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Technical expertise: geographical names data management

World Geographical Names database

Submitted by the UNGEGN Secretariat**

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World Geographical Names database

I. Introduction

- 1. The World Geographical Names database (WGND) of the United Nations Group of Experts on Geographical Names is a repository of the short and full names of countries (193 Member States and two non-member States with observer status) and their capitals and cities in a multilingual, multiscriptal and georeferenced format. Authoritative city endonyms are provided mainly by national names authorities, and sound files are being added to assist users with pronunciation. The database currently contains toponyms, including endonyms and exonyms, of features comprising more than 2,700 country names, some 12,000 names for upwards of 9,850 cities and more than 970 audio files. Toponymic data at the country level complement this information.
- 2. Initial efforts to develop the WGND were guided by UNGEGN's mandated decisions, including its decision 2/2021/2 of its second on 3-7 May 2021 and the prevailing guidelines of the UN. These include the principles of the Secretary-General's Data Strategy; compliance with the prevailing standards environment of web-based applications within the UN technical architecture; and the Administrative Instruction of the UN concerning the "Regulations for the Control and Limitation of Documentation Guidelines for the Publication of Maps" of 20 January 1997 (ST/AI/189).
- 3. The development of the WGND of applications provides the United Nations, Member States and the general public with an opportunity to, in both human- and machine-readable formats, the ability to analyze, integrate, disseminate and use authoritative geographic names. However the data within the WGND is not geographically complete and has other areas of potential improvement. While all UN Member States are included at the country level, the geographic coverage of cities is of variable quality, and this situation is further complicated by incomplete toponymic data for cities that are included.
- 4. The importance of managing geographical names through the WGND is not just an academic concern. The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) are highly dependent on standardized geographical names. While the SDGs are global, their achievement largely depends on local action, emphasizing the importance of globally available and consistent information on geographical names. Local governments, communities, and individuals play a critical role in implementing and localizing the SDGs by tailoring them to the specific context, needs, and priorities of their local areas. Three SDG indicators directly necessitate reporting of SDG indicators at the city level: SDG 11.2.1¹, SDG 11.6.1², and SDG 11.7.1³; yet almost all indicators are relevant at the local city level, underscoring the importance and the localization agenda, at the global level too.
- 5. Today, guided by UNGEGN Decision 3/2023/18, the WGND is in the final stages of integrating with several other data sources. By comparing with authoritative datasets. Through integration with the United Nations Demographic Yearbook⁴ (an additional 2,735 cities are to be incorporated, offering toponyms in English and French) and the United Nations Gazetteer (offering roughly an additional 5,550 cities). This information complements authoritative Country Names across languages and scripts. To date, the Secretariat is working to integrate upwards of 9,850 geographies at the city level (9,850 individual cities) alongside 193 Member States of the UN.

¹ Specifically, the data series "SP_TRN_PUBL" - Proportion of population that has convenient access to public transport (%)

² Specifically, data series "EN REF WASCOL" - Municipal Solid Waste collection coverage, by cities (%)

³ Specifically, the data series "EN_URB_OPENSP" - Average share of the built-up area of cities that is open space for public use for all (%)

⁴ The Demographic Yearbook, a publication complied by UNSD since 1948 which collates authoritative data from over 230 National Statistics Offices on population size and composition, births, deaths, marriage and divorce, as well as respective rates, on an annual basis. https://unstats.un.org/unsd/demographic-social/products/dyb/

II. Developing the Governance for the World Geographical Names Database

6. The governance of the WGND is proposed to be focused within the UNGEGN Working Group on Geographical Names Data Management, overseen by the UNGEGN Bureau and Secretariat, with additional and thematic input from UNGEGN Working Groups (lead by their Convenors/Coordinators) as necessary, and is supported by Member State engagement. A background document (GEGN.2/2025/21/CRP.21/Add.1) "Towards a Governance Structure for the World Geographical Names Database", discussing this governance structure, is provided to the Group of Experts for its consideration.

