkage between the integrated geospatial information framework and national spatial data infrastructure;
8. *Request* ECA, the UN-GGIM Secretariat and the Executive Board of UN-GGIM: Africa to set up a technical committee to review the commonalities between NSDI, IGIF, NDII and other existing geospatial information policy frameworks to ensure consistence and coherence when developing one or another of these infrastructures nationally.
9. *Urge* Member States to continue with the establishment of their national SDI, and to align this with the integrated geospatial information framework (IGIF) of UN-GGIM, in particular to prepare their country action plan (Part 3 of IGIF) as part of this alignment effort.

3. Recommendation on the integrated geospatial information framework

10. *Noting* the adoption of the IGIF Implementation Guide at the tenth session of UN-GGIM, subject to further refinement and its finalization, as a means to strengthen national geospatial information management arrangements;
11. *Acknowledging* the establishment of a dedicated High-level Group of experts as a mechanism to provide the strategic leadership, coordination and oversight in order to ensure the sustained success of the IGIF, and to mobilize needed resources to maintain the momentum and refinement of the IGIF as a continuously evolving process.
12. *Taking cognizance* that Country-level Action Plans reference the specific guidance, options and actions provided in the Implementation Guide, and address each of the strategic pathways while considering the strategic and operational needs of a country; and in this regard, requested Member States currently

designing and developing their Action Plan under the United Nations Development Account 11th tranche Project to share their knowledge and experiences.

13. *Taking note* of the UN-GGIM Working Group on Disasters' call to African countries to consider implementing the Strategic Framework on Geospatial Information and Services for Disasters, particularly given that the COVID-19 pandemic provides a unique opportunity for monitoring and tracking each country's progress across the Framework's five priorities for action.

14. *Urge* Member States in Africa to endorse the IGIF so as to strengthen integrated geospatial information management arrangements and related infrastructures in their country and to operationalize the IGIF through their respective Country-level Action Plans, in such a way that transformational change is enabled, visible and sustainable.

15. *Call upon* African Member States and disaster experts to engage with the Working Group through membership and active contribution, to raise awareness on the need for geospatial data in support of disasters and to apply aspects of the strategic framework in the development of their national implementation plans.

5. Recommendation on the integration of geospatial and statistical information

16. *Acknowledging* the progress made at in developing the guidelines for the implementation of the development African spatial and statistical framework;

17. *Noting* that the integration of geospatial and statistical data is critical to achieving the mission of achieving the SDGs.

18. *Considering* that strong engagement within the statistical and geospatial communities, helps align the needs of the 2030 Agenda, but also to support new innovative approaches to the 2020 Round of Census.

19. *Requests* the ECA, with assistance from the Regional Committee for Africa of the United Nations Global Geospatial Information Management, to provide policy-level support for the African statistical geospatial framework, and to further prioritize and propose ground level to advance the implementation of national and regional activities on the integration of statistical and geospatial information in Africa.

20. *Recommends* that the Economic Commission for Africa continues to support African countries in building and developing their statistical-geospatial information infrastructure in preparation for the 2020 round of censuses and for the achievement of the Sustainable Development Goals.

3. Recommendation on the strategies for geospatial response to COVID-19

21. *Noting* that COVID-19 crisis has revealed that geospatial technology and geo-referenced data can play a central role in African effort to combat the pandemic;

22. *Noting* the impact of the COVID-19 outbreak with in most instances disruption and stopping of geospatial activities;

23. *Acknowledging* that the COVID-19 pandemic has comprised the operational capabilities of African national mapping agencies;

24. *Further* recognising the challenges and tensions related to the use of geospatial information to respond to the pandemic;

25. *Request* ECA to carry out a study to conceptualize and develop a continental strategy as a geospatial response to the COVID-19 pandemic. The strategy should include a road map to determine the ground-level infrastructure needed to support member States (at the tactical level, through the selection of sequences of targets, which would involve institutional mechanism and capacity development); a comprehensive logical framework (at the operational level, through the identification of specific objectives, results, activities, responsibilities/tasks, timelines and related costs).

26. *Urge* Member States to develop ground level action for the involvement of national mapping agencies, the private sector and civil society organizations in using geospatial information technology to respond to the COVID-19 crisis according to national circumstances.

4. Recommendation on Capacity Development and Modernisation of National Mapping Organisations

27. *Noting* that national mapping agencies are at a crossroad to remain relevant in the evidence business, with the emergence of new trends.

28. *Acknowledging* that capacity development continues to be a critical issue in Africa which continues to be left behind in this regard.

29. *Noting* the importance of providing common geographies to monitor the Sustainable Development Goals for Africa, and globally;

30. *Request* the Economic Commission for Africa, with assistance from the Secretariat of the United Nations Global Geospatial Information Management, 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 and provide frameworks for financing and partnerships.

31. *Encourage* Member States to take advantage of the Africa Geoportal application to publish and augment the accessibility of their national datasets and information products.

32. *Urge* Member States to commit to devoting more resources for the development of capacities and capabilities of their national mapping authorities.

33. *Recommend* Member States to embrace new data frontiers such as earth observation and geospatial big data; in view of expanding current national data systems.

34. *Recommends* Member States to tale advantage of the opportunity offered by the Geodetic Centre of Excellence to build capacity of African geospatial professionals in the field of geodesy.

35. *Requests* all African countries to submit their data on administrative units in the context of the SALB programme, in line with the Africa Plan of Action priorities

7. Recommendation on financing geospatial activities

36. *Recognising* the importance of the assessment and the determination of the economic benefits of geospatial information for member States.

37. *Noting* that availability of financial resources is key for building the spatial data foundation needed to leverage the enabling capabilities of geospatial information;

38. *Acknowledging* the need to develop a strategy for justifying investment in geospatial information;

39. *Further acknowledging* the necessity to overcome communication and engagement challenge in their countries and engender political buy-in for geospatial uptake;

40. *Call upon* ECA to undertake an assessment of the economic implications for African countries if geospatial technologies were not deployed in various development-related activities.

41. *Further call upon* ECA to develop a workable financing framework and resource mobilization strategy.

42. *Request* ECA with Member States to determine gaps and identify problems through a case-by-case analysis in selected African countries.

43. *Request* ECA, UN-GGIM: Africa, the Secretariat and partners to organize a series of e-learning events on evaluating the socio-economic benefits of investing in geospatial information, possibly devolved at least in English and French.