

Establishment of Standards for Creating Easy-to Read Foreign-language Maps

Takayuki NAKAMURA, Kanichi SAITO¹ and Yoshiyuki MIZUTA

(Published online: 28 December 2016)

Abstract

In March 2016, the Geospatial Information Authority of Japan (GSI) established Rules for English Translation of Japanese Geographical Names on maps and Map Expressions for Overseas Visitors as standards to create maps of Japan which are easier to read by foreign visitors. This is in part to help establish the nation as an Advanced Tourism Country, as well as to prepare for the Olympic and Paralympic Games that are to take place in Tokyo in 2020. This article outlines the discussion process, summarizes the standards that were set up, and describes the way to familiarize the public with these standards.

1. Development of the Discussion

In order to establish Japan as an Advanced Tourism Country, and to prepare for the 2020 Olympic and Paralympic Games in Tokyo, it is necessary to make environmental improvements to facilitate smooth travel and comfortable stay for foreign tourists during their stay in Japan. Signage and tourist information in multiple languages has already been discussed both at the levels of the national government and some local organizations. In some cases, implementation has already begun.

Maps are one of the essential tools that foreign visitors use to get around smoothly. Thus, it is important that easy-to-read maps be made available in multiple languages, especially in English, as it is the most widely used language throughout the world.

In light of these circumstances, in 2014, GSI set up the “Advisory Committee for Making Map Expressions Easier to Read by Foreign Visitors.” The Committee consisted of experts of maps and geographical names and related organization officials. The committee’s mandate was to explore rules for translating geographical and facility names on maps into English, and map expressions that are intuitively recognizable by foreign nationals as standards to create maps of Japan which are easier to read by foreign visitors.

The rules for English translation and map expressions for foreign visitors were drafted based on the Committee discussions and further deliberation done within GSI, public comment was solicited for one month from January 7 to February 7th in 2016 for inclusion in the draft revision of “Working Rules for Operating Specifications” in the Public Survey. Based on the comments received during the public comment period, “Rules for English Translation of Japanese Geographical Names” and 15 “Map Expressions for Overseas Visitors” were established on March 30, 2016.

2. Outline of the Advisory Committee for Making Map Expressions Easier to Read by Foreign Visitors

This Committee was set up in May 2014 and consisted of experts on maps and geographical names as well as related organizations (Japan Tourism Agency, Tokyo Metropolitan Government). The Committee held four meetings from June 2014 to March 2015 (Figure 1).

[Committee members]

*Titles referenced here are those held at the time.

Takashi Morita, Committee Chair

(Professor, Department of Civil and Environmental Engineering, Faculty of Engineering and Design, Hosei University)

Hiroyasu Itakura

(Director, Tourism-Based Community Development,

¹ Currently belongs to Kyushu Regional Survey Department

Tourism Division, Bureau of Industrial and Labor Affairs, Tokyo Metropolitan Government)

* Fusayo Kodaira, participated in the 1st committee meeting in the above capacity

Keisuke Imao, Writer

Ichiro Fujiwara

(Director for Receiving Foreign Tourists, Japan Tourism Agency)

Robert Campbell

(Professor, Graduate School of Arts and Sciences, the University of Tokyo)

Kohei Watanabe

Associate Professor, Department of Sociology, Faculty of Liberal Arts, Teikyo University

[Meeting Dates]

First meeting June 24, 2014

Second meeting November 25, 2014

Third meeting February 18, 2015

Fourth meeting March 20, 2015

[Meeting venue]

Main conference room, Coordinating Committee for Earthquake Prediction at Joint Government Building 2 in Kudan, Tokyo



Fig. 1 The first Committee meeting

3. Rules for English Translation of Japanese Geographical Names

3.1 Basic Concept

It is possible to convey to foreign nationals how geographical names or facility names are pronounced by replacing the Japanese reading with Roman alphabet. However, the transcribed name does not communicate the

geographical features nor the kind of facility. For instance, 筑波山 and 東京駅 can be transcribed as Tsukubasan and Tokyoeki in the Roman alphabet, but it does not inform the foreign language speakers that they are a mountain and a station respectively.

