UNITED NATIONS   **E/C.20/2020/9/Add.1**

Economic and Social Council

17 July 2019

Committee of Experts on Global Geospatial
Information Management
Ninth session
New York, 7-9 August 2019
Item 8 of the provisional agenda*
Integration of geospatial, statistical and other
related information

Integration of geospatial, statistical and other related information

Note by the Secretariat

Summary

     The present paper contains the report of the Expert Group on the Integration of Statistical and Geospatial Information for consideration by the Committee of Experts on Global Geospatial Information Management.

     At its eighth session, held in New York from 1 to 3 August 2018, the Committee of Experts adopted decision 8/108, in which it noted the valuable progress being made to further elaborate the Global Statistical Geospatial Framework and supported the direction and areas of focus for the current activities of the Expert Group, including to elaborate the five principles of the Framework. The Committee also endorsed the short- and longer-term statistical-geospatial interoperability projects identified by the Expert Group and encouraged Member States and other stakeholders, including standards experts, to participate in and contribute to those important elements of the programme of work of the Expert Group. In this present report, the Expert Group provides information on its recent activities, including the main outcomes of its fifth meeting held on the margins of the United Nations World Geospatial Information Congress in Deqing, China, in November 2018, the elaboration of the Framework, including global consultations conducted in that regard, and how the Expert Group is working to implement the Framework to support the 2020 round of population censuses and the 2030 Agenda.

---

* E/C.20/2020/1

I.   Introduction

1.   Pursuant to Statistical Commission decision 44/101, the United Nations Statistics Division (UNSD) established the Expert Group on the Integration of Statistical and Geospatial Information in 2013, comprising members of both the statistical and geospatial professional communities from Member States. The Expert Group determined its modalities and programme of work and has since reported back to both the Statistical Commission and the Committee of Experts at each of their respective annual sessions. The Expert Group's overall objectives and functions included "to pursue the implementation of the statistical-geospatial framework in the 2020 round of population and housing censuses with the understanding it would apply to other initiatives including other censuses, such as agriculture censuses, economic censuses, etc., and global initiatives such as the Post-2015 Development Agenda and Big Data". In addition, the Expert Group was tasked to "evaluate the statistical-geospatial framework developed by the Australian Bureau of Statistics and determine if and how this could be internationalised".

2.   The Global Forum on the Integration of Statistical and Geospatial Information, convened in New York in August 2014, identified that "there is an urgent need for a mechanism, such as a global statistical-spatial framework, to facilitate consistent production and integration approaches for geo-statistical information[1]". Accordingly, at its fifth session in August 2015, the Committee encouraged the Expert Group to develop the Global Statistical Geospatial Framework (GSGF) as a principles-based framework, developed from Australia's Statistical Spatial Framework. The five Principles of the GSGF were adopted by the Committee at its sixth session in August 2016. Following this, the Statistical Commission endorsed the five Principles of the GSGF at its 48th session in March 2017.

3.   At its eighth session in August 2018, the Committee of Experts adopted decision 8/108, in which it supported the further elaboration of the GSGF, specifically regarding its five Principles. The Committee also endorsed the short- and longer-term statistical-geospatial interoperability projects identified by the Expert Group, and encouraged Member States and other stakeholders, including standards experts, to participate in and contribute to this work, particularly to support the 2020 round of population censuses and the 2030 Agenda for Sustainable Development.

4.   This present report informs the Committee of Experts on the Expert Group's activities and progress since the eighth session. This includes the main outcomes of its fifth meeting held on the margins of the United Nations World Geospatial Information Congress in Deqing, China, in November 2018, and the elaboration of the GSGF. Of note, is the development and global consultation on the 'The Global Statistical Geospatial Framework' document, and the mechanisms used by the Expert Group to operationalise the GSGF to support the 2020 round of population censuses and the 2030 Agenda for Sustainable Development. The Committee of Experts is invited to take note of the report and to express its views on the adoption of the Global Statistical Geospatial Framework and the work of the Expert Group in facilitating the implementation of the Framework in support of the 2020 round of population and housing censuses and the 2030 Agenda for Sustainable Development. Points for discussion and decision are provided in paragraph 37.

