Geographical Names: Detailing Map and Enhancing GIS

Zainal A MAJEED, MALAYSIA

SUMMARY

The necessity of having geographical names is to match geographical data. Names on points, lines and polygon data in GIS and map present important value for readers and GIS users to capture the spirit of the data. When we look for location and places we use names and the names depicts the whole picture in term of spatial and attributes. Basically the primary access to spatial information is via geographical names. In GIS, querying, buffer and overlay operations on the basis of named objects are possible on the basis of place name standardization. Malaysia participated actively in the geographical names forum. Geographic name management is much complex as it involves different languages, culture and scripts. No one can be an expert in geographical names from all the languages that are spoken over the world, or in all national names practices. Determination and updating of geographic names has been discussed dynamically in the GIS world and has created researches and reports that are deliberated in the United Nation under the United Nations Group of Experts on Geographical Names (UNGEGN). The paper tends to discuss the efforts and coordination that have been taken through the National Committee on Geographic Name in Malaysia. The toponymic guidelines for map and other editors for MALAYSIA has been tabled and edited with the help of UNGEGN toponymic guideline coordinator. The guideline will be highlighted in the presentation as an awareness because the use of toponymical guidelines implies some knowledge of the language, culture, script that is valuable to be debated. Apart from that, treatment will be given regarding the Geographical Names Database (MyGeoname) which is a geographical names data bank that stores names, locations, historical backgrounds and gazette notifications. It is an authoritative record that is available for government and public use.

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1. INTRODUCTION

The necessity of having geographical names is to match geographical data. Names on points, lines and polygon data in GIS and map present important value for readers and GIS users to capture the spirit of the data. When we are required to look for location and places we use names and the names depicts the whole picture embedded with spatial and attributes. Basically the primary access to spatial information is via geographical names. In GIS, querying, buffer and overlay operations on the basis of named objects are possible on the basis of place name standardization. Malaysia participated actively in the geographic name standardization forum. Geographic names management is much complex as it involves different languages, culture and scripts. No one can be an expert in geographical names from all the languages that are spoken over the world, or in all national names practices.

Determination and updating of geographic names has been discussed dynamically in the GIS world and has created research and report that are deliberated in the United Nation under the United Nations Group of Experts on Geographical Names (UNGEGN). The paper tends to discuss the efforts and coordination that has been taken through the National Committee on Geographic Name in Malaysia. The toponymic guidelines for map and other editors for MALAYSIA has been tabled and edited with the help of UNGEGN toponymic guideline coordinator. The guideline will be highlighted in the presentation as an awareness because the use of toponymical guidelines implies some knowledge of the language, culture, script that is valuable to be debated. Apart from that, treatment will be given regarding the Geographical Names Database (MyGeoname) which is a geographical names data bank that stores names, locations, historical backgrounds and gazette notifications. It is an authoritative record that are available for government and public use.

2. BACKGROUND

Malaysia has 154 local authorities, which comprises of 14 city councils, 39 municipal councils, 96 district councils and 5 local authorities. Over 100 of the distict councils and local authorities are populated with communities living in cities, towns and villages spread across a land mass of a size bigger (36%) than the United Kingdom. Many of these communities are geographically isolated far from major centres and services. Currently¸ Survey and Mapping Organisation of Malaysia (JUPEM) produces topographic map which is updated every 3 years covering developed urban and rural area which are becoming congested as time passes by. The changes has built up swiftly including physical man-made entities and infrastructure which has seen the increase in number at fast rate. One of the simplest uniting factors for any community and population as well the statewise govenments is their geographic name or place name.

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As regards to geographic name initiatives and activities, the Malaysian National Committee on Geographical Names (MNCGN), established on the 11th September 2002 based on the decision of the Malaysian Cabinet, is responsible in the coordinating of the geographical naming activities in Malaysia. This committee is chaired by the Director General of Survey and Mapping Malaysia (JUPEM) with its members consisting of representatives from Federal and State agencies. One (1) Technical Committee and three (3) Working Groups were established to assist the MNCGN as follows:

i.   National Technical Committee on Geographical Names (NTCGN);
ii. Working Group on Policy and Geographical Names updating (new working group which replaced Working Group on Guidelines for Determination of Geographical Names);
iii. Working Group on Geographical Names Database and Gazetteer; and
iv. Working Group on Names of Island and Off-Shore Geographical Entities.

