UNITED NATIONS **E/C.20/2023/11/Add.1**

Economic and Social Council

20 July 2023

Committee of Experts on
Global Geospatial Information Management
Thirteenth session
New York, 2–4 August 2023
Item 9 of the provisional agenda*
Geospatial information for sustainable development and climate resilience

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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 twelfth session, held in New York from 3 to 5 August 2022, the Committee of Experts adopted decision 12/107, in which it endorsed Statistical Commission decision 53/101 regarding the adoption of the SDGs Geospatial Roadmap as an excellent reference and communication tool to enhance the awareness of geospatial information and other technologies in generating geospatially integrated statistical data for the Sustainable Development Goal indicators and allowing Member States to learn from the many examples and case studies and to take key actions relevant to their countries' national circumstances. The Committee noted the global progress towards achieving the Goals and the call of the Secretary-General to rescue the Goals, recognized the urgent and transformational role that geospatial information could have in overcoming many of the data availability and data integration gaps and urged Member States to implement the global frameworks of the Committee of Experts as a means of enhancing national geospatial information arrangements, to meet national priorities and to measure and monitor the Goals.

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, in addressing the needs and demands of the 2030 Agenda, the Sustainable Development Goals and other global development frameworks. The Working Group provides details of its progress and achievements during the intersessional period, principally through the promotion of the SDGs Geospatial Roadmap and the paper of the Working Group entitled "Examples of the implementation of the SDGs Geospatial Roadmap: disaggregating the SDGs by geographic location". The paper was presented to the Statistical Commission at its fifty-fourth session and serves to collate examples of how the Roadmap has been implemented nationally to inform and support the implementation, measurement and monitoring of the Goals in accordance with national circumstances while providing actionable guidance, anchored in the Global Statistical Geospatial Framework, on how to disaggregate the Goals by geographical location. Moreover, the report contains information on the progress of the Working Group on its workplan for 2023, including the development of a concise

* E/C.20/2023/1

guidance note in which the Working Group strategically positions the importance of geospatial information up to and beyond the mid-term review of the 2030 Agenda.

The report also contains information on how the Secretariat, with the guidance and support of the Bureau of the Committee of Experts, explores the many dimensions, opportunities and challenges arising in the area of geospatial information for climate resilience, proposing recommendations for the Committee to consider so that the role of geospatial information in national and global efforts for climate resilience is strengthened.

In addition, the report 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 frameworks. The discussion serves to highlight the increasing opportunities for applying geospatial information to achieve the Sustainable Development Goals, address climate-related challenges and leave no one behind.

I. Introduction

1. The midpoint of the 2030 Agenda for Sustainable Development is upon us. After eight years, and with less than seven remaining, the world is at a sombre juncture. Hard-fought progress against global poverty has been reversed due to the ongoing, interlinked and cascading social and economic impacts of the COVID-19 global pandemic; extreme weather events and our changing climate are breaking global heat records and potentially irreversibly changing our environment. Where the early years of the implementation of the 2030 Agenda provided a genuine cause for optimism and hope that we can bridge the many gaps in front of us, our current global outlook makes the same optimism harder to muster. Indeed, the United Nations Secretary-General now remarks that "unless we act now, the 2030 Agenda will become an epitaph for a world that might have been".

2. The 2023 Sustainable Development Goals Report[1] strengthens the language of its past editions, directly sounding the alarm, calling for a 'Rescue Plan for People and Planet' to be discussed at the upcoming SDGs Summit on 18-19 September 2023. In setting the scene for the upcoming mid-term review for the 2030 Agenda, the Report recognizes that the SDGs "are in deep trouble… we cannot simply continue with more of the same and expect a different result". In this regard, bridging the geospatial digital divide is crucial. Like global progress against the Sustainable Development Goals (SDGs), the disparity in access to, and use of, geospatial information differs across countries and regions. The Report underscores that global developmental progress "was fragile and most of it was too slow… [with] climate-related disasters exacerbating already faltering progress". It continues to stress that the most vulnerable people are bearing the brunt of our collective failure to deliver on the promise of the SDGs to date, highlighting the compounding effects of climate, COVID-19 and economic injustices that leave many developing countries with fewer options and even fewer resources to realize the ambition and vision of the 2030 Agenda.

