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Technical expertise: Geographical names data management

Volunteered geographic information and linked open data in national geographical names standardization

Submitted by the Netherlands (Kingdom of the) **

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Introduction

The use of new techniques in geographical names data management is rapidly evolving. In the past decades, various developments have had their impact on data collection, data maintenance and data supply. Two important aspects of data management that have been addressed by UNGEGN in its Strategic Plan and Programme of Work 2021-2029, are the use of volunteered geographic information (VGI) and linked open data (LOD). Under strategy 1: Technical expertise, action item 1-II-6 is included with the specific aim to "*Examine processes and recommend good practice (...) for the reuse and validation of volunteered geographic Information, crowd sourced data and Linked Open Data (LOD) as part of national geographical names standardization work.*"

This paper summarizes the VGI and LOD activities that have been reported to UNGEGN during the last 3 sessions, in 2019, 2021 and 2023.

Volunteered geographic information

The use of crowdsourcing and VGI to collect and maintain geographical names data is strictly speaking not a new phenomenon. In many cases the 'traditional' field collection of geographical names by governmental agencies and for scientific research was and is dependent on local volunteered informants. The further development of the internet in the 2000s opened up possibilities for crowdsourcing on a large scale, with Wikipedia and OpenStreetMap as two well-known examples that have started in this period.

Obviously, attention for VGI within UNGEGN dates much further back than 2019. For practical reasons this overview is limited to reports on VGI submitted to the last 3 sessions.

A large number of countries have reported on crowdsourcing or VGI initiatives and activities. Most examples can be categorized as either using VGI for data collection or as feedback for data update or improvement. These include:

- Croatia: Feedback system for the register of geographical names (GEGN.2/2019/51/CRP.51).
- Indonesia: Crowdsourcing module in the geographical names web application SINAR as well as cooperation with mapping communities to collect geographical names (GEGN.2/2021/34/CRP.34, GEGN.2/2023/41/CRP.41).
- Iran: User feedback system for the national geographical names database (GEGN.2/2019/27/CRP.27).
- Latvia: Crowdsourcing website for the place names database (GEGN.2/2019/81/CRP.81, GEGN.2/2023/79/CRP.79).
- Lithuania: Crowdsourcing platform to collect missing names in the geographical names data set (GEGN.2/2021/CRP.110, GEGN.2/2023/CRP.28).
- Netherlands: Project with historical societies to check, verify and update geographical names in the topographic database (GEGN.2/2019/80/CRP.80, GEGN.2/2021/65/CRP.65).

In addition, Denmark (GEGN.2/2023/64/CRP.64) and Sri Lanka (GEGN.2/2019/CRP.101) reported about crowdsourcing geographical names data with local governments. Since this type of crowdsourcing involves civil servants rather than volunteers, it is not an example of the use of volunteered geographical information.

Some specific examples of VGI activities were reported by the following countries:

- Austria: Registration of crowdsourced field names in Tyrol as part of the intangible cultural heritage (GEGN.2/2019/66).
- Cameroon: Plan for participation in OpenStreetMap to add African neotoponyms (GEGN.2/2019/CRP.129).
- Iceland: Crowdsourcing project to geolocate place names from archival records (GEGN.2/2023/56/CRP.56).
- Slovenia: Online survey to find a new name for a mountain pass (GEGN.2/2023/93/CRP.93).

Although the examples vary greatly in character and are not all described in equal detail, as far as the results of the activities have been reported the use of VGI makes a positive contribution to the data management of geographical names.

Linked Open Data

The introduction of linked open data as a way of publishing and providing geographical names data is a more recent development, coinciding with the extension of the semantic web. In the course of the 2010s the first countries were able to publish their geographical data as linked data. The potential of LOD within geographical names data management was first mentioned in reports to the 2019 UNGEGN Session, and before that during the UNGEGN scientific symposium in Brussels in 2018. As an introduction to the subject, a workshop on linked data was held as a side event during the 2019 session. The Group of Experts decided in the Report of the 2019 Session to consider linked data as a method of data provision for the future.

For the 2021 UNGEGN Session several reports discussed linked data developments:

- Australia: Linked Data considerations for geographical names standardization (GEGN.2/2021/6/CRP.6), with examples and the status of linked data implementation in Australia, Finland, Germany, the Netherlands and New Zealand.
- Australia: Linked Data implementation (GEGN.2/2021/25/CRP.25).
- Netherlands: Topo Names Finder web application (GEGN.2/2021/69/CRP.69) using a linked open data set of the Key Register Topography of the Netherlands.
- Norway: New National Geographical Names Archives Service (GEGN.2/2021/12/CRP.12) using linked data technology.

In 2022 a webinar on Linked Open Data was organized by UNGEGN, with presentations from Germany, the Netherlands and Norway.

During the 2023 UNGEGN Session reports on linked data were presented by:

- Australia: Linked open data developments within the United Nations Group of Experts on Geographical Names (GEGN.2/2023/75/CRP.75)
- Germany: On geographical names data modelling and transfer related standards, manuals, or guidelines (GEGN.2/2023/99/CRP.99)
- Netherlands: Availability of Dutch geographical names as linked data (GEGN.2/2023/63/CRP.63)
- UNGEGN Secretariat: World Geographic Names Database (GEGN.2/2023/111/CRP.111)

The examples of linked data implementations and the first LOD use cases show that this technology is a valuable addition to the spectrum of data publication methods, allowing users to link geographical names data directly to other data sources and perform powerful data queries and analysis across multiple data sets.

Points for discussion

The Group of Experts is invited to:

(1) Take note of the efforts made by member states and UNGEGN to implement VGI and LOD in geographical names data management;
(2) Consider the use of VGI and LOD in their country, if they have not done so yet; and,
(3) Report on VGI and LOD use cases in their country to upcoming UNGEGN Sessions.