Terms of reference for MNCGN are as follows:
i.   To study and establish criteria used to determine official geographical names in the national interest;
ii. To study and formulate the Guidelines for the Formation of the National Geographical Names Database;
iii. To determine whether the objectives, functions and output of activities are in line with the requirements of the government and country;
iv. To study and establish the methodologies for the activities of the on-line Geographical Names, National Gazetteer, National Standard Document and other activities relating to geographical names; and
v.   To collaborate with the National Mapping and Spatial Data Committee, Technical Committee 2 (TC2) SIRIM and other committees connected with the formation of the national geographical information infrastructure.
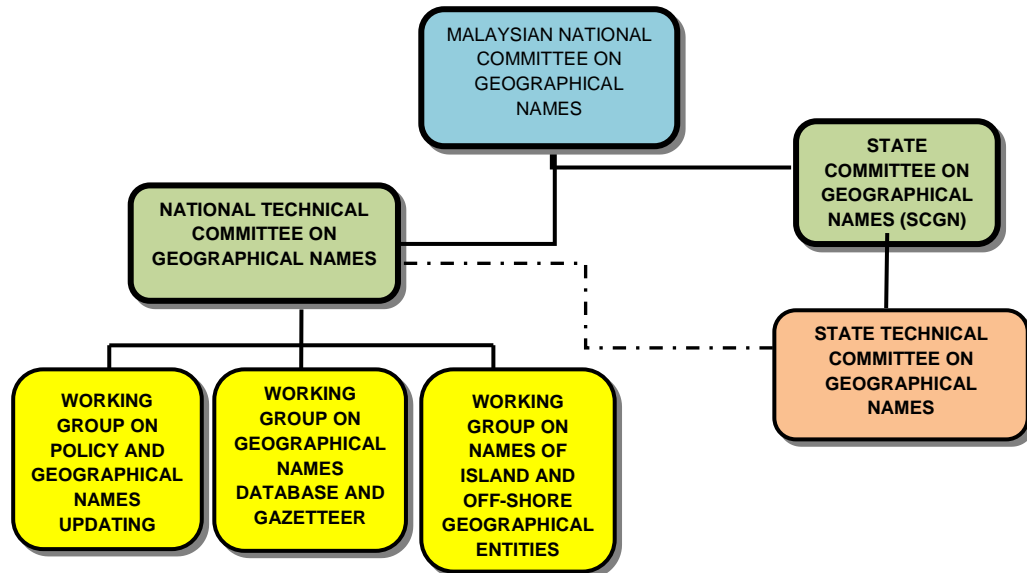
At the State level, the State Committee on Geographical Names (SCGN) was established to coordinate and implement the guidelines and procedures formulated by MNCGN. This committee is chaired by the State Secretary or the Secretary General of Ministry of Federal Territories (for Federal Territories) and its members comprise of representatives from State or Federal agencies. At the state level, the State Technical Committee on Geographical Names (STCGN) was also established to assist the SCGN.

The responsibilities of MNCGN encompass the following tasks:

i.   Formulating national guidelines for the determination of geographical names;
ii. Developing the National Geographical Names Database and Gazetteer;
iii. Promoting the use of official names; and

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iv. Coordinating the input of national nomenclature activities with those at the international level, including serving as liaison to the United Nations Group of Experts on Geographical Names (UNGEGN), particularly with the Regional Grouping.

The existing organizational structure of MNCGN is illustrated as below:

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                    ┌─────────────────────┐
                    │ MALAYSIAN NATIONAL  │
                    │   COMMITTEE ON      │
                    │   GEOGRAPHICAL      │
                    │      NAMES          │
                    └─────────────────────┘
                                                    ┌──────────────────┐
                                                    │     STATE        │
                                                    │  COMMITTEE ON    │
                                                    │  GEOGRAPHICAL    │
        ┌─────────────────────┐                     │  NAMES (SCGN)    │
        │ NATIONAL TECHNICAL  │                     └──────────────────┘
        │   COMMITTEE ON      │
        │ GEOGRAPHICAL NAMES  │                     ┌──────────────────┐
        └─────────────────────┘                     │ STATE TECHNICAL  │
                                                    │  COMMITTEE ON    │
   ┌──────────┬──────────┬──────────┐               │  GEOGRAPHICAL    │
   │          │          │          │               │     NAMES        │
┌──────┐  ┌──────┐  ┌──────┐                        └──────────────────┘
│WORKING│ │WORKING│ │WORKING│
│GROUP ON│ │GROUP ON│ │GROUP ON│
│POLICY AND│ │GEOGRAPHICAL│ │NAMES OF│
│GEOGRAPHICAL│ │NAMES│ │ISLAND AND│
│NAMES│ │DATABASE AND│ │OFF-SHORE│
│UPDATING│ │GAZETTEER│ │GEOGRAPHICAL│
│      │ │      │ │ENTITIES│
└──────┘  └──────┘  └──────┘
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3. GEOGRAPHICAL NAMES ACTIVITIES

The MNCGN holds its meeting at least once a year. The 14th Meeting of MNCGN was held on 22 March 2017 in Kuala Lumpur, Malaysia. Below are the related activities on geographical naming that were conducted in 2016 and 2017.