3. But there is hope. The SDGs provide a comprehensive blueprint that will lead towards a more equitable, prosperous, and resilient world. In effect, the right plan is in place; it 'just' needs to be implemented, and one of the significant factors preventing its implementation is the lack of reliable data. Global development progress continues on a journey, and it is official statistics that provide the foundation on which SDGs progress is measured. Now, there is the recognition that SDGs progress cannot be fully realized using official statistics alone. Resources like the SDGs Geospatial Roadmap, now supported by comprehensive national experiences, highlight that the SDGs are highly dependent on geospatial information. Thus, to meet the massive demand to deliver the vision of the SDGs, the need to fully embrace geospatial information and cross the 'geospatial digital divide' – the gap that prevents countries from accessing reliable and consistent geospatial information, despite a vast abundance of data and geospatial technologies now available to all – grows commensurately.

4. The universality of the frameworks and methodological guides developed by the Committee of Experts over the past decade now allows Member States to leverage resources developed to solve the existential problems humanity face as a planet. In this regard, the Committee is at the heart of developing policies to assist Member States in taking the transformational steps required to create a more sustainable future. By way of example, in adopting resolution 2022/24, the Economic and Social Council (ECOSOC) reiterated the importance of strengthening and enhancing the effectiveness of the Committee of Experts, particularly for the achievement of its operations focused on the SDGs and the United Nations Integrated Geospatial Information Framework (UN-IGIF), to strengthen and ensure its continued effectiveness and benefits to all Member States.

[1] The Sustainable Development Goals Report 2023: Special Edition https://unstats.un.org/sdgs/report/2023/

5. Now at its thirteenth session, the Committee of Expert's focus on 'implementation' is not only timely, but critical. In the upcoming decade, it is predicted that greenhouse gas emissions will push global warming beyond 1.5°C above pre-industrial levels. This continuous temperature increase, accompanied by its consequences, amplifies vulnerability and weakens resilience. Additionally, the growing interdependence among individuals and human systems raises the likelihood of compound and cascading crises. Amidst these changes, as our planet is transforming, it is crucial to recognize the potential of geospatial information to help prevent and/or mitigate the impacts of climate change, air pollution, and biodiversity loss – what the United Nations Framework Convention for Climate Change (UNFCCC) terms the Triple Planetary Crisis[2]. While not underestimating the magnitude of the task ahead, unlike the initiation of the 2030 Agenda in 2015, Member States now possess the necessary frameworks, resources, norms, standards, and national examples that showcase the transformative power of geospatial information in informing decision-making, anchored by the UN-IGIF.

6. 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 Statistical Commission's endorsement of the paper on "Examples of the implementation of the SDGs Geospatial Roadmap: disaggregating the SDGs by geographic location". Further, this report also serves to inform the Committee on the initiatives of the Secretariat in two respects: the first being the development of the background paper to this report 'Geospatial information for climate resilience'; secondly, the Secretariat details 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. This report aims to provide a window into some of the work that the Committee is conducting in the area of geospatial information for sustainable development and climate resilience.

7. The Committee is invited to take note of the report and to express its views on the efforts made by the Secretariat and the Working Group to address the availability and application of geospatial information in climate resilience and the production of the Sustainable Development Goal indicators and in measuring and monitoring the key principle of the 2030 Agenda for Sustainable Development, which is to leave no one behind. Points for discussion and decision are provided in paragraph 25.

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

General Activities

8. The IAEG-SDGs Working Group on Geospatial Information is currently chaired by Colombia. The Working Group 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'.

[2] What is the Triple Planetary Crisis? https://unfccc.int/blog/what-is-the-triple-planetary-crisis

9. Following the IAEG-SDGs thirteenth meeting convened at the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) on 7 and 9 November 2022, the Working Group has worked to conscientiously make progress against, and sought closer alignment with, the priorities, requests, and activities of the IAEG-SDGs, guided by its Work Plan 2023[3]. As part of its reporting to the IAEG-SDGs, the Working Group developed a Storymap[4] 'Implementing the SDGs Geospatial Roadmap' that provides detailed information on its progress. In summary, the progress made by the Working Group over the intersessional period includes:

