Geographical names: what do they mean to us? Are they important for national geospatial infrastructures and for cultural heritage?

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Aims today

• What do we mean by “geographical names”, “toponyms”, “standardization”?
  – What is it? Who does it? Why do it?

• What are some of the benefits of names standardization?
  – For spatial data infrastructure
  – For other reasons

• What about Africa?
Referring to places and features

• By latitude and longitude
  – or other world rectangular grid (military/civilian)

• By description
  – 18 km SW of Nairobi
  – administrative capital of particular region
  – at crossing point of two roads
  – as particular activity centre – market town

• By number …. e.g. Lake 1, Lake 2, etc.

• By name !
  – in combination with locational information
Implications

- People use names in everyday discussion
- Names are used in books, atlases, school texts, maps, road signs, timetables, media ...
  - paper, digital, on physical objects
- People search for other information and link information often through names ...
  - indexes, gazetteers, on Google, Google Earth
  - paper, on-line, through databases
• Logical and most useful if:
  – Spellings are clear, consistent, unambiguous
  – A name is clearly ‘tied’ to a location
  – Difficulties with what names are correct are sorted out
  – These names are recorded, stored and are easily available to governments and the public
  – Everybody can use the same set of names to communicate
“Geographical name”

• UNGEGN Glossary (2002):
  - name, geographical
    “name applied to a feature on Earth”

(usually in English = “toponym”, although this can include names on other planets)

(place name = toponym

or = name of populated place)
What types of places/features?

- Populated places / administrative areas / geographical features
- Land / water
- Offshore features – water / underwater?
- Names within urban areas?
  - streets; buildings; parks?
- Changing or temporary features?
  - winds; open water areas in sea ice; dunes?
“Standardization”

• UNGEGN Glossary:
  – *standardization, geographical names*
    “The prescription by a names authority of one or more particular names, together with their precise written form, for application to a specific geographical feature, as well as the conditions for their use.”

• Authority
  – apply some official status to names – written form
  – how name is applied
  – how used
  – romanization (?)
Names and our expectations

- Communication
  - Verbal and written in our own language

- Technical reference
  - Clear use on maps, timetables, etc.

- Preservation
  - Aspect of our history and culture
  - accurate / current (authoritative / reliable)
  - systems of names for a region or country
Mozambique – cards to database
Geographical names database

• Name records must be geo-referenced and will contain a variety of attributes
  - unique identifier for name and/or feature
• Aim to collect the information once for national use – avoiding overlap
• Develop to international standards
Data fields (elements)

- Toponym
- Variants
- Feature type
- Administrative unit
  - 1st and 2nd levels
- Geographical coordinates
  - What to record?
    - latitude and longitude
  - How to select coordinates?
- Location narrative
- Map sheet references
- Status of name
- Date of approval of name
- Data source
- Other fields?
  - geodetic reference
  - language
Mozambique – feature types

• Scheme created when card records put into a database (Sistema de Gerência de Topônimos Moçambique)
  – e.g. província, distrito, posto, localidade, distrito urbano, vila, sede, cidade, povoação, bairro ...
  – e.g. escola, alfândega, apeadeiro, casa, farol, régulo, posto sanitario, monumento ...
  – e.g. rio, lagoa, lagoa pequena, baixa, ponta, dunas, salina, banco rochoso, savana, praia, garganta ...
  – e.g. floresta, plantação, reserva, acampamento ...
Distribution of authorized names
...database, map, gazetteer

Mongolia
Canadian Geographical Names Data Base

- Some 500,000 records for places and features across Canada – recognized by the Board
- Data supplied primarily by provinces/territories for this central database, available on the web
- Digital database from card files in the 1980s (before digital mapping)
- The source of toponyms for federal maps and charts (paper and digital)
Canada – toponymy for 1:50,000 maps

- At present text preparation and placement takes 70% of carto work for map
- Use extraction of Canadian Geographical Names Database (CGNDB), and hard copy of map sheet + other documents
- Locate each named feature on map and delineate; research if necessary

- Features crossing map edge are ‘tied’; finished map sheet scanned and georeferenced for Raster Amendment Map
- Used for digital compilation; in GIS named features matched to vector form and tagged to CGNDB key
- Map Generator identifies font, point size, layout, text placement (50-80% success – so edit check)
National spatial data infrastructures

