Economic and Social Council

Committee of Experts on Global Geospatial Information Management
Twelfth session
New York, 3–5 August 2022
Item 9 of the provisional agenda*
Geospatial information for sustainable development

Geospatial information for sustainable development

Note by the Secretariat

Summary

The present paper contains the report jointly prepared by the Secretariat and the Working Group on Geospatial Information of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators for consideration by the Committee of Experts on Global Geospatial Information Management.

At its eleventh session, held virtually on 23, 24 and 27 August 2021, the Committee of Experts adopted decision 11/105, in which it commended the valuable work of the Working Group towards strengthening the alignment of the work of the global geospatial information community with the implementation of the 2030 Agenda. The Committee expressed its appreciation for the inclusive development process for the working draft of the geospatial roadmap for the Sustainable Development Goals (SDGs) as an excellent guide in communicating the value of geospatial information and other technologies in generating geospatially integrated statistical data for the Goal indicators and allowing Member States to learn from the many examples and take note of the key actions relevant to their respective national circumstances.

The Committee of Experts also noted the progress of the federated information system for the Goals initiative and welcomed the formation of the SDG Data Alliance, both as integrated system-of-systems approaches, that would focus on how geospatial information was, and could be, used to support local to global Goal indicator initiatives, and encouraged further communication and updates on those activities to support the integration of geospatial information and enabling technologies in sustainable development and to help face current and near-future global challenges, including the continuing coronavirus disease (COVID-19) pandemic, climate change mitigation and disaster resilience and adaptation.

In this present report, information is provided on the activities of the Secretariat and the Working Group in their respective efforts to strengthen the use of geospatial information, in all its forms, to the needs and demands of the 2030 Agenda, the Goals and other global development frameworks. The Working Group details its progress and achievements during the intersessional period, anchored by the development of the SDGs Geospatial Roadmap, bringing a two-year development cycle to a close. The Roadmap is a living resource that helps communicate, guide and

* E/C.20/2022/1
enhance the awareness of geospatial information, Earth observations and related data sources, tools and methods in order to inform and support the implementation, measurement and monitoring of the SDGs in accordance with national circumstances.

Further, this present report contains information on the progress made by the Working Group against its workplan for 2022. This progress includes the formation of a task team on disaggregation by geographic location to address cross-cutting issues related to the geographical disaggregation of SDG data into a concise guidance note for the Inter-Agency and Expert Group and other actors in the SDG community. Moreover, the Working Group gives an account of its efforts to promote and raise awareness of the Roadmap and seeks the guidance of the Committee of Experts in this regard. This present report also includes a discussion of the efforts of the Secretariat and the progress made to ensure that the contribution of the global geospatial information community remains aligned with the 2030 Agenda and other global development agendas. This discussion serves to highlight the increasing opportunities for geospatial information to inform broader efforts to strengthen the implementation of the 2030 Agenda.
I. Introduction

1. The Sustainable Development Goals Report 2022\(^1\) escalates the urgency to meet the 2030 Agenda’s ambition, stressing the interlinked “nature of global crises balanced with the need to capitalise on the opportunity afforded by the recovery to adopt low-carbon, resilient and inclusive development pathways that will reduce carbon emissions, conserve natural resources, transform our food systems, create better jobs and advance the transition to a greener, more inclusive and just economy”. Specifically, the report highlights several areas across the Sustainable Development Goals (SDGs) where geospatial information can either directly support the resolution of these challenges, from data gaps, disaster-related statistics, understanding accessibility to health and other public services, measuring, and forecasting environmental changes, to understanding the cascading impacts of climate change.

2. The nature of our connected world emphasises that sustainable development isn’t just for 2030 – it’s about preventing cascading systemic collapse. The 2022 Global Assessment Report underscores this point, emphasising that “To change course, new approaches are needed… This will require transformations in what governance systems value… Doing more of the same will not be enough”\(^2\). While specifically referencing the global to local exposure to increasing disaster risk, the lessons and narrative apply to other domains due to the interlinked nature of our globalised society, economy, and environment. The growing severity and magnitude of the challenges before us, starting with COVID-19, with the focus now shifting to the growing threat posed by climate change, create spin-off impacts on food and nutrition, health, education, the environment, and peace and security. In each of these areas, geospatial information is vital to providing data to understand the geographical dimension – a ‘digital currency’ – for evidence-based decision-making from which all other forms of data, including statistics, can be integrated.