---

[1] https://unstats.un.org/wiki/display/ISGI/The+Process+of+Developing+the+GSGF#_ftn3

II.   50th Session of the UN Statistical Commission

5.   At its 50th session, held from 5 to 8 March 2019 in New York, the Statistical Commission noted the report[2] of the Expert Group which: informed the Commission on the further elaboration of the five Principles of the GSGF into the 'The Global Statistical Geospatial Framework' document, and its role in supporting the wide range of implementation and adoption activities with respect to the Sustainable Development Goals and the 2020 round of population censuses; reviewed the Expert Group's short- and longer-term statistical-geospatial interoperability projects; and discussed the establishment of relationships with other relevant experts and processes within other areas of relevance, including disaster- and climate-related statistics.

6.   On the margins of the 50th session, the Expert Group convened a side event titled, "The Global Statistical Geospatial Framework"[3], to discuss an early draft of the GSGF document. This included presentations from Australia, Egypt, Mexico, Sweden, and the United Nations Economic Commission for Latin America and the Caribbean (UNECLAC). Attended by over 100 participants, the side event discussed national and regional implementation strategies and examples of good practices. The side event also offered an opportunity for the Expert Group to update the statistical community on its activities and further socialise the GSGF among Member States, as well as describe the process for developing and consulting on the elaborated GSGF.

III.   Fifth meeting of the Expert Group

7.   The fifth meeting of the Expert Group was held in Deqing, China, on 22-23 November 2018. The meeting was convened on the margins of the United Nations World Geospatial Information Congress (UNWGIC), hosted by the United Nations Department of Economic and Social Affairs (UNDESA) with the support of the Government of China, through the Ministry of Natural Resources and the Zhejiang Provincial Government. The convening of the meeting on the margins of the UNWGIC provided an opportunity to strengthen the connections of the Expert Group within the geospatial community.

8.   The primary aim of the Expert Group meeting was to finalise the review of the elaborated five Principles of the GSGF and lay the groundwork for the transformation of the five Principles into a framework for statistical-geospatial integration to support the wide range of implementation and adoption activities with respect to the Sustainable Development Goals and the 2020 round of population censuses. Tertiary objectives included: 1. reviewing the outcomes of the eighth session of the Committee of Experts; 2. the outcomes of the 50th Statistical Commission and the side event convened by the Expert Group; 3. discuss the Integrated Geospatial Information Framework (IGIF) and, inter-alia, its relationship with the GSGF; 4. discuss linkages with the Open Geospatial Consortium (OGC) Statistical Domain Working Group (Statistical DWG), the Inter-Agency and Expert Group on the Sustainable Development Goal Indicators Working Group on Geospatial Information (IAEG-SDGs: WGGI), and any other existing or upcoming work programmes of the Committee of Experts and/or the Statistical Commission; 5. consider the communication, promotion, and refinement of the GSGF; 6. consider resourcing options for Expert Group activities; and, 7. discuss the Expert Group's future work plan.

9.   The meeting was attended by 21 participants from: Australia, Brazil, China, Egypt, Germany, Kuwait, Mexico, Oman, Poland, Senegal, South Africa, Uganda, and the United

[2] E/CN.3/2019/31

[3] https://unstats.un.org/unsd/statcom/50th-session/side-events/20190308-1M-global-statistical-geospatial-framework/

Kingdom, and by representatives from ESRI, United Nations Population Fund (UNFPA), UNECLAC, United Nations Economic Commission for Africa (UNECA), and the Secretariat.