(a) The development of a paper[5] entitled '**Examples of the implementation of the SDGs Geospatial Roadmap: disaggregating the SDGs by geographic location**'. The paper was presented to the Statistical Commission at its fifty-fourth session and collated examples of how the Roadmap has been implemented nationally to inform and support the implementation, measurement and monitoring of the SDGs in accordance with national circumstances while providing actionable guidance. Moreover, the paper demonstrates additional national experiences of how Member States operationalize the Global Statistical Geospatial Framework (GSGF) to disaggregate the SDGs by geographical location. The paper is available in English and Spanish;

(b) **Promotion and Awareness-Raising Activities.** The Working Group with the Expert Group on the Integration of Statistical and Geospatial Information convened the side event 'Geo-statistical Integration - The Global Statistical Geospatial Framework (GSGF) and Beyond' at the fifty-fourth session of the Statistical Commission. The side event helped communicate the progress made by the Expert Group and the Working Group in this domain, setting forth an ambitious and achievable vision for the Commission in this area, anchored by the operationalization and implementation of the GSGF and the promotion of the SDGs Geospatial Roadmap, grounding practical actions that national statistical systems can take to realize the benefits and opportunities of geospatial information. In this regard, through a participatory discussion led by strategic thinkers and leaders, the side event raised awareness of the potential of geo-statistical integration to relevant functional groups and the broader statistical community.

(c) Forging Collaborations. In their efforts to strengthen the coordination of activities related to geo-statistical integration, the Expert Group on the Integration of Statistical and Geospatial Information has been liaising with other functional groups of the Statistical Commission, primarily to promote the Global Statistical Geospatial Framework. The co-Chairs presented at the Expert Group's seventh meeting, informing the Expert Group on its progress, including the updates to the SDGs Geospatial Roadmap, including the Examples of the implementation of the 'SDGs Geospatial Roadmap: disaggregating the SDGs by geographic location' paper.

10. In the coming months, the Working Group looks toward convening a virtual seminar with SDG Custodian Agencies and Member States to promote case studies and examples of geospatially produced SDG indicators. This awareness-raising activity will help showcase Storymaps, demonstrating how geospatial information helps with

[3] Working Group on Geospatial Information Work Plan 2023 https://unstats.un.org/sdgs/files/meetings/iaeg-sdgs-meeting-13/7b_WGGI-open-meeting-IAEG-SDGs-November8.pdf

[4] Implementing the SDGs Geospatial Roadmap: https://storymaps.arcgis.com/stories/482140f9d56647c794469db6da2d07bc

[5] Examples of the implementation of the SDGs Geospatial Roadmap: disaggregating the SDGs by geographic location English: https://unstats.un.org/UNSDWebsite/statcom/session_54/documents/BG-3a-Examples-of-the-implementation-of%20the-Geospatial-SDG-Roadmap-E.pdf / Spanish: https://unstats.un.org/UNSDWebsite/statcom/session_54/documents/BG-3a-Examples-of-the-implementation-of%20the-Geospatial-SDG-Roadmap-S.pdf

producing, monitoring, measuring, and disseminating geospatially enabled SDGs, completing the SDGs Geospatial Roadmap Storymap[6]. This work aims to feed into a paper for the IAEG-SDGs that will position geospatial information for the next seven years. Through this paper, the Working Group aims to concisely articulate the opportunity and role for geospatial information to 'rescue the SDGs', strengthening the IAEG-SDGs' ability to promote and influence the use of geospatial information in methodological innovations and improvements across the global indicator framework.

Ongoing Working Modalities of the Working Group

11. At its thirteenth meeting, the IAEG-SDGs appointed Colombia (National Administrative Department of Statistics), as co-Chair of the Working Group, joining Ireland (Central Statistics Office) and member of the IAEG-SDGs. At the end of their term, Ireland has now stepped down as co-Chair, leaving a vacancy. The Working Group wishes to thank Ireland for their considerable leadership over the past three years, especially for guiding the development of the SDGs Geospatial Roadmap. The IAEG-SDGs are expected to consider nominating a co-Chair alongside Colombia in the coming months.

12. 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. Moreover, the Working Group looks forward to convening its seventh plenary meeting in person and is investigating how best to accomplish this task.