3. In this seventh year of national to global reporting on the SDGs, it is globally recognised that the world is at a crucial point in SDG implementation. It is also recognised that the 2030 Agenda and its 17 SDGs are highly dependent on geospatial information and enabling technologies as the primary data and tools for relating people to their location and place, and to measure ‘where’ progress is, or is not, being made, particularly at ‘disaggregated’ sub-national and local levels. In this respect, the need for new data acquisition and integration approaches, including exploiting the contribution made by geospatial information and Earth observations to support the implementation of the 2030 Agenda, is recognised by all agenda items under the purview of the Committee of Experts. In this regard, the global geospatial information management community must simultaneously recognise its vital role in helping augment, empower, and transform global efforts to correct our current global course.

4. This role extends to closing the significant capacity gap between developed and developing countries to exploit the emerging science, data, analytics, mapping, enabling tools and technologies of geospatial information. Crossing this ‘geospatial digital divide’ is essential to the geospatial transformation needed to respond to the issues in front of us. The Committee of Experts has been at the forefront of providing the frameworks, norms, and standards for countries to harness the data, science, technology, and innovation that underpins the digital transformation required to implement the SDGs. In July 2016, this was recognised by the United Nations Economic and Social Council (ECOSOC) in its resolution 2016/27, which recognised “the Committee is well placed to continue to contribute to the work of the United Nations, especially in the context of efforts to assist Member States in implementing the 2030 Agenda for Sustainable Development, the Sendai Framework for Disaster Risk Reduction 2015–2030, the Paris Agreement on climate change and the SIDS Accelerated Modalities of Action (SAMOA) Pathway” and stressed “the need to strengthen the coordination and

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\(^2\) [https://www.undrr.org/media/79595/download](https://www.undrr.org/media/79595/download)
coherence of global geospatial information management, in capacity-building, norm-setting, data collection, data dissemination and data sharing, among others, through appropriate coordination mechanism”.

5. At its eleventh session, held virtually on 23, 24, and 27 August 2021, the Committee of Experts adopted decision 11/105, which commended the valuable work towards strengthening the alignment of the work of the global geospatial information community with the implementation of the 2030 Agenda for Sustainable Development. The Committee also expressed its appreciation for the inclusive development process for the working draft of the SDGs Geospatial Roadmap as an excellent guide in communicating the value of geospatial information and other technologies in generating geospatially integrated statistical data, and to guide and enhance the awareness of geospatial information, Earth observations and related data sources, tools and methods in order to inform and support the implementation, measurement and monitoring of the SDGs in accordance with national circumstances.

6. Following the eleventh session of the Committee of Experts, the Inter-agency and Expert Group on the Sustainable Development Goal indicators’ (IAEG-SDGs) Working Group on Geospatial Information incorporated the Committee’s valuable guidance, translated the draft Roadmap into French and Spanish, and submitted it to the Inter-Agency and Expert Group for consideration at its twelfth meeting in November 2021. The Inter-Agency and Expert Group adopted the SDGs Geospatial Roadmap and subsequently submitted it for consideration by the Statistical Commission at its fifty-third session, in March 2022. With decision 53/101, the Statistical Commission adopted the Roadmap for statistical and geospatial actors working within the global indicator framework. With the vision of recognising geospatial and location-based information as official data for the SDGs and their global indicators, the Geospatial Roadmap helps in communicating how the broader frameworks of the Committee, such as the Integrated Geospatial Information Framework, the Global Statistical Geospatial Framework, the Global Fundamental Geospatial Data Themes and the Framework for Effective Land Administration, have an important integrative role in advancing the 2030 Agenda.

7. This present report provides information and updates the Committee of Experts on the activities of the IAEG-SDGs Working Group on Geospatial Information, including the adoption of the SDGs Geospatial Roadmap by the Statistical Commission. Further, this report also serves to inform the Committee on the initiatives of the Secretariat, including its efforts and progress made, to ensure that the contribution of the global geospatial information community remains aligned with the implementation of the 2030 Agenda, as well as to highlight the opportunities for geospatial information to inform broader efforts to support sustainable development.