10.   The key matters discussed were:

(a)   **The GSGF.** The timeline for its consolidation and global consultation were discussed and agreed. The Expert Group agreed that it would seek to provide further material to support the GSGF's implementation. This would consider the interrelationships of other key work activities of the Committee and would aim to support the delivery of these parallel work activities, such as the IGIF. This would be pending the adoption of the GSGF at this ninth session;

(b)   **Progress reports from the five GSGF principle task groups.** Updates were provided by each principle task group. This included the finalisation of the task groups' work, with the Expert Group agreeing to consolidate the outcomes. This was achieved through a small task group consisting of the co-chairs of the Expert Group, Australia and Mexico, plus Germany, Sweden, Eurostat, and the Secretariat; who consolidated and refined the work of the five principle task groups into the 'The Global Statistical Geospatial Framework' document;

(c)   **The need to standardise definitions and vocabulary between the statistical and geospatial communities**. The Expert Group has compiled several common definitions[4] that support common statistical and geospatial vocabularies. The Expert Group welcomes contributions from Member States and the broader geospatial community to further enhance and expand this resource;

(d)   **Received reports from Expert Group members participating in other related activities**. This included updates on the formation of the OGC's Statistical DWG, the current activities of the IAEG-SDGs: WGGI, and how regional initiatives in Africa by UNECA (through its regional implementation of the GSGF), Europe by Eurostat and UNECE (through GEOSTAT3[5]), and Latin America and the Caribbean by UNECLAC (through the MEGA project[6]), are supporting statistical-geospatial integration; and,

(e)   **The need for resources.** The Expert Group considered the need to promote and raise awareness of its activities, including the translation of documents. The Expert Group invited and urged its members, Member States, and other potential providers of resourcing to support the promotion, translation, and technical assistance with respect to its work and activities. Moreover, the Expert Group highlighted the need to coordinate and collaborate on this work at a global and regional level; through UNSD the Expert Group, and UN regional bodies, respectively.

11.   The next meeting of the Expert Group was provisionally agreed, with the intention of holding the meeting on 9 to 10 October 2019 in Manchester, United Kingdom, hosted by the

---

[4] https://unstats.un.org/wiki/display/ISGI/Statistical+and+Geospatial+Vocabularies
[5] https://www.efgs.info/geostat/geostat-3/
[6] http://www.un-ggim-americas.org/en/contenido/GT-Integracion-de-Informacion-Estadistica-y-Geografica/pdf/Estandardization_MEGA_V10.pdf

United Kingdom, on the margins of the European Forum for Geography and Statistics Conference[7].

IV.   The Global Statistical Geospatial Framework

12.   The GSGF facilitates the integration of statistical and geospatial information. A Framework for the world, the GSGF enables a range of data from both the statistical and geospatial communities to be integrated. Through the application of its five Principles and supporting key elements, the GSGF permits the production of harmonised and standardised geospatially enabled statistical data. The resulting data can then be integrated with statistical, geospatial, and other information to inform and facilitate data-driven decision making to support local and national development priorities and global agendas, such as the 2020 round of population and housing census and the 2030 Agenda for Sustainable Development.

13.   The GSGF also acts as a bridge between statistical and geospatial professional domains, between national statistical offices and national geospatial information agencies, and between statistical and geospatial standards, methods, workflows, and tools.

14.   'The Global Statistical Geospatial Framework' is provided as a background document to this report. It is composed in three parts:

(a) **Part 1** provides a high-level description of the GSGF, including its data inputs, five Principles, four key elements, and outputs. This summary provides distilled information on the importance of geospatially-enabled statistical information and how to achieve its integration, and provides links to the Expert Group wiki that contains materials that will support implementation (that will increase over time);

(b) **Part 2** provides a detailed elaboration on the five Principles, providing further information and background on each of the Principles; and,

(c) **Part 3** consists of a series of Annexes that detail common terminology for the statistical and geospatial communities, standards and quality background information regarding interoperability, and further reading.

15.   In recognition of the changing ecosystem within which the GSGF now exists, the GSGF paper discusses the GSGF's role and relationship with respect to the broader information ecosystem. This includes the IGIF (detailed in a separate report at this session under agenda item 5), the High-Level Group for the Modernisation of Official Statistics, and the Inter-agency and Expert Group on the Sustainable Development Goals Indicators Working Group on Geospatial Information.