III. The Data of the World Geographical Names Database

- 7. In the continued revival of the database, the Secretariat has made progress in resolving linguistic, geographical, and data quality issues as it integrated data from authoritative sources. The Secretariat is in the process of preparing a report entitled "World Geographical Names Database: Data Review" that will provide a detailed overview of data within the database, elaborating on the present geographical extent of data. The Secretariat will seek to convene a virtual webinar in the coming following the 2025 session of UNGEGN.
- 8. In the agglomeration of toponymic data to be input into the WGND, in implementing Recommendation 2 of the 2023 Session (E/2023/84), the Statistics Division, as the Secretariat of UNGEGN has collaborated with the Geospatial Information Section of the Office of Information and Communications Technology review existing data within the World Geographical Names Database and work with Member States to resolve linguistic, geographical and other data quality issues. The outcomes of this ongoing work have led to the integration of a total of 9,850 geographies at the city level (9,850 individual cities) into the WGND, yet while these geographies are included in the WGDN, it is notable that the linguistic and other attribute information that may be considered desirable to be linked with this data is presently absent.
- 9. The Secretariat is presently investigating the possibility of augmenting linguistic data with data from the UN Terminology Database (UNTERM) as a multilingual database of official terminology relevant to the work of the UN. This would provide some partial coverage data from the six official languages of the UN. This is one mechanism that could be used to reach geographic and linguistic completeness and capture all cities.
- 10. Further, in some instances, the data contained within WGDN are not provided by National Names Authorities; they are drawn from other authoritative sources such as the United Nations Gazetteer or from National Statistical Offices (if drawn from the SDG Database or the Demographic Yearbook) and thus are conferred by a level of authority. Yet, the Secretariat does not have all the answers in its vast archives. It is Member States that lead the work of UNGEGN, and it is Member States that are best placed to provide the data managed within the WGN.
- 11. In this regard, the Secretariat is suggesting that in the forthcoming intersessional period, Member States provide their geographical names data to the Secretariat in all dimensions of the WGND. A background document (GEGN.2/2025/21/CRP.21/Add.2) "WGND Data Collection" outlines metadata to support the integration of data within the WGND and Member States are welcomed to provide their toponymic data through this form during the coming intersessional period. Further, the Secretariat will conduct a series of awareness activities through regionally focused webinars to raise awareness of the WGND, geographical names and other relevant matters in the coming year.

IV. Development of Unique Identifiers

- 12. The Secretariat notes the proposal of Germany detailed within the report on Concept of a globally consistent universally unique identifier for cities (<u>GEGN.2/2025/84/CRP.84</u>) and supports the intent of this paper, noting that unique identifiers are a vital resource for ensuring consistency within geographic databases.
- V. Enhancing and advancing geographical names capacity: Linking Data through semantic web technologies, integrating with other types of geography, and operationalization of the Global Fundamental Geospatial Data Theme "Geographical Names"

Linked Open Data

- 13. Linked Open Data (LOD) refers to a practice of publishing structured data on the web in a way that allows it to be interconnected with other data. This involves adhering to certain principles, such as using standard formats like RDF (Resource Description Framework), assigning URIs (Uniform Resource Identifiers) to data items, and linking data to other related datasets. LOD allows different data sources—often from diverse domains—to be combined and enriched, which provides richer context and enables more advanced data analysis and applications. For example, LOD allows linking data about geographical locations, government statistics, and historical information, making them easily accessible in one combined dataset.
- 14. The CALIPER project⁵ provides structured methodologies and standards to classify all forms of data, inclusive of geographical names, cities, and places. By facilitating the consistent and precise categorization of geographical entities, CALIPER supports interoperability and enriches LOD with contextually accurate, machine-readable geographic data. This framework is particularly valuable for the Semantic Web, where precise linking and contextual data are paramount for intelligent systems to understand relationships between places, names, and associated attributes.
- 15. In the coming intersessional period, the Secretariat intends to explore the possibilities of establishing a geographical names ontology within CALIPER, to enable the exposure of the WGND as Linked Open Data.
- 16. Moreover, enabled by the United Nations' Regular Programme for Technical Cooperation, the Secretariat with the support of the Working Group on Geographical Names Data Management, the Working Group on Funding and Training Courses in Toponymy, and the Working Group on Romanization Systems, the Secretariat is investigating the possibility of organizing a workshop entitled "Linking Geographic Names, the Disagregation and Localisation of SDGs, and the Semantic Web". As of the time of publication, the location for this workshop is yet to be finalized, but the Secretariat is presently in discussions with the United Nations Regional Commission for Latin America and the Caribbean on the possibility of convening this 4-day workshop over the week of 11-15 August 2025 in Santiago, Chile.

The collection and management of other geographies

17. The Second Administrative Level Boundaries (SALB) programme objective is to promote accessible, interoperable and global data and information on subnational units and boundaries, or common geographies, for better decisions, stronger support to people and planet and to monitor the Sustainable Development Goals. The SALB programme, in close collaboration with the National Geospatial Information Authorities of each Member States of the United Nations, aims to make available a global repository of authoritative information and geospatial data about the administrative units structure of

⁵ See: https://unstats.un.org/bigdata/events/2024/conference/agenda/day2-sessions/knowledge-commons/presentations/CarolaFabi final 2024 06 11 UN Big Data Conf Caliper v3.pdf

countries down to the second subnational level, and through time. Specifically SALB objectives are to collect, maintain and share: 1. Contact information of the National Geospatial Information Authority responsible for administrative units and boundaries; 2. Geospatial data for administrative units and boundaries for first and second level below national, at 1:1 million scale; and 3. Historical tables providing changes of national administrative units and names for the first and second administrative boundary levels. In this regard, there is a wealth of toponymic information contained within these administrative boundaries, at a different geographic level in-between cities and countries. There is also a historical dimension that could be further explored.