8. The Committee of Experts is invited to take note of the report and express its views on the progress made by the Secretariat and the Working Group in how they have advanced the role of geospatial information for sustainable development. The Committee is also invited to endorse the Statistical Commission’s adoption of the SDGs Geospatial Roadmap. Points for discussion and decision are provided in paragraph 28.

II. Activities of the Working Group on Geospatial Information of the Inter-Agency and Expert Group on Sustainable Development Goals Indicators

General Activities

9. The IAEG-SDGs Working Group on Geospatial Information, chaired by Ireland and Mexico, comprises 14 Member States, nine custodian agencies, representatives of three
regional commissions, and other invited groups and experts. The Working Group convenes regular virtual and annual plenary meetings, formally reporting to the IAEG-SDGs. Owing to the complementary and cross-cutting nature of the 2030 Agenda, the Working Group also contributes to the IAEG-SDGs report to the Statistical Commission under the Commission’s agenda item entitled ‘Data and indicators for the 2030 Agenda for Sustainable Development’.

10. In the intersessional period, the Working Group finalised its Work Plan 2020–2021, alongside the development of the SDGs Geospatial Roadmap. Following the IAEG-SDGs twelfth meeting, convened virtually on 2 – 4 November 2021, the Working Group has conscientiously made progress against, and sought closer alignment with, the priorities, requests and activities of the IAEG-SDGs, through its Work Plan 2022, including:

(a) The formation of a **task team on Disaggregation by Geographic Location** aims to address cross-cutting issues related to the geographical disaggregation of SDG data. The primary output of the task team will be a concise guidance note for the endorsement of the IAEG-SDGs. The composition of the task team includes participants from seven Member States: Canada, Colombia, Denmark, Ireland, Italy (representing the Committee’s Regional Committee for Europe), Malaysia, and Mexico; and invited experts from eight institutions from across the UN system and geospatial community: Eurostat (European Commission), the Organisation for Economic Co-operation and Development (OECD), UN Environment, UN Food and Agriculture Organisation (FAO), UN Population Fund (UNFPA), the JAXA as a member of the Group on Earth Observations (EO4SDGs), Wageningen University and the United Nations Commission for Latin America and the Caribbean (UNECLAC).

(b) **The SDGs Assessment Matrix** extends work by UN-GGIM Europe to enable the identification of data needs and priority for the production of the geospatially integrated SDG indicators. The Working Group is analysing responses from its eight Member States: Canada, Colombia, Denmark, Indonesia, Ireland, Italy, Malaysia, and Mexico; and two from Eurostat and JAXA as invited expert institutions. Collectively, members have provided 474 individual records of how geospatial information is used to help produce, measure, monitor and disaggregate SDGs indicators. The initial analysis highlights that many Member States are producing geospatially integrated SDG indicators already examined in the Working Group’s ‘Shortlist results of the analysis of the Global Indicator Framework with a ‘geographic location’ lens’.

(c) **Promotion activities.** The co-Chairs of the Working Group have worked to engage various groups across the statistical and geospatial communities. These activities include presenting the SDGs Geospatial Roadmap at the International Association for Official Statistics’ Conference in Krakow, Poland, on 26–28 April 2022 and to the joint plenary session of UN-GGIM Europe and the Conference of European Statisticians at the United Nations Economic Commission for Europe in Geneva, on 20–22 June 2022.

11. The Working Group’s future work includes collating use cases of how countries have validated the outputs of Earth observations and incorporated these outputs into their national SDG ecosystem. The results emanating from the analysis of the SDGs Assessment Matrix will directly inform this work. Moreover, the Working Group welcomes the Committee to highlight their national examples of how geospatial information, including Earth observations, can contribute to the production, measurement, monitoring and disaggregation by geographic location of the SDGs.

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3 https://ggim.un.org/meetings/2017-4th_Mtg_IAEG-SDG-NY/documents/WG's_Initial_Shortlist-Table_A_B.pdf
The SDGs Geospatial Roadmap

12. Subparagraph (i) of the Statistical Commission’s decision 51/101, made at its fifty-first session, encouraged further work on better integration of geospatial and statistical information to better monitor the 2030 Agenda⁴. Guided by this decision at its sixth meeting⁵ in Mexico City, the Working Group considered how to communicate how geospatial information can reliably and consistently contribute to the production and dissemination of the SDGs. The consummate maturity of the Committee of Expert’s frameworks, including the Integrated Geospatial Information Framework (IGIF) and the Global Statistical Geospatial Framework (GSGF), established that the challenge in front of the Working Group necessitated raising awareness of the Committee’s frameworks beyond the global geospatial information management community. Thus, in its Work Plan, the Working Group developed the concept of a ‘Geospatial Information for the SDGs Roadmap’, which became the SDGs Geospatial Roadmap.