16.   It is also important to stress that the statistical and geospatial data used to create geospatially-enabled statistics should only be publicly released in a manner which complies with national privacy and confidentiality legalisation, and prevailing community expectations. The ability to identify private and confidential information may be prevalent within data when collected and securely stored but must be confidentialised to an appropriate degree when disseminated.

---

[7] https://www.efgs.info/

Elaborating the five Principles of the Global Statistical Geospatial Framework

17.   At the core of the GSGF are its five Principles. These Principles were adopted by the Committee of Experts at its sixth session in 2016 in making decision 6/107[8] and endorsed by the Statistical Commission at its 48th session in March in making decision 48/108[9]. Subsequent decisions by the Committee requested the elaboration of these Principles, as such the GSGF was developed. These five Principles are:

(a) **Principle 1: Use of fundamental geospatial infrastructure and geocoding.** Principle 1 focuses on creating infrastructure that enables the implementation and socialisation of the GSGF. This infrastructure supports the creation of high-quality, standardised location references such as a physical address, property or building identifiers, or other location descriptions, and ensures the accurate assignment of coordinates and standard grid references. The addition of a time and date stamp also places the unit in both time and space.

(b) **Principle 2: Geocoded unit record data in a data management environment.** Principle 2 supports the linking of each statistical unit record to a geographic reference (e.g. a coordinate or small geographic area) that will allow for statistics to be applied to any geographic context. This will support integration or linkage of data from other data sources and mitigate challenges that arise with new geographies or changes in existing geographies. A standards-based data management environment will ensure effective security, documentation and maintenance of the data.

(c) **Principle 3: Common geographies for dissemination of statistics.** Principle 3 determines definitions of geographic regions and aggregation/disaggregation of data to regions, enabling the consistency and comparability of integrated statistical and geospatial data. A common set of geographies ensures that statistical data is geospatially enabled in a consistent manner and is integrable at the aggregate level; and also ensures that users can discover, access, integrate, analyse, and visualise statistical information seamlessly into geographies of interest.

(d) **Principle 4: Statistical and geospatial interoperability.** Principle 4 enables greater standardisation and interoperability of data which will lead to improved efficiency and simplification in the creation, discovery, integration, and use of geospatially enabled statistics and geospatial data. This will increase the potential application of a larger range of data and technologies, and thereby enable a wider range of information to be available and accessible for use in decision making. It will also facilitate better cooperation between all stakeholders producing and using statistical and geospatial information.

(e) **Principle 5: Accessible and usable geospatially enabled statistics.** Principle 5 supports data custodians to release data with confidence, improve the discovery and accessibility of geospatially enabled statistics (particularly through promoting web services to provide machine readable and dynamic linkage to data), and to support analysis and evaluation of data in decision making.

18.   These five Principles are encapsulated within a framework that considers the input of statistical and geospatial information (including from fundamental, official, and

---

[8] E/2016/46-E/C.20/2016/15
[9] E/2017/24-EC/CN.3/2017/35

complementary sources), key elements (including standards and good practices, national laws and policy, and institutional collaboration), and the output of geospatially-enabled statistics that can be disseminated for analysis and improve data-driven decision-making.

Process of consultation

19.   At its fifth meeting, the Expert Group agreed to table the GSGF at this ninth session of the Committee of Experts, noting that the GSGF has had broad consultation and promotion through a series of national, regional, and international workshops and seminars since. These activities have socialised the GSGF amongst Member and Observer States, and regional bodies mandated to support the strengthening of statistical and geospatial systems at the national level.

20.   As a first step towards global consultation, the Expert Group undertook an internal consultation of the GSGF by its members, from 12 March to 5 April 2019. Following this, a virtual meeting was convened to discuss the outcome of the internal consultation with the content and structure of the GSGF being further refined.

21.   Following this refinement, on 17 April 2019, the Secretariat initiated a global consultation regarding the GSGF involving both the global statistical and geospatial communities at the request of the Expert Group. This included Member and Observer States, the United Nations system, and relevant international and regional entities. This process was concluded on 31 May 2019 to provide ample time for substantive responses and feedback to be made.