It is much easier for foreign nationals to understand if the name is combined with the Roman alphabet and the English word that depicts the geographical feature or type of the facility. There are two possible formats for combining Roman alphabet and English words. They are as follows:

Addition format: English words are added onto Roman alphabet.

Example: Mt. Tsukubasan for 筑波山 (Tsukubasan)

Substitution format: Replace the Roman alphabet that depicts geographical features or types (yama, san for 山 or kawa, gawa for 川) into English words (Mt. or River).

Example: 筑波山 (Tsukubasan) is translated as Mt. Tsukuba).

The addition format sounds familiar to Japanese speakers because the same pronunciation is included. However, strings of characters tend to get lengthy and may be difficult to memorize by non-Japanese speakers, as well as create legibility problems when printed on maps.

The substitution format may be easier to read by foreign nationals, but may not be recognizable by Japanese speakers. For example, Japanese would recognize 立山 (Tateyama) or 荒川 (Arakawa) as one word, but would have trouble recognizing the original Japanese words if they were split up and put together with English such as Mt. Tate or Ara River.

Thus, it is not appropriate to apply a format uniformly in one way, as either format, addition or substitution, has advantages and disadvantages. It would be necessary to establish a rule of English translation that would balance the benefit for both foreign and Japanese speakers: for the foreign visitors to easily remember the word, and for the Japanese to make out the original name of the place from hearing the English pronunciation.

Therefore, it was decided that the format to be used must be decided on a case-by-case basis, paying close attention to the structure of the original Japanese geographical names: for instance, whether or not the proper noun-like part which does not specify the type of geographical feature or facility can be independently used, the number of syllables, etc.

3.2 Outline of the Rules for English Translation of Japanese Geographical Names

Here are the translating rules for geographical names broken down by category; 1) names of simple natural feature, 2) names of extensive natural feature, 3) names of residential areas, and 4) names of facilities, as shown below. The following is an overview, however in the actual application, there are much more detailed rules for each category.

The rules are in line with previously issued governmental notifications such as “Notification on the English Description of Informational Signs on the Road,” (Notification Number 327 of the Ministry of Land, Infrastructure, Transport and Tourism, in March, 2014), or “Guidelines for Improving or Reinforcing Multiple Language Signage to Establish Japan as a Tourism-oriented Country” issued by Japan Tourism Agency in March 2014. For names of natural features, there are more detailed rules and examples than the previously issued guidelines. Also, the translation process of each of the geographical names is also shown.

3.2.1 Names of Simple Natural Features (mountains, rivers, lakes, islands, capes, etc.)

Names of islands are based on “Unification of Rules for Translating Island Names into English” published on March 11, 2014 by the Interagency Coordination Group on Communications Concerning Territorial Integrity.

Other than islands, as a rule, the addition format and substitution formats are applied as follows. Here, names of natural features consist of the proper noun-like part, xx or yy depicted as xx 山 (Mountain) or yy 川 (River), and the word expressing a geographical feature such as “mountain” or “river.”

Figure 2 shows how either the addition format or the substitution format is applied respectively.

- In case of applying the addition format:
 - Words expressing geographical features whose Kanji characters or readings are not standard
 - Words expressing geographical features that are immediately preceded by a geminated consonant or an auxiliary character
 - One-syllable words with a proper noun-like part
 - Two-syllable words with a proper noun-like part that cannot stand on their own

Examples:

安家森 (Akkamori):	Mt. Akkamori
大山 (Daisen):	Mt. Daisen
霞ヶ浦 (Kasumigaura):	Lake Kasumigaura
月山 (Gassan):	Mt. Gassan
鷓川 (Mukawa):	Mukawa River
加波山 (Kabasan):	Mt. Kabasan
中川 (Nakagawa):	Nakagawa River