III. Geospatial information for climate resilience

13. The Global Assessment Report (GAR) Special Report[7] 2023 on 'Mapping Resilience for the SDGs' underscores the importance of fostering resilience. Noting that "governments, the private sector and civil society [must] better understand how choices or inaction to promote societal well-being (people), ecological or biosphere well-being (planet) and economic well-being (prosperity) interact to build or undermine resilience". By summarising risks and hazards and imagining what a climate-resilient future would look like, it is clear that geospatial information has a fundamental role in enabling informed decision-making for climate resilience.

14. The need for geospatial information to enable countries to anticipate and respond to climate risks, to implement adaptation measures, and build capacities at various levels, across social, economic, and environmental domains is well understood. In this regard, National Geospatial Information Agencies (NGIAs) and other national geospatial organizations are at the centre of visioning and establishing this future. In a world where resilience is being diminished by increasing risks, the Committee of Experts is already taking a leadership role that helps raise awareness of the potential of geospatial information for strengthening climate resilience across its programme of work.

15. The decisions of the Committee of Expert's at its twelfth session, specifically 12/108, 12/109, 12/110, and 12/111, underscore how the Committee is leveraging its functional groups to position the global geospatial community to combat climate change. Furthermore, some NGIAs are leading national efforts to operationalize and implement climate-related geospatial information. However, there is more to do to ensure that all countries benefit from geospatially enabling national and global climate change and resilience activities. In this regard, the functional architecture, frameworks and resources developed by the Committee of Experts provide a mature and ready basis from which we

[6] The SDGs Geospatial Roadmap: https://storymaps.arcgis.com/stories/226e3f606f7940e1b5738e5bcab0cef3

[7] GAR Special Report 2023: Mapping resilience for the SDGs https://www.undrr.org/gar/gar2023-special-report

can take immediate, concrete, and coordinated actions to rescue the SDGs and respond to the climate emergency.

16. In response, a discussion paper is provided to the Committee of Experts as a background document to this present report. Entitled 'Geospatial Information and Climate Resilience – What Does UN-GGIM Do?' the discussion paper was developed as a collaboration between the United Kingdom's Ordnance Survey and the Bureau and Secretariat of the Committee of Experts and examines the actions that the Committee could take to enhance the role of geospatial information within climate change mitigation and resilience efforts are identified and discussed, in alignment with the UN-IGIF.

17. The foundation of this paper lies within the Ordnance Survey's "The 'How' Guide: Applying Geospatial Information to Climate Challenges", originally presented at the 2022 Cambridge Conference[8]. The discussion paper, guided by the UN-IGIF, draws attention to the potential role that NGIAs could play in delivering data and technologies that help countries mitigate and adapt to the climate emergency. It showcases how the Committee is embracing a new approach to its work, where its frameworks and substantive efforts can be utilized by Member States and subsequently elevated to the global level for broader impact.

18. In considering the broad progress that the Committee has accomplished in this area and the overwhelming demand within the climate change community for better and more accessible geospatially integrated data, the discussion paper recommends three future actions for the Committee's consideration:

(a) Establish a dedicated task team (or some such similar group) of experts, under the purview of the Committee of Experts, with representation from other potentially relevant ECOSOC subsidiary bodies and members of the United Nations system responsible for climate change and resilience to help provide leadership in this area. Such a task team could seek to establish and strengthen interlinkages between geospatial, statistical, climate and other relevant communities/organizations seeking similar outcomes. Such organizations could include similar intergovernmental bodies such as UNDRR, UNFCCC, the Group on Earth Observations and other international standards-based groups;

(b) Develop a discussion paper 'The UN-IGIF for Climate Change and Resilience' that expands on the relevant initiatives under the purview of the Committee of Experts in detail (inclusive of the UN-IGIF, Global Statistical Geospatial Framework, Framework for Effective Land Administration, Strategic Framework on Geospatial Information and Services for Disasters, among other key resources). Such a discussion paper could be accompanied with national experiences; and,

(c) Convene an international forum that brings together members of the geospatial and climate resilience communities that focuses on the role of geospatial information for climate resilience would help to establish an effective outreach programme.

19. In acknowledging the Committee's significant achievements in the realm of geospatial information and climate resilience, the discussion paper argues that the Committee of Experts, in line with its revised mandates, should assume a leading role in global discussions on climate change and resilience. By embracing this role, the Committee of Experts can continue to diversify and build on its work to foster collaboration, drive practical action, and make substantial contributions to addressing the challenges posed by climate change while enhancing global resilience.