22.   This process of consultation was augmented by complementary initiatives to socialise and promote the GSGF. These included the side event on the margins of the 50th session of the Statistical Commission entitled the "Global Statistical Geospatial Framework" and the session "Statistical-Geospatial Integration for the SDGs and the 2020 Censuses"[10] at the UNWGIC.

Outcomes of the global consultation

23.   The outcome of the global consultation was overwhelmingly positive, with a total of 75 responses from 64 Member and Observer States, and three responses from regional entities. In many cases joint submissions were received from both National Geospatial Information Authorities (NGIAs) and the National Statistical Offices (NSOs). 31 responses were received from developed countries and 41 responses received from developing countries[11]. Specifically, 24 responses were received from Member State NGIAs. These responses ranged from full support to detailed comments, recommendations, and adjustments. All responses were considered, respected, and those assessed as relevant were incorporated into the GSGF. It should be noted that a number of the comments not addressed related to future material that will the support implementation of the GSGF. Amendments made to the document were mostly cosmetic in nature, with broad agreement on the technical substance and refinements made by the Expert Group, with feedback noting the urgent need to implement the GSGF and for implementation materials. The full list of respondents is provided in Annex I to this present report.

24.   This response exceeded the global consultation undertaken with both the global statistical and geospatial communities in 2016 to establish the five Principles of the GSGF.

---

[10] http://ggim.un.org/unwgic/nov19-parallel-Statistical-Geospatial-Integration-for-the-SDGs-and-the-2020-censuses/

[11] Following the M49 definitions of Developing- and Developed Countries: https://unstats.un.org/unsd/methodology/m49/

This consultation received 44 responses, 25 were received from developed countries, 18 from developing countries, and one from a regional statistical body. This further illustrates the improved engagement from Member States, in part due to continued outreach and promotion activities by the Expert Group, but also demonstrates the need for the GSGF, especially amongst developing countries as a mechanism to support attainment of national development priorities and global agendas.

25.   There is broad regional consensus regarding the adoption of the GSGF, with all regional committees having formalised working groups to further support and promote statistical and geospatial integration through the GSGF.

26.   The Committee of Experts is invited to consider and adopt the GSGF, as submitted as a background document to this present report, and to provide guidance to the Expert Group regarding its future work and activities.

The future of the Global Statistical Geospatial Framework

27.   'The Global Statistical Geospatial Framework' is intended to be a living document, under the stewardship of the Expert Group. The Expert Group intends to use its wiki[12] to continuously refine the GSGF, develop additional material to support national and regional implementation efforts, and provide a mechanism to support statistical and geospatial integration efforts.

28.   Discussions within the Expert Group, supported by additional comments received during the global consultation, have stressed the urgent need for implementation materials to support the implementation of the GSGF. These would include implementation guides and assessments to support countries in implementing the GSGF and share details on lessons learned at country- and regional- level implementations, good practices, standards development, and pathways of implementation.

29.   Efforts will be made to further promote and raise awareness of the GSGF in both the statistical and geospatial communities. This will primarily be conducted by learning and side events on the margins of relevant meetings and sessions, including by the Committee, the Statistical Commission, and other complementary initiatives.

V.   Other meetings of the Expert Group

30.   In addition to the physical meeting of the Expert Group in Deqing, China, the Expert Group has been conducting (approximately) quarterly virtual meetings via video conference. Alongside these regular meetings, ad-hoc meetings have been held to support the progression and development of the GSGF.

31.   At its virtual meeting on 12 February 2019, the Expert Group discussed its preparations for the 50th session of the Statistical Commission, the progress report regarding the consolidation of the GSGF was provided; and the internal consultation of the GSGF by the Expert Group was initiated.

32.   At its virtual meeting on 11 April 2019, the outcomes of the internal Expert Group consultation were discussed and a timeline for the global consultation of the GSGF was agreed.