i. **Divisional Meeting of United Nations Group of Experts On Geographical Names (UNGEGN) Asia South East**

The 4th Divisional Meeting of UNGEGN-ASE was held in Kuala Lumpur on 17th October 2016. The meeting was attended by member countries from Philippines Indonesia, Singapore, Brunei, Vietnam and Malaysia. All the member countries presented their country report during the meeting. At the end of the meeting, a few resolutions were proposed as below:

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i.   The training program will be held in Philippines in conjunction with the 5th Divisional Meeting of UNGEGN-ASE Division;

ii.   Indonesia to provide each member countries their respective portion of the Gazetteer and Generic Names Table for updates;

iii.   Member countries to actively contribute to the ASE Division's website;

iv.   Malaysia to upload on the ASE Division's website the guidelines on naming of islands and geographic entities for reference; and

v.   Member countries unable to attend the 4th Divisional Meeting will be informed of the Minutes of the Meeting.

The 5th Divisional Meeting of UNGEGN-ASE was held in New York in conjunction with the 11th United Nations Conference on the Standardization of Geographical Names (UNCSGN), 8-17 August 2017. The meeting was chaired by Philippine and attended by member countries from Indonesia, Singapore, Vietnam and Malaysia. Country reports were presented and the occasion was interesting and extraordinary because delegates met during the UNCSGN which allows them to discuss in depth about the content of the conference and sharing of new notions and ideas from other parts of the world countries' presentation, thoughts and inspiration.

The 6th Divisional Meeting of UNGEGN-ASE will take place in Philippine on 26 March until 2 April 2018. In conjunction with the meeting, and as agreed in the New York's 5th UNGEGN-ASE Meeting, the first Regional Training Program in Toponymy, including Marine Toponymy will also be held at The Legend Palawan, Puerto Princesa City, Philippines. Each UNGEGN-ASE country members has agreed to send few delegates from each of their countries. The course syllabus and details of the training are provided to all members which were finalized and presented by Mr Ferjan Ormeling and Secretary/ Rapporteur from the UN-UNGEGN.

ii.   National Technical Committee on Geographical Names Meeting

National Technical Committee on Geographical Names held its 18th Meeting on 14th July 2016 and in April 2017 Kuala Lumpur. The meetings were chaired by the Deputy Director General of Survey and Mapping Malaysia I. During this meeting, the Working Groups and States Technical Committee presented their activities. New concepts of updating place name and map activities were discussed and shared.

iii.   Toponymic Guidelines

During the 10th UNCSGN (United Nations Conference on the Standardisation of Geographical Names) and 27th Session of UNGEGN in New York in August 2012, Malaysia was requested to prepare the 'Toponymic Guidelines for Map and Other Editors for International Use'.

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In accordance with that, Malaysia had prepared the document of 'Toponymic Guidelines for Map and Other Editors for International Use' and the final document was sent to Mr. Gerhard Rampl on 26th June 2016 to be published in the UNGEGN website as like other countries' published documents. The document has been finalised and edited according to the comments by Mr. Hubert Bergmann who was the previous Coordinator of Toponymic Guidelines for Map under UNGEGN. Mr Gerhard Rampl has proposed that the paper be presented by Malaysian representative during the '11th United Nations Conference on the Standardization of Geographical Names' that was held from 8 - 17 August 2017 in New York, USA. A Malaysian delegate had read the paper in the conference and the UNGEGN committee accepted the document as an international usage for geographic name communities.

iv.   Websites on Geographical Names Activities in Malaysia

The Department of Survey and Mapping Malaysia (JUPEM) had launched the MNCGN Website named "MyGeoName" in July 2006 and the updating of the website is carried out regularly. This website can be accessed at https://www.jupem.gov.my/v1/my/mygeonames/utama/ in dual language that is in Malay language and in English language. The latest update was on 13th June 2017 which includes the updating of liasion officer names of MNCGN and Information Bulletin of UNGEGN released in May 2017.

v.   MyGeoName Application

MyGeoName application was developed to store all geographical names databases all across the country. It was developed to provide authoritative information relating to the location and spelling of geographical names which are gazetted in a consistent format for the official use of government, industry and the public. MyGeoName application has been developed by Malaysian Centre for Geospatial Data Infrastructure (MaCGDI), which chair one of the three (3) Working Groups in MNCGN.

This website can be accessed at http://standard.mygeoportal.gov.my/geoname/

vi.   Geographical Names Database and Production of Web Gazetteer

The verification of geographical names database using digital topographical database at a scale of 1:25 000 for Peninsular Malaysia and 1:50 000 and 1:25 000 for the states of Sabah and Sarawak is almost completed. There are 63,100 geographical names in the database that have been verified by the states.