- In case of applying the substitution format:
 - Two-syllable words with a proper noun-like part that can be somewhat independent
 - Three or more syllable words with a proper noun-like part

Examples:

富士山 (Fujisan):	Mt. Fuji
利根川 (Tonegawa):	Tone River
那珂川 (Nakagawa):	Naka River
筑波山 (Tsukubasan):	Mt. Tsukuba
浜名湖 (Hamanako):	Lake Hamana

3.2.2 Names of Extensive Natural Features (mountain ranges, mountains, plains, peninsulas, etc.)

As a rule, substitution format is applied using the following format:

[name that was given to the region] + [geographical terminology]

Examples:

奥羽山脈 (Ou Sanmyaku):	Ou Mountain Range
関東平野 (Kanto Heiya):	Kanto Plain

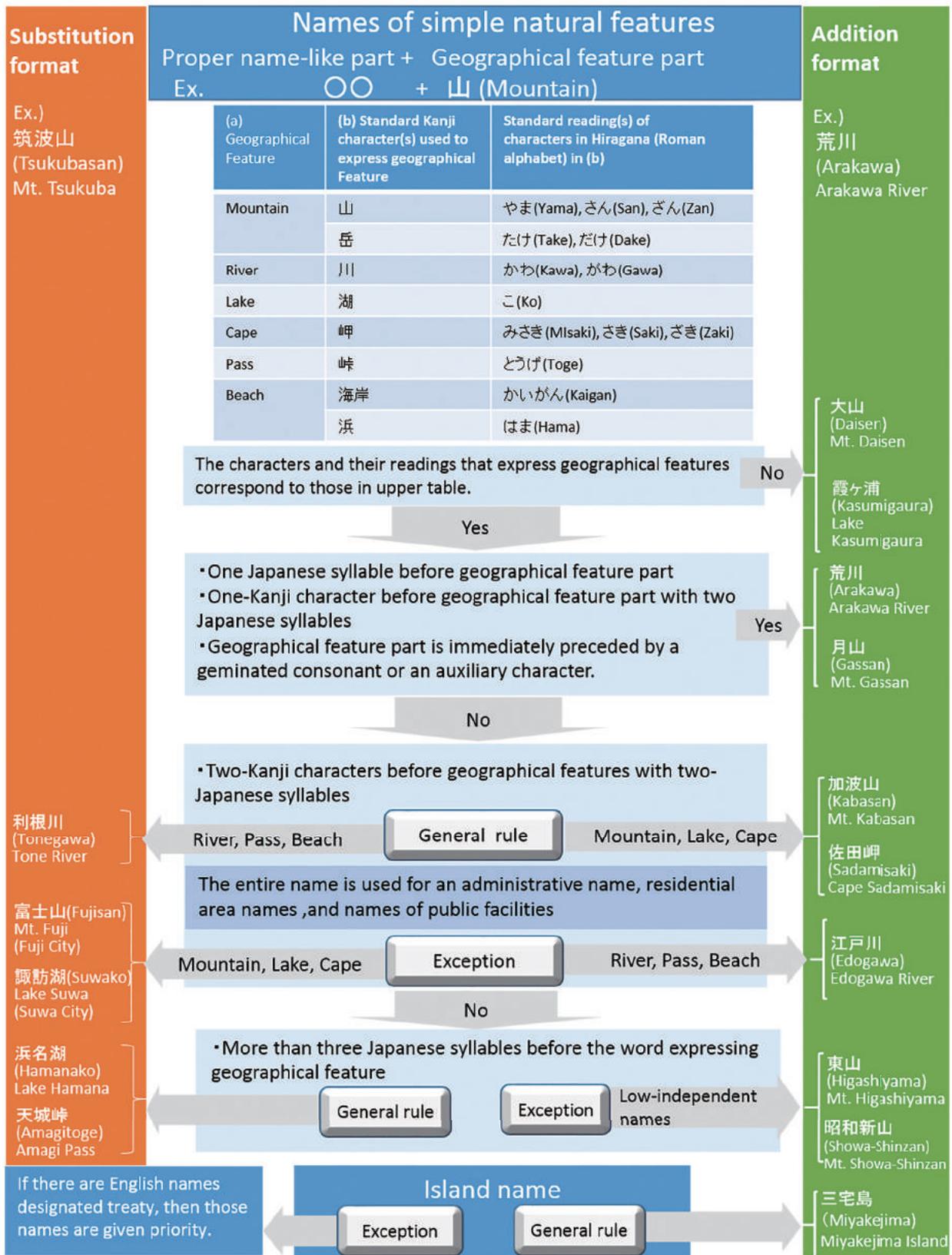


Fig. 2 Pattern diagram showing how the addition or substitution formats are applied for names of simple natural feature to be translated into English

紀伊半島 (Kii Hanto): Kii Peninsula
 東京湾 (Tokyo Wan): Tokyo Bay
 八重干瀬 (Yabiji): Yabiji Coral Reef (exception)

3.2.3 Names of Residential Areas (prefecture, county, city, ward, town, village, oaza, aza, chome)

The substitution format is applied to the following levels: prefecture, county, city, ward, town, village. For the remaining district types, only the Roman alphabet is used and oaza, aza and chome are dropped.

Examples:

東京都 : Tokyo Metropolis
 北海道 : Hokkaido Prefecture (exception)
 京都府 : Kyoto Prefecture
 茨城県 : Ibaraki Prefecture
 稲敷郡 : Inashiki County
 つくば市 : Tsukuba City
 阿見町 : Ami Town
 美浦村 : Miho Village
 千代田区 : Chiyoda City
 緑区 : Midori Ward
 浅草 : Asakusa
 霞が関二丁目1番3号 : Kasumigaseki 2-1-3
 北郷1番 : Kitasato 1

3.2.4 Names of Facilities

In the modern period, many facility names were established systemically by associating the already existing geographical name with the category of the facility. For those types of names, mainly, the substitution format is applied as a rule. Roads, temples and shrines that have existed from ancient times, on the other hand, tend to have various different categorization names, thus the addition format is applied. If an English transcription as designated by the facility manager exists, such transcription takes priority.

Examples:

浅草寺 : Sensoji Temple (addition format)