- 18. The revitalization of the Working Group on Geographical Names as Cultural Heritage (GEGN.2/2025/31/CRP.31) highlights many opportunities for the management of toponymic data. As this Working Group is working to enhance its working modalities, the Secretariat looks forward to beginning discussions as to how the WGND can be leveraged to support the management of cultural, historical, and cultural geographical names data. In this regard, additions to the outlined metadata for additional geographies could be considered and discussed within the Working Group on Geographical Names Data Management.
- 19. The Secretariat welcomes discussions with Member States and other stakeholders on how other geographies can be included within the WGNDs, but notes that due to the present resourcing of the Secretariat (as discussed GEGN.2/2025/5/CRP.5), the mobilization of resources and collaborations will be necessary to fully realize the potential of the WGND.

Operationalization of the Global Fundamental Geospatial Data Theme "Geographical Names"

- 20. The Global Fundamental Geospatial Data Themes are a set of 14 key data themes⁶ identified by the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM). These themes are intended to be essential for building and maintaining a robust geospatial information infrastructure. They support various global agendas, including the SDGs. One of the names, Geographical Names, is of great relevance to the WGND, as the internationally agreed repository of the short and full names of countries (193 Member States and two non-member States with observer status) and their capitals and cities in a multilingual, multiscriptal and georeferenced format.
- 21. It is in this regard, that the Secretariat, with the support of the Working Group on Geographical Names Data Management is taking active steps to operationalize the WGND as a practical means of operationalizing the "Geographical Names" theme for the United Nations. Through its public and open API7, the opportunity arises for the data of the WGND to be consumed and used within the One UN Geospatial Situation Room⁸ (established by UN-GGIM Decision 12/103). The Secretariat intends to collaborate further with the United Nations Geospatial Network, as the custodian of the One UN Geospatial Situation Room in the coming intersessional period and report back to the Group of Experts at its forthcoming 2027 session.

VI. Summary

22. In summary, the intersessional period has seen the WGND make some significant progress in terms of its geographic scope, through collaborating with various functional groups of the Group of Experts, has developed metadata for the collection of data and a governance mechanism. In working to resolve

⁶ Global Geodetic Reference Frame (GGRF), Addresses, Functional Areas, Geographical Names, Land Parcels, Physical Infrastructure, ,Transport Networks, Buildings and Settlements, Elevation and Depth, Geology and Soils, Land Cover and Land Use, Population Distribution, Orthoimagery, Water

⁷ UNGEGN WGND API: https://ungegn-api.azurewebsites.net/swagger/index.html

⁸ One UN Geospatial Situation Room: https://oneungeospatial-situationroom-ungis.hub.arcgis.com/

linguistic, geographical, and data quality issues while integrating data from authoritative sources, the WGND now manages roughly 9,850 city-level entries, with significant scope to improve the linguistic and scriptural data associated with these geographies.

- 23. As we look to the future, dependent on the opportunities of further resource mobilization, the opportunity exists to consider how the WGND should expand beyond city names to include other geographical entities like subnational boundaries, historical data, and cultural heritage names, supported by collaborations such as the SALB programme and the Working Group on Geographical Names as Cultural Heritage, among other working groups. The matter of resource mobilization is of paramount concern towards the ability of the Secretariat to expand the functionality of the WGND; the Group of Experts is urged to identify additional sustainable funding and partnerships as a vital means of maintaining and expanding the WGND. These expansions could include more types of geographies in the WGND, beyond cities to administrative units and culturally significant names, but emphasizes that scaling this work requires additional resources and strategic collaboration.
- 24. As part of parallel efforts, the Secretariat aims to publish the data contained within WGND as Linked Open Data (LOD) using frameworks like CALIPER to build a geographical names ontology and the Secretariat looks forward to providing further information on this workshop when it is available, on the report of the Group of Experts. Further, through its efforts, the Secretariat is looking to position the WGND as a practical mechanism to operationalize the "Geographic Names" Theme of the Global Fundamental Geospatial Data Themes. Through a public API, WGND data could feed into platforms like the One UN Geospatial Situation Room, enhancing UN system-wide geospatial capabilities.
- 25. The Secretariat looks forward to greater engagement with Member States in the coming intersessional period, especially regarding the integration and management of data within the WGND.

VII. Points for Discussion and Decision

- 26. The Group of Experts is invited to:
 - (a) Note the progress of the Secretariat in its continued efforts to redevelop and operationalize the World Geographical Names Database;
 - (b) Participate in the work of the Working Group on Geographical Names Data Management and, through the Working Group, provide comment on the proposed governance structure for the World Geographical Names Database;
 - (c) Submit updates on their national geographical names at the city level to the Secretariat;
 - (d) Note the efforts of the Secretariat to mobilize resources to develop geographical names capacity and to seek to assist the Secretariat in this regard;
 - (e) Highlight their interest in participating in a workshop on "Linking Geographic Names, the Disaggregation and Localisation of SDGs, and the Semantic Web".