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Manual for the Collection of Geographical Names

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Foreword

In this Manual, the Brazilian Institute of Geography and Statistics - IBGE presents the basic procedures and principles of the methodology for the collection of geographical names in the field. Based on the wide institutional experience of Cartography in reambulation for mapping projects and treatment of geographical names, this document aims at being useful in other projects of that involve the work with such nomenclatures.

The basic concepts are briefly presented and focus on the knowledge of geographical names to understand their collection methodology, thus allowing a more efficient use of the Manual.The three phases of collection are described: office preparation; fieldwork; and office consolidation of field information. Samples of documents collected by IBGE field teams are also included, allowing better visualization of the expected results.

It should be noted that the methodology presented herein can be used in any type of project regardless of the availability of digital resources. As a result, it addresses projects developed both for the use of digital tools and in analog media.

Considering that an efficient collection of geographical names gathers valuable information for different surveys and produces key inputs for the standardization of these elements, the Directorate of Geosciences expects, with this Manual, to contribute to the work of public and private institutions and citizens that use geographical names in Brazil.

Claudio Stenner
Director of Geosciences*

* Director in charge at the time of the original release in Portuguese.

Introduction

Geographical names are present in everyday life and their importance is perceived whenever one answers simple questions, like, for instance: *Where do you live? Where will you spend the holidays? Which subway station should I get off?*

Besides nominally identifying features that compose the territory, the analysis of geographical names might unveil much information on the occupation patterns of a place, such as the peoples that lived there, the language(s) they spoke or even the stage(s) these languages were at when people lived in the region. Likewise, it is possible to identify patterns of economic production and even the type of vegetation that existed in a given place. Some possible examples are the great assortment of geographical names relative to *tropeirismo*[1] in the route of *tropeiros* (troopers) in the Brazilian South Region, as well as in the states of São Paulo and Minas Gerais; a number of localities and watercourses that received the names of Polish and Italian immigrant families in the municipality of Irati (Paraná); or rivers, in the entire country, named after fishes that were (or still are) abundantly fished in their waters.

For geographical names to fulfill their potential, mistakes in the recovery of information comprised in them and in the identification of features should be mitigated. To do this, their standardization is required, i.e., the adoption of common recommendations and principles that allow the consistent use and interpretation of geographical names. Standardization involves both the positional aspect of the features in the territory and the spelling aspect.

[1] Activity of drovers of horse, cattle and mule moving between commercial regions and consumer centers in Brazil in the 17th century.

The lack of standardization of geographical names has caused problems for a long time, from the most ordinary to the most significant, to governments, societies and individuals, like territorial disputes in the national and international spheres. The existence of a full set of standard geographical names benefits emergency attendance, population censuses, postal service, transportation management and tourism, among other uses, as well as it streamlines Internet searches, especially in the Spatial Data Infrastructures - SDIs[2].

This Manual presents a methodology for the collection of geographical names that takes into account concepts related to this theme and the specificities to their standardization, from the perspective of the practice carried out by the IBGE in its cartographic activities. The dissemination aims at establishing a minimal set of procedures for an efficient collection, i.e., collection that provides the required consistency concerning the nomenclature of the mapped elements. Therefore, it is expected that this methodology be used by mapping institutions, academia and other sectors of society interested in the toponymic theme.

[2] The term Spatial Data Infrastructure is frequently used to describe a basic set of technologies, policies and institutional arrangements to streamline the availability and access to spatial data (COMISSÃO NACIONAL DE CARTOGRAFIA, 2010, p. 14).

Geographical names: basic concepts

A geographical name can also be called a "toponym", a Greek word that means "place name" (*topos* = place, onym = name). Therefore, the term toponym also refers to feature names outside Planet Earth, like the Sea of Tranquility in the Moon or Hellas Crater, in Mars.

The United Nations Group of Experts on Geographical Names - UNGEGN defines a geographical name as a "name applied to a feature on Earth" (UNITED NATIONS GROUP OF EXPERTS ON GEOGRAPHICAL NAMES, 2002, p.18). A geographical name is the proper name (a specific word or a combination of words or expressions) used to refer to a place, a feature or to specific areas. The main features include:

- Inhabited places (Cities, Villages, etc.);
- Administrative geographies (States, Municipalities, Districts, Neighborhoods, etc.);
- Natural features (watercourses, mountains, capes, lakes, seas, etc.);
- Constructed features (dams, airports, highways, etc.); and
- Places without precise borders or areas with specific local meaning (usually religious), like pastures, fishing areas and sacred places.

In this Manual, a geographical name is defined as the georeferenced toponym from which aspects of the cultural and/or historical origins of the feature it nominates and/or of the community that established it can be retrieved. Thus, the valuation, preservation and

dissemination of knowledge about the full set of geographical names of a country is a significant contribution to its sovereignty and to the self-esteem of its citizens.

Geographical name: reference and identity

The appropriation of a territory brings the need to identify and refer to the environment around it, which

> [...] induces human beings to establish denominations for places and other geographical features. [...] An evident and clear dynamics is observed in this denomination, which presents itself, preferably, under injunctions, either religious or political, economic or any other, either transforming or corrupting it (SANTOS, 2008, p. 10).