 東京駅 : Tokyo Station (substitution format)
 勝鬃橋 : Kachidoki Bridge (substitution format)
 成田国際空港 : Narita International Airport
 (Designated English transcription)

4. Map Expressions for Overseas Visitors

4.1 Basic Concept

Foreign tourists to Japan would most likely use foreign language versions of maps to travel and would likely try to match the names and expressions on their maps with the signage at the site. Therefore, the maps would be easier to read if expressions on the maps are consistent with the design of the pictograms (JIS Z 8210 “Standard graphic expressions for pictograms,” etc.) that are widely used on signage at the site. Efforts were made to match expressions with previously existing pictograms. Maps have limited space for the different kinds of information that need to be included on it. Map expressions in general are designed to be rendered in small size. Some pictograms on the other hand, when reduced in size, are hard to read. Thus, they needed to be simplified. In this series of map expressions, expressions are designed so as to be legible even at 3mm. Also, the size is made larger than the map expressions used for conventional topographic maps of 1:25,000 (1.2 mm - 2 mm), to allow for detailed designs that can be intuitively recognized for what they represent.

4.2 Survey Done Using Foreign Language Speakers

In February to March 2015, a survey was conducted on how easily the map expression designs are read by foreign nationals. The results were used as reference for discussions in the Committee. The subjects of the survey included: foreign embassy office staff (from 14 countries including U.S.A. and Australia), Japan International Cooperation Agency (JICA) trainees at JICA Tokyo and JICA Tsukuba, foreign students at University of Tsukuba and Chiba University, students at Japanese language schools, English conversation school teachers, and foreign tourists in the Sensoji Temple area. In total, 1017 people from 92 countries were surveyed. When broken down by nationality, the highest representation was Chinese with 229 (23%), followed by 83 Vietnamese (8%), 58 Koreans (6%), 56 Americans (6%), and 42 Indonesians (4%).