[8] https://www.ordnancesurvey.co.uk/documents/cambridge-conference/how-guide-cambridge-conference-22.pdf

20. The Committee of Experts is requested to provide guidance on the background paper and its recommendations. The Committee is also invited to provide detailed feedback on the paper to the Secretariat by 30 September 2023.

IV. Summary and Way Forward

21. The main theme of the 2023 High Level Political Forum was "Accelerating the recovery from the coronavirus disease (COVID-19) and the full implementation of the 2030 Agenda for Sustainable Development at all levels". The 2023 SDGs Report highlights several examples of how countries are leveraging geospatial information and technologies to measure and monitor progress against the SDGs that was previously impossible. The Report also highlights how geospatial information, inclusive of Earth observations and satellite imagery, are a high priority for National Statistical Offices to build capacity. Moreover, in their Voluntary National Reviews, several countries highlighted the importance of data[9]. In this regard, the IAEG-SDGs' Working Group on Geospatial Information is redoubling its efforts to position the IAEG-SDGs to respond to the continuing demands of countries for "data which is high quality, accessible, timely, reliable and disaggregated by income, sex, age, race, ethnicity, migration status, disability and geographic location and other characteristics relevant in the national contexts[10]".

22. The complex and challenging picture painted by the 2023 SDGs Report, makes it abundantly clear that 'business as usual is not sustainable' is reverberating loud and clear. In this instance, more effort is required to overcome our present crises and create a resilient future that drives the transformation for the SDGs that will leave no one behind. Building a climate-resilient future will be crucial as the world experiences more climate-related disasters, with the impact of these events impacting those furthest behind already. Fortunately, while the need to bridge the geospatial digital divide is more acute, there is greater awareness of what can be done now, and what must be done to help countries leverage geospatial information. Countries can benefit from the maturity of the many frameworks and resources that have been developed by the Committee of Experts since the 2030 Agenda and the SDGs were envisaged. These endeavours must be intensified to strengthen local-to-global resilience, uphold the aspirations of the SDGs and to bridge the geospatial digital divide.

23. However, it is crucial to dismantle the barriers and divisions that hinder progress; the keyword is 'integration'. There is a vital importance of data acknowledged by all, and through the discussion paper, the geospatial community is initiating efforts to collaborate with the broader climate resilience community. It is essential to foster collaborative endeavours that unite communities to avoid fragmentation and break down silos. The maturity of the Committee of Expert's frameworks, anchored by the UN-IGIF, demonstrates the very means, the **'what'**, countries can use to realize this ambition. The SDGs Geospatial Roadmap communicates the **'why'**. National Geospatial Information Agencies are the '**how**' that brings everything together.

24. The role of geospatial information for the 2030 Agenda and the 17 SDGs is undeniable, but there remains a massive gap in capacity and capability that, for some countries, seems impossible. Closing the geospatial digital divide is essential for achieving the necessary geospatial transformation to address our challenges. The Committee of Experts has been leading the way in establishing frameworks, norms, and standards to empower countries in harnessing the data, science, technology, and innovation required for the digital transformation necessary to implement the SDGs. By

[9] E/HLPF/2023/5 Compilation of main messages for the 2023 voluntary national reviews https://hlpf.un.org/sites/default/files/2023-07/E%20HLPF%202023%205.pdf

[10] A/RES/70/1 Transforming our world: the 2030 Agenda for Sustainable Development https://undocs.org/A/RES/70/1

promoting the "geospatial approach," we can bridge the geospatial digital divide within countries and empower NGIAs to become leaders in combating climate change and place them at the heart of the data ecosystem required for the SDGs. This approach involves utilizing geospatial information to meet the ambition of the SDGs and build climate resilience, safeguarding vulnerable populations from further setbacks and protecting those at imminent risk.

V. Points for discussion

25. **The Committee of Experts is invited to:**

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

(b) Urge Member States to implement the SDGs Geospatial Roadmap;

(c) Note decision 54/101 of the Statistical Commission regarding the paper on 'Examples of the implementation of the SDGs Geospatial Roadmap: disaggregating the SDGs by geographic location'; and,

(d) Note and provide further inputs and guidance towards the next steps and elements regarding the background document entitled 'Geospatial Information and Climate Resilience – What Does UN-GGIM Do?', inclusive of the three future actions for the Committee's consideration.