---

[12]https://unstats.un.org/wiki/display/ISGI/United+Nations+Expert+Group+on+the+Integration+of+Statistical+and+Geospatial+Information

33.   The Expert Group will also convene an informal meeting on the margins of the ninth session and hold a side event "the Global Statistical Geospatial Framework" to further promote the GSGF amongst the geospatial community.

VI.   Recommendations for Consideration

34.   After over four years of development, the Expert Group is pleased to submit for adoption by the Committee of Experts, a document elaborating the revised and refined GSGF, which is provided as a background document to this report. Since its presentation to the Committee in 2016, the GSGF has been thoroughly reviewed, initially internally by the Expert Group and subsequently through a process of global consultation, involving an extensive consultation of both the statistical and geospatial communities. This includes a formal global consultation conducted by the Secretariat and through consultative events on the margins of the UNWGIC, the Statistical Commission, and other relevant statistical and geospatial events as detailed in this report.

35.   The five Principles of the GSGF have already seen adoption by Australia, Egypt, France, Mexico, New Zealand, Sweden, and others. Regional initiatives in Africa, the Americas, and Europe are also using the GSGF, while considering and incorporating regional conditions within its implementation. This offers a conducive environment for the gathering of good practices and implementation processes; some of these have been and will be shared amongst Expert Group members and with Member States as such will be added to the Expert Group wiki.

36.   The Expert Group aims to support the further development of the GSGF as a living document and augment it with an implementation guide to complement its implementation at the national and regional level. Through the Expert Group wiki, this will enable the consistent refinement of the GSGF, enable it to incorporate and reflect prevailing conditions and policies. This will ensure its applicability to national development priorities and regional and global initiatives post the 2020 round of population censuses, including the 2030 agenda for sustainable development, and foster statistical and geospatial integration.

VII.   Points for discussion

37.   **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 Expert Group;**

(b) **Express its views towards the adoption of the Global Statistical Geospatial Framework (GSGF) provided as a background document to this present report, noting that it has been developed and agreed by consensus through broad global consultation with Member States and related UN-GGIM instruments;**

(c) **Express its views for the Expert Group to continue its work to support the implementation of the GSGF, particularly the proposed implementation guide and supporting material for the GSGF, along with the Expert Group's short-term and longer-term statistical-geospatial interoperability projects;**

(d) **Consider and recommend options available to Member States and partners to actively support the work of the Expert Group in promoting and**

supporting the implementation of the GSGF, particularly through participation and resources; and

(e) **Provide guidance on steps to promote and socialise the GSGF, specifically with respect to key elements of the work programme of the Committee of Experts, such as the Integrated Geospatial Information Framework.**

Global Statistical Geospatial Framework
Respondents to the Global Consultation

Member States

1. Angola
2. Argentina
3. Armenia
4. Australia
5. Austria
6. Belarus
7. Belize
8. Bolivia (Plurinational State of)
9. Botswana
10. Canada
11. Chile
12. China
13. Colombia
14. Croatia
15. Cuba
16. Denmark
17. Ecuador
18. El Salvador
19. Estonia
20. Eswatini
21. Finland
22. France
23. Georgia
24. Germany
25. Greece
26. Honduras
27. India
28. Indonesia
29. Ireland
30. Italy
31. Jamaica
32. Kuwait
33. Lithuania
34. Mauritius
35. Mexico
36. Moldova
37. Myanmar
38. Namibia
39. Netherlands
40. New Zealand
41. Norway
42. Pakistan
43. Panama
44. Peru
45. Philippines
46. Poland
47. Portugal
48. Qatar
49. Romania
50. Saudi Arabia
51. Senegal
52. Serbia
53. Singapore
54. Slovakia
55. South Africa
56. South Sudan
57. Spain
58. State of Palestine
59. Sudan
60. Suriname
61. Sweden
62. Switzerland
63. United Kingdom of Great Britain and Northern Ireland
64. United States of America

Regional Organisations

65. Eurostat

United Nations System

66. UNECLAC
67. UNECE