In the survey, for the expression to represent shopping centers/department stores, 66% people answered that a shopping cart icon  works well, whereas a gift

box icon  was favored by 9%, and 21% of people answered either expression works. For convenience stores/supermarkets, a sandwich and drink bottle icon  had 46% approval, whereas a shopping basket icon  had 23%, and either icon works had 20%.

4.3 Overview of the Map Expressions for Overseas Visitors

Using the results from the survey done on foreign nationals, the Advisory Committee for Making Map Expressions Easier to Read by Foreign Visitors compiled the images of expressions required for foreign language maps. Based on the Committee's conclusions, GSI drafted a proposal for map expressions for foreign language maps. These map expressions together with the Rules for English Translation of Japanese Geographical Names were published in the draft revision of "Working Rules for Operating Specifications" in the Public Survey, and public comment was solicited. Based on the results of the public input, it was decided that the following 15 icons would be used as map expressions for foreign language maps (Figure 3). These were selected considering places that foreign citizens would most likely visit, convenient places, and places that foreign nationals might need to find in an emergency.

Expressions for shrines and onsen (hot springs) are the same as those used for 1:25,000 topographic maps. Expressions for post office, museum, hotel, toilet, railway station, and airport are the same as pictograms. Expressions for hospital, bank/ATM, restaurant, onsen (hot spring) closely resemble those of the pictograms also (bank/ATM icon is very similar to that of pictogram for cash dispensing machine).

Items	Map symbols	Items	Map symbols
Post Office		Convenience store/ Supermarket	
Police Box		Hotel	
Shrine		Restaurant	
Church		Washroom	
Museum		Hot Spring	
Hospital		Train Station	
Bank/ATM		Airport	
Shopping Center/ Department store			

Fig. 3 Finalized map expressions for overseas visitors

5. How to Put the Result Into Public Circulation

The newly established Rules for English Translation of Japanese Geographical Names and the Map Expressions for Overseas Visitors are to be used in the GSI-made maps in foreign languages. These rules are also to be widely disseminated to local governments and private associations to encourage their implementation help make maps easier to read by overseas visitors.

5.1 Examples of Rule Application at GSI

GSI published an English version of the map "Japan and Its Surroundings at the Scale of 1:5,000,000" on March 31, 2015 (Figure 4). A similar map is available at GSI Maps. English transcriptions used on the map are based on the results of the Advisory Committee for Making Map Expressions Easier to Read by Foreign Visitors and it complies with the above-mentioned Rules for English Translation of Japanese Geographical Names as a result. English language maps whose scales are from 1:1,000,000 and 1:200,000 to 1:25,000 and which implement these rules have been gradually published by GSI from 2016.

On such occasions as the G7 Summit held in Japan in Ise-Shima on May 26-27, 2016 and the G7 Transport Ministers' Meeting held in Karuizawa, Nagano on September 24-25, 2016, GSI published English versions of "G7 Ise-Shima Summit Map" and "G7 Transport Ministers' Meeting Map." These maps were designed to give members attending the summits a better understanding of the area and its surroundings, its geography and cultural appeal, as well as a deeper understanding of Japanese culture (for more details, please refer to Journal of the Geospatial Information Authority of Japan 128, "Special Map Production for the Summits"). On those Summit Maps, geographical name notations in English are in accordance with the above-mentioned rules, and the Map Expressions for Overseas Visitors were used (Figure 5 and Figure 6).