13. As a strategic information and communications mechanism, the SDGs Geospatial Roadmap contextualises several of the Committee’s frameworks to promote understanding between the statistical and geospatial actors working with the global indicator framework. Recognising and accepting geospatial and location-based information as official data for the SDGs and their global indicators, the SDGs Geospatial Roadmap provides simple and actionable guidance for national statistical offices, national geospatial information agencies, custodian agencies and others working within the national SDGs ecosystem. The guidance is set out in three phases that include details on how and why geospatial information is needed and how it can be applied to support countries in their national implementations of the SDGs:

   Phase 1: Prepare and Plan
   Phase 2: Design, Development and Testing
   Phase 3: Producing, measuring, monitoring, and reporting geospatially enabled SDG indicators

14. In highlighting available resources, existing global geospatial frameworks, and innovative approaches, the SDGs Geospatial Roadmap is supported by a series of key actions, supporting case studies and guidance on how to implement each phase, including recommendations on the unique value proposition and opportunity that geospatial information can and does provide. It also identifies what needs to be done, when, why and by whom.

15. These phases and key actions were established in part from the experiences and considerations of the Working Group, augmented by the outcomes of a series of informal roundtable conversations with the members of the Working Group and the IAEG-SDGs⁶. These informal conversations were conducted in English, French and Spanish. Initial drafts of the Roadmap were provided to the Committee of Experts at its eleventh session, with a final draft subject to review by Member States: Canada, Colombia, Denmark, Ecuador, India, Japan, Malaysia, Mexico, Norway, Uruguay; SDG Custodian Agencies: Eurostat, UN Women and the UN Statistics Division; and invited experts Wageningen University, UNECLAC, NASA, and GEO. Following this process, Mexico informally translated the Roadmap into English, French,

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⁴ Equally, the Committee recognised the need for the SDGs Geospatial Roadmap in its decisions 10/105 and 11/105 of its tenth and eleventh sessions respectively


⁶ IAEG-SDGs and Working Group Member States invited to these informal conversations included: Afghanistan, Belarus, Brazil, Cameroon, Canada, Colombia, Denmark, Dominican Republic, Egypt, Ethiopia, Fiji, France, Germany, Ghana, Grenada, Indonesia, Italy, the Kyrgyz Republic, Libya, Malawi, Malaysia, Namibia, Netherlands, Niger, Oman, Korea (Republic of), the Russian Federation, Samoa, Senegal, Sweden, the United Republic of Tanzania, and Trinidad and Tobago.
and Spanish then provided typeset and design resources. The Working Group welcomes offers of support to help translate the Roadmap into other languages, especially as it refocuses its efforts towards its promotion.

16. Some countries, as demonstrated in successive Voluntary National Reviews, have brought geospatial information into the heart of their decision-making and are stronger for it. Still, this capacity is primarily limited to too few countries, the majority being developed countries. Yet, the rationale that necessitated developing the SDGs Geospatial Roadmap underscores the importance of Member States to strengthen geospatial information nationally, as a unified ‘whole of government’ approach, not just on the nexus of statistical and geospatial information agencies. In making decision 10/103, the Committee of Experts noted the global significance of the IGIF, which now serves as a key umbrella for the many activities under the purview of the Committee. As the principal means of strengthening national geospatial information management arrangements within and across Member States, the implementation of the IGIF helps geospatially enable the implementation of the SDGs, especially in developing countries. Ultimately, the SDGs Geospatial Roadmap serves to communicate, raise awareness, and promote how the IGIF, the GSGF, the Framework on Effective Land Administration (FELA) and other frameworks have an important ‘integrating’ role in advancing the 2030 Agenda. Implementing the Roadmap will help further contextualise and communicate the work of the Committee of Experts to the broader ‘data’ community, inclusive of the statistical community.

17. Thus, the Working Group requests the Committee of Experts to endorse decision 53/101 of the Statistical Commission regarding the adoption of the SDGs Geospatial Roadmap.