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At this moment, Malaysia is continuing with the verification of the geographical names using the digital national topographical database at a larger scale of 1:5 000 and 1:10000 which involved the following features:

i.   Residential Building;
ii.   Commercial Building;
iii.   Industrial Building;
iv.   Government Building;
v.   Public Building;
vi.   Educational Building;
vii.   Religious Building;
viii. Recreational Building;
ix.   Recreational Area;
x.   Cemetery Area;
xi.   Terminal;
xii.   River;
xiii. Road;
xiv.   Housing Area; and
xv.   Village

vii.   Naming of Islands and Off-Shore Geographical Entities

The Working Group on Names of Islands and Off-Shore Geographical Entities was established on 20 June 2006 and is chaired by the National Hydrographic Centre (NHC).

The tasks of this Working Group are as follows:

i.   Carrying out surveys and researches as well as identifying and proposing the naming of islands and off-shore geographic entities which has no names. The proposed names will have to relate to the characteristics of hydrographic entities.
ii.   Identify and collect all related information of islands and off-shore geographic entities including from charts, gazettes, maps, agreements and related documents;
iii. Documenting and updating the list of islands and geographical entities; and
iv.   Propose new names for existing islands and off-shore geographic entities related to the characteristic of geographical entities in accordance with the guideline for the Standardization of Undersea Feature Names produced by the International Hydrographic Organization (IHO).

The status on documentation of Names of Islands and Off-Shore Geographical Entities for each state is as follows:

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Status	Document	States
Published	Volume I (New Edition)	Perlis, Kedah, Penang, Perak, Selangor, Negeri Sembilan and Melaka
	Volume II (New Edition)	Kelantan, Terengganu, Pahang and Johor
	Volume III (New Edition)	Sabah, Labuan
Waiting for State authorities actions	Volume IV	Sarawak

Summary of naming of islands and geographical entities is shown below.

Categories	Total
Islands (with names)	871
Islands / geographical entities (without names)	196
Geographical entities (with names)	493

viii.   Workshop and Briefing

The objectives of the workshops and briefings were to disseminate information on Guideline on Determination of Geographical Names and to understand the procedure to use Geographical Names Database. It were also intended to help participants understand the importance of coordinated geographical naming and to populate the Geographical Names Database. These efforts ware expected to support the implementation of the Malaysian Geospatial Data Infrastructure (MyGDI) initiatives which is undertaken by the Malaysian Centre for Geospatial Data Infrastructure (MaCGDI).

The list of workshops that have been organised are as follows:

i.   Reviewing the Draft of State Gazetteer Document by MaCGDI;

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ii. User Requirement Study to Enhance MyGeoName application by MaCGDI;
iii. Briefing on National Geographical Names Database and Gazetteer by MaCGDI;
iv. Briefing on Guidelines for the Determination of Geographical Names by JUPEM;
v. Verification of National Geographical Names Database and Gazetteer Phase III by JUPEM; and
vi. Verification of the 'Jawi' spelling and pronunciation.

4. PROBLEM, SOLUTION AND ACHIEVEMENT

In developing and implementing the standardized usage of geographical names throughout the country, there were some issues encountered by MNCGN, amongst which are as follows:

i. **Verification of The Geographical Names**

The Working Group have encountered a few issues in developing the Malaysian Geographical Names Database and Web Gazetteer mainly on the commitment from the SCGN in carrying out the verification of geographical names. On top of that, some of the State Liaison Officers appointed to the SCGN were frequent change to new officers and this affected the continuity on the said work. Since procedures to verify geographical names were not properly documented, new officers would face difficulties in carrying out their tasks.

ii. **Standard Operating Procedures (SOP)**

There is no proper Standard Operating Procedure for updating names for urban and developed areas as topographic map is becoming congested in details due to development and infrastructure. JUPEM is responsible in the process of preparing the Standard Operating Procedures (SOP) in Updating the Geographical Names Database for such areas. Once this document completed, it will become the references to all the State Liason Officer in updating and verification of the geographical names.

5. CONCLUSION

It has been widely acknowledged that consistent use of accurate place names is an important element in effective communication worldwide, apart from supporting socio-economic development, conservation and national infrastructure. Standard geographical names can also identify and reflect culture, heritage and landscape. The point on map and in GIS labelling geographic names contains information about huge amount of physical and cultural features in the whole world. Notably, these are imperative in GIS data development, spatial data infrastructure (SDI) usage and analysis. It is factual that GIS operations such as querying,

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buffering and overlaying based on named objects are possible on the basis of place name standardization.

Consequently, there is an imperative need to develop a comprehensive database containing names of official places that would benefit trade and commerce, population census and national statistics, property right and cadastre, urban and regional planning, environmental management, natural disaster relief, security strategy and peace-keeping operations, maps and atlas production, automatic navigation, tourism, and communication including postal and news services. MNCGN represent Malaysia's effort to meet such needs.

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