- SDI, NSDI, GSDI
- Growth in use of geo-referenced data for GIS and as a tool to support other activities
  - Use of geo-information in industry, transportation, banking, communication ...
  - Climate change, natural disasters, natural resource management, sustainable development – common issues requiring regional / global handling
  - Isolated “islands of geo-information” must be integrated into a geo-information archipelago where data sharing, data exchange and interoperability can be easily implemented (SEASC 09)
Canadian example

- CGDI ... “Geobase” ... federal, provincial and territorial commitment
  - Elevation data
  - Geodetic control network
  - Geographical names
    - (‘current’ subset of CGNDB)
  - Administrative boundaries
  - National road network
  - Satellite imagery
  - National hydrographic network
  
  Quality
  No cost
  Can redistribute
  Authoritative sources
  Standards for content and format
Canada - examples

• Layers of data integrated for purposes of research and enhanced planning
  – e.g. in health, environment issues, services, aboriginal communities ....

• PEI ... toponyms and road network .. for winter snow removal and sanding operations

• Nine Cree nations of Quebec for competing land use, cabins/traplines vs. snowmobile trails, tourism/outfitters camps and permits
Example – Red River floods
Red Cross – Fargo, US

- Red River Valley
- Floods
- Road closures
Earthquake vulnerability – Ottawa, Canada

Last 5 years – 0.4-5.4
British Columbia – Nisga’a names (Canada)

BCGNIS Query Results

<table>
<thead>
<tr>
<th>Official Name</th>
<th>Pronounced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gîwinksılıḻ̓w</td>
<td>“GIT-win silk”</td>
</tr>
</tbody>
</table>

Feature Type: Community

Latitude: 55°11’30”

Longitude: 129°13’00”

Position at: POPULATION CENTRE

Clan/Team Map: 103/25

Relative Location: N side of lower Nass River, below Kšî St’iiks (Treat River), Cassiar Land District

Return all features within 5km proximity

View geographical name location on 1:250K map sheet

Audio Accompaniment

You will need

Origin Notes and History


Sources: BC place name cards, or correspondence to/from BC’s Chief Geographer or BC Geographical Names Office

Spelled Extravanish on Geological Survey sheet 69A, Route Map of Part of Nass River, 1912; numerous other spelling variations throughout the years, including Gîwinksılıḻ̓w and Gîwinksılıḻ̓w.

Sources: BC place name cards, or correspondence to/from BC’s Chief Geographer or BC Geographical Names Office

Gîwinksılıḻ̓w means “people of the lizard’s habitat” [Gîw people of, -iis (derived from -iis woulda) - ̓̊l̓̊-a (situated, or inhabited by; -iisal̓̊-salama) (salamander)] The salamander, a lizard-like animal, once inhabited the bay area of the community, however, in the 1700’s a volcanic eruption caused lava flows to bury the two neighboring communities of Wa Lax K’abat and Lax K’ak’; since that time the kūl̓a (salamander) has either disappeared from the area or become extinct.

Sources: Nisga’a Tribal Council / Aynsil Nisga’a Department, Aynsil BC

Done

http://srmwww.gov.bc.ca/bcnames/g2_nl.htm
Geographical names in SDI

- Vital locational component for inclusion in all georeferenced data
  - Pali Lehohla re statistics/census and names
- Direct and intuitive point of access
- Help integrate data sets to provide powerful decision-making tools
- Necessary for presenting practical results of spatial data analysis and interpretation, planning and provision of emergency and humanitarian aid
Benefits of standardized names?
Benefits of standardized names?

- **UNEGGN brochure … several languages**
  - Advantages of clarity and consistency
Technical benefits

• Production of maps and atlases
• GIS and spatial data infrastructures
• Search tools on the Web
  – UNGEGN brochure: “Geographical names as vital keys for accessing information in our globalized and digital world”
  – Have a names register that can be used consistently
• Onboard navigation systems; unique Internet addresses; presentation of data analysis …
Economic benefits

- Government using one standard registry of names
- Transportation services, delivery and postal services – loss of time and materials without clear names references
- Developing national planning strategies; routing in trade and commerce; urban and regional planning; encouraging tourism; promotion of countries by the media
Social benefits

• Expression of our identity ... and standardized names help in effective communication
• Reference points in laws and regulations of society
• Exact and available toponyms are essential in emergency services – humanitarian aid, search and rescue, warning of natural disasters

• Environmental management; modelling for climate change vulnerability ...
Cultural benefits