Ongoing Business Modalities

18. At its sixth meeting in Mexico City, Ireland, as a member of the IAEG-SDGs, was welcomed as a co-Chair of the Working Group, joining Mexico in 2020. As one of its founding co-Chairs, Mexico has led the Working Group since 2016 and will step down as co-Chair following this current session of the Committee of Experts. The Working Group thanks Mexico for its exemplary leadership over the past six years, especially through the dynamic and challenging work environment experienced by all since the outbreak of the COVID-19 pandemic. Further, the Working Group will seek to identify and acclaim new leadership in the coming months, supported by meeting face-to-face on the margins of this current session.

19. The Working Group has been conducting quarterly (approximately) virtual meetings. Alongside these regular virtual meetings, ad-hoc meetings have been convened to support its work. As the immediate impacts and risk of COVID-19 subside and countries chart their course to establishing the ‘new normal’, the Working Group is looking forward to convening its seventh plenary meeting in person and is investigating how best to accomplish this task.

III. Activities of the Secretariat

20. A primary focus under the purview of the Committee of Experts is to develop and promote the frameworks, common principles, policies, methods, mechanisms and standards for the interoperability and interchangeability of geospatial information toward realising the shared ambition and vision of the 2030 Agenda. Items such as the SDG Data Alliance, mobilising additional resources (such as trust funds and other sources), and convening of forums for coordination and dialogue among Member States and between Member States and relevant international organisations, among other substantive work, is considered under other agenda items. Thus, the below is not by any means an exhaustive summary of the Secretariat’s work in this regard.
Raising Awareness of the SDGs Geospatial Roadmap

21. As part of its efforts to promote and socialise the SDGs Geospatial Roadmap, the Secretariat provided a staff member to help facilitate capacity-building workshops in Kyrgyzstan, Rwanda, and Burundi. Utilising extra-budgetary resources provided by the United Kingdom to the Statistics Division under the ‘UNSD-FCDO Programme on Monitoring the Sustainable Development Goals’7, the Secretariat augmented statisticians from the Statistical Division in the geospatial capacity development elements of this work in these countries. In Kyrgyzstan, this support was provided via an in-person mission, with Rwanda and Burundi convened as virtual workshops. Guided by the SDGs Geospatial Roadmap, the workshops helped communicate the mutually beneficial impact of strengthening coordination and coherence between the National Statistical Office, the National Geospatial Information Agency and other relevant actors within the national data ecosystem. Participants at each workshop examined the methodology and approach to using geospatial information to produce, measure and monitor SDG indicators8, with SDG indicators selected based on national development priorities.

The UN Global Assessment Report on Disaster Risk Reduction 2022

22. The 2022 edition of the UN Global Assessment Report9 on Disaster Risk Reduction (GAR 22) is the flagship report of the United Nations on worldwide efforts to reduce disaster risk. Published biennially by the UN Office of Disaster Risk Reduction (UNDRR), the Secretariat has taken a leading role in the development and data analysis of ‘Part 1: The Challenge’, in its chapters on ‘Our world at risk’ and ‘Systemic risk as a challenge to sustainable development’. This work helps examine why the global risk community must look beyond statistical data, urging countries to take a geospatially integrated approach toward understanding risk. The need for geospatial information is a concurrent thread through the GAR 22, with its importance underscored as a key mechanism to drive global to local efforts to reduce risk. This need helps to contextualise the importance of the Committee’s substantive work outside our community.

IV. Summary and Way Forward

23. As is now being observed in many areas of society, we are faced with a progressively narrowing pathway to protect our people and planet. The existing data gaps, the unevenness of how the 2030 Agenda is being implemented, and the Secretary-General now directly calling Member States and the global community to help “rescue the SDGs”10 are issues that present an immense challenge to our original collective ambitions. The scale of the interlinked and cascading challenges we face can be balanced by the integrative and transformational potential of geospatial information. It is within this kind of geospatial transformation that our hope to rescue the SDGs now lies. The SDGs are not a mechanism for guiding our ambition, achieving these goals are vital for our survival and geospatial information is at the foundation of solving this challenge.