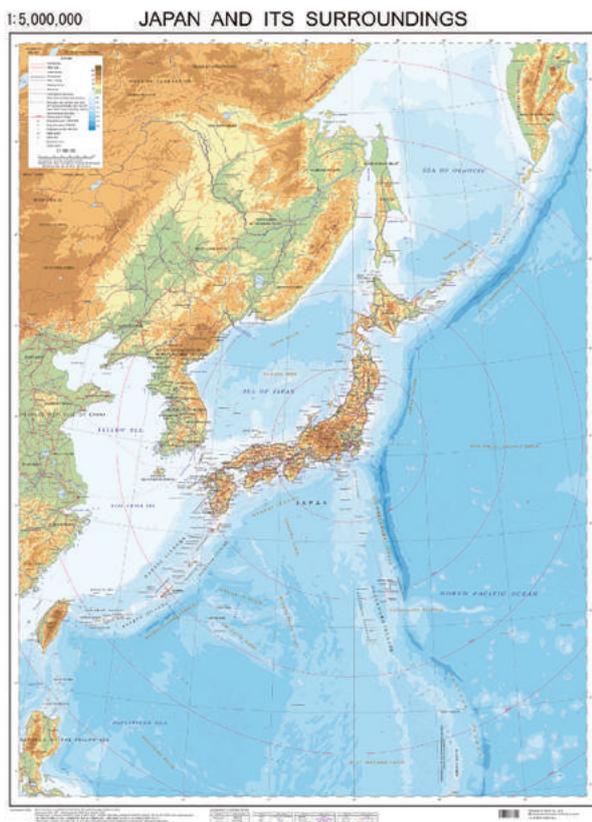


Fig. 4 "Japan and its surroundings at a scale of 1:5,000,000" English version



Fig. 5 Example of rule application in the G7 Ise-Shima Summit Map



Fig. 6 Example of rule application in the G7 Transport Ministers' Meeting Map

5.2 Dissemination to Local Governments

Both the Rules for English Translation of Japanese Geographical Names and Map Expressions for Overseas Visitors were added as Appendix 8 "Multi-language Map Expressions" to the revision of Working Rules for Operating Specifications" in the Public Survey on March 31, 2016. The rules were considered as one of the new revisions in the Working Rules for Operating Specifications. These new rules were introduced to those in charge of public surveys in local governments under the jurisdiction of the respective GSI regional survey department and civil engineering department managers at the prefectural level.

The above-mentioned English version of GSI Maps is going to be gradually made available in larger scales, at the level of 1:200,000 or 1:25,000. The English versions will become the base maps for local governments to use when creating sightseeing map web sites in English. As the larger scale English maps become available on

GSI Maps in the future, it is our hope they will help with further dissemination.

5.3 Dissemination to Map Industry and General Public

To publicize these new rules and expressions to the map-making industry, we published articles in trade magazines and we urged trade associations to inform map publishers of them. In order to inform the general public, we featured ads in the public relations magazines of the Ministry of Land, Infrastructure, Transport and Tourism, and GSI, as well as we installed panels displaying the new rules and expressions in the lobby of GSI and the Science Museum of Maps and Surveys. Information regarding the new rules and expressions has also been published on the Internet at the portal site of the Multilingual Council run by the Bureau of Tokyo 2020 Olympic and Paralympic Games Preparation of the Tokyo Metropolitan government.

There seems to still be a relatively high interest in conventional Japanese map expressions. Therefore, in displays made for the general public, we show the existing Japanese map expressions together with the new map expressions for foreign language maps.

References

GSI's web site for Making maps of Japan easier to read for foreign visitors, <http://www.gsi.go.jp/kokusaikoryu/kokusaikoryu-e30098.html> (accessed 1 Jul. 2016). (in English)

The Advisory Committee for Making Map Expressions Easier to Read by Foreign visitors (September 2015): English translation of geographical names and map expressions that are easy to read by foreign visitors – Report on the Advisory Committee for Making Map Expressions Easier to Read by Foreign Visitors (in Japanese), <http://www.gsi.go.jp/common/000111876.pdf> (accessed 1 Jul. 2016). (in Japanese)

Hideki Sasajima (2016) : Special Map Production for the Summits, Journal of the Geospatial Information Authority of Japan 128, 129-133. (in Japanese)