• An important part of our language and heritage
  – Recording names helps to preserve our heritage
  – Toponyms provide a link to our history
• Oral tradition – today the recording of toponyms becomes essential for future generations
• Census data – clear names essential
• Of note:
  – 1988, Québec, Canada … training course … recognizing toponyms as a national treasure could the development of a standardization process
  – UNESCO – intangible cultural heritage
Benefits – example of UNOCHA

• United Nations Office for the Coordination of Humanitarian Affairs (OCHA)
  – Earthquake in Pakistan, 2005
    • Problem of delays in providing assistance to remote villages
    • Difficult to obtain - standardized names, coordinates of villages, gazetteers, population statistics, maps
  – Java, Indonesia, earthquake, 2006
    • Aid progressed rapidly … maps, standardized names integrated into GIS, easily available
  – Need for cooperation and move towards a global toponymic database
Benefits: example of China

- China
  - growth of cities … new urban areas
  - more than 20,000 new urban names needed every year
    (training to 400 people in 2005 to improve city name planning)

- Problems in towns with no street names?
  - Development of GIS for service infrastructure
    - (road, rail, water, sewer, electric power, gas lines)
What about Africa?

53 countries
Some are small islands
Many have low financial resources
Questions of government stability
Some with viable mapping agencies, statistics departments, national organizations for infrastructure and toponymic databases
Outstanding questions

• Duplication of names in an area
  – Confusion of address for emergency services
    • led to wasted time and loss of life

• Delivery services
  – More efficient with clear and unambiguous place names
    • savings of time and money

• Name changes
  – Lack of information causes confusion in communication (e.g. airline/railway/bus timetables)
Felicia Akinyemi, Nigeria cited some difficulties in West Africa (UNGEGN Bulletin)

- Fragmentation
  - colonial languages, forming stronger ties than proximity
  - pressures of these ties (e.g. education systems) not favour standardization
  - poor communications (now cell phones)
  - need better integration of WA countries

- Hundreds of traditional languages spoken across country boundaries
  - Nigeria >400; and dialects (e.g. Yoruba >300)
  - tribal loyalty (split across countries) often > national loyalty

- Places: >1 name, duplication, different pronunciations, variant spellings

- Names mostly for mapping; scale dependent collection
  - places of historic/cultural, important to national identity could be omitted

- Benefits of a country’s toponyms not really recognized
  - Need to create awareness, and tie in with ECOWAS - based on national identity, spatial data infrastructure, trade and commerce, tourism
Along the route to political and economic maturation, the place of geographical nomenclature in cartography will constantly need revision:

- Political players introduce their own toponyms, uprooting or modifying those laid down by their predecessors to suit their own philosophies and practices.
- Provisional names become entrenched and ‘eternal’ names are replaced.
- Changes will continue with unstable politics, use of exonyms and encroachments on African culture.

Updating problems for countries that before independence relied on foreign technical aid for surveying and mapping; map sales problems

Toponyms approved by national committees – not always accepted

Cartographic confusion between conventional and standardized names

- Misinterpreted African languages led to badly spelled names on colonial maps

Relevance of toponymy not generally appreciated
UNEGGN’s Task Team for Africa

- Geographical names included on the agenda of CODI V organized by ECA in 2007
- Participation in GIS Africa (Burkina Faso, 2007)
  - to be included in future GIS Africa conferences
- Cooperation with AOCRS has resulted in support and organization of training
  - Tunis, Ouagadougou, Nigeria
- Efforts to re-invigorate African divisions of UNEGGN
  - West, East, Central, South + Arabic, Dutch- and German-speaking, French-speaking + (new) Portuguese-speaking
- 25th UNEGGN being held in Africa

Since 2007, revitalization process in Africa to assist with geographical names standardization

(Brahim Atoui)
Other progress

- Other endeavours of a technical / GIS nature:
  - ECA … EthioGaz/AfricaGaz and database
  - ICA, FIG, ISPRS etc. joint group monitoring advances in Africa
  - Websites providing links to national mapping agencies in Africa (through UN-SALB and ICA)
  - CODIST-I in Ethiopia last week
  - AfricaGIS
Benefits of standardized names
distribution by: Google / Google Earth

- Influence on globalization
  - Internet
  - Google / Google Earth

- UNGEGN - collaborate with Google
  - Use toponyms correctly
  - Of economic interest for every country to publicize their toponyms (standardized) via Google
  - Millions of internet users can access the data