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8 SDG: Indicator 2.4.1: Proportion of agricultural area under productive and sustainable agriculture; Indicator 9.1.1: Proportion of the rural population who live within 2 km of an all-season road; Indicator 11.3.1: Ratio of land consumption rate to population growth rate; Indicator 15.4.2: Mountain Green Cover Index
9 The UN Global Assessment Report 2022 - https://www.undrr.org/media/79595/download
10 “Today, we stand on the precipice of a critical moment. Either we fail to deliver on our commitments to support the world’s most vulnerable or together we turbo-charge our efforts to rescue the SDGs and deliver meaningful progress for people and planet by 2030 – stepping up our work to transform the international financial architecture; driving major economic transitions and renewing the social contract; and investing in data systems.”
24. In its resolution 2022/24 adopted on 22 July 2022, ECOSOC “acknowledged the achievements and progress made by the Committee of Experts in the area of global geospatial information management and its contribution to the strengthening of geospatial information management capacities and utilization”. In this regard, ECOSOC also acknowledged that the importance of geospatial information goes beyond global development agendas. This notion was examined in the Committee of Expert’s report (E/2022/68), entitled ‘Enhancing global geospatial information management’, transmitted to the Council via letter from the Committee’s co-Chairs to the Vice-President of ECOSOC. The report observed that “geospatial information applies to many thematic areas and disciplines, be it climate adaptation, efficient energy sources, secure land and property rights, the blue economy, resilient supply chains, sustainable health, food security, human rights and technology development, to name just a few. All those crucial areas have one crucial aspect in common: location”.

25. In discussing the value proposition of the Committee of Experts, the report examines the tension between the fundamental nature of geospatial information, in that it underpins all industries and all sectors in its universality and applicability; but has an inherent problem regarding communication and awareness. In this regard, there is a need to expand awareness of the potential of geospatial information in reaching policy- and decision-makers, and through the Committee’s architecture and collaborations with other leading bodies, we have the means to communicate the value of the work by national geospatial information agencies. In turn, this will ensure that the evolution, innovation and proliferation of geospatial information and its enabling technologies will be progressively mainstreamed within national economies, helping accelerate efforts towards sustainably reaching national and global development priorities and agendas.

26. For the global community to take the immediate, concrete, and coordinated actions needed to rescue the SDGs, communication tools like the SDGs Geospatial Roadmap will help promote the understanding and value of geospatial information, not just for the 2030 Agenda but also to foster sustainable development in alignment with national priorities. Communication tools like the Roadmap can help detail the ‘why’; it is the work of the Committee, anchored by the IGIF, that provides the ‘how’. The frameworks developed under the Committee’s purview immeasurably strengthen the role of the national geospatial information agency as a lynchpin in the national data ecosystem. This role will surely grow as the Committee works toward strengthening the ‘whole of government’ approach to geospatial information and the greater implementation of the SDGs.

27. It is for these reasons that the Committee of Experts, in its report to ECOSOC (E/2022/68) has identified “implementation, operationalization and scaling of geospatial mandates, capacity and capability for Member States” as being critical elements of work in the next five years. This is because the socio-economic aspirations of many countries converge around a more sustainable and resilient future where economic prosperity will benefit all of society and support the health and well-being of communities and individuals equitably. The successful pursuit of these goals means overcoming many data availability and data integration hurdles as we strive to implement the SDGs with geospatial information, statistics and other location-based data, while at the same time, helping bridge the geospatial digital divide and ensure that no one is left behind.

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11 E/RES/2022/24 Enhancing global geospatial information management arrangements. At the time of publication, this document has not yet been issued. The resolution adopted by ECOSOC, pending final edits, was tabled as a draft under symbol E/2022/L.26
https://undocs.org/E/2022/L.26
V. Points for discussion

28. The Committee of Experts is invited to:

(a) Take note of this present report, and express its views on the activities and progress of the Secretariat in advancing the role of geospatial information for sustainable development;

(b) Endorse decision 53/101 of the Statistical Commission regarding the adoption of the SDGs Geospatial Roadmap;

(c) Express its views and provide guidance on the progress of the Working Group on Geospatial Information of the Inter-Agency and Expert Group on Sustainable Development Goals Indicators, and possible future directions;

(d) Express its views and provide guidance regarding the role, contribution and examples of the global geospatial information community to support the implementation of the 2030 Agenda for Sustainable Development and other national to global sustainable development priorities and mechanisms.