Therefore, the importance of geographical names as an identity mark and of power of an individual, group or nation is noticed. As a result, disputes for the sovereignty of some areas frequently involve their geographical names, as it is the case of *Islas Malvinas* or Falklands, disputed by Argentina and the United Kingdom. Also, nations that become independent change, many times, their geographical names from the language of the old dominant nation to the language(s) of the newly-independent people. For instance, this is the case of Mozambique, whose capital was called Lourenço Marques during the Portuguese dominance and, after the independence, became Maputo (BATA, 2018).

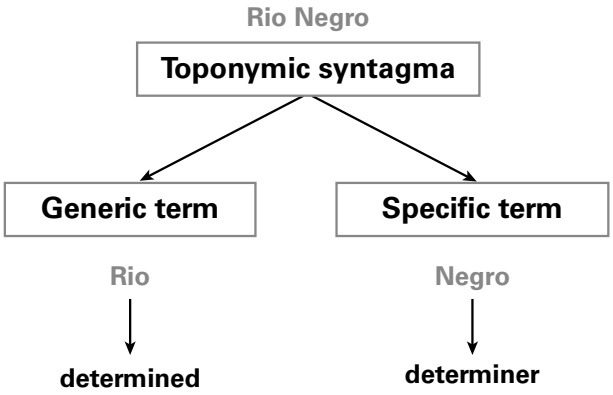
Geographical names can also have a key role in land disputes and in the demarcation of municipal and state borders, as in the case of a long dispute between the states of Pará and Mato Grosso, in which the names of a waterfall and a cascade were exchanged in an official mapping, resulting in a change of the borderline between the states - the dispute on an area of nearly 2 million hectares began in 2004 and still persists.

Therefore, knowledge of the process of place nomination in a region or country can, on its own, contribute to studies of different natures: historical, geographical, linguistic and sociological, among others.

Composition of geographical names

Geographical names mostly comprise a specific term and a generic term, forming the toponymic syntagma. The generic term identifies the type of feature and the specific term individualizes it, according to the example in Figure 1.

Figure 1 - Explanatory schema of the toponymic syntagma



Syntagma: a binary set formed by a **determined** element and a **determiner**.

Source: IBGE. *Normas técnicas para revisão de nomes geográficos*. Rio de Janeiro, 2011. p. 10. Material didático para o Programa Anual deTreinamento - PAT 2011. Adaptado. Available from: https://docplayer.com.br/7781981-Normas-tecnicas-para-revisao-de-nomes-geograficos.html. Cited: Apr 2023.

It should be highlighted that the generic term is frequently omitted in names of populated places, like (Estado de) São Paulo (a state), (Bairro de) Copacabana (a neighborhood) and (Localidade de) Milho Verde (a locality).

It is required to watch out for what is called "fake generic", since many times a term classified as generic assumes the role of a specific term. Here are some examples of fake generic terms:

- Rio Riachão, in which "Riachão" (Big River), a term that indicates the type of feature, works here as a specific term, individualizing this river;
- (Bairro de) Vila da Penha, in which "Vila" (Village) is not a generic term that means "capital of the district", yet it is part of the specific term; and
- (Localidade de) Fazenda Verde Campo, in which "Fazenda" (Farm) is not a generic term corresponding to a type of rural property, yet it is part of the specific term.

Connectives, like *de, da, das, do, dos* (of) are also part of the geographical names, as well as the conjunction "ou (or)", used to introduce a variant name, as observed, for instance, in the case of the Localidade de Campo Novo ou Lajeadinho, in the municipality of Piên (Paraná).

Variant name

Some features are recognized by more than one geographical name, as, for example, Serra do Rio Grande or Serra dos Cristais, in the municipality of Diamantina (Minas Gerais). In these cases, both names are adopted to designate the feature, without any value judgement on them. The conjunction "or" is used to inform the existence of the variant name, or allonym, respecting the alphabetical order of the terms.

In geographical names figuring in the law that created them or in the description of borders, the first name should be the one figuring in that documentation, followed by the conjunction "or" and the other variant names identified. Albeit the geographical name figuring in the creation law or in the description of borders is no longer found in field surveying, it should be kept as the main one.

It should be noted that some variant names apply only to a part of the feature, as in the case of Serra do Mar, which is called Serra dos Órgãos only in the state of Rio de Janeiro.

Descriptive terms

In cartographic documents, some names are not geographical names, but rather names of explanatory value - descriptive terms that aim at improving understanding or improving the information on features found in the territory. Many times, the same nouns used as descriptive terms are also used as generic terms in geographical names. Some occurrences are: caixa-d'água, corredeira, curral, estação de captação de água, galpão, viveiro and pasto, among others.

It should be highlighted that the instructions in this Manual do not apply to descriptive terms.

Geographical name: motivation and history

The toponymic motivation refers to the semantic category driving the nomination of geographical features.

In the process of feature nomination, a great range of motives inspire the creation and establishment of a geographical name. The name of Vilarejo de Itimirim (Minas Gerais), for instance, is due to the existence, in that place, of a large number of bees of a species called itimirim by indigenous persons. The name of Travessa Artur Vilaça, in the municipality of Itaúna (Minas Gerais), in turn, is a tribute to a pharmacist who had been a mayor and a great benefactor of the city (NOGUEIRA, 2017). There are also geographical names motivated by the look of the feature, like Dedo de Deus (God's Finger), in the municipality of Teresópolis (Rio de Janeiro), whose relief looks like a finger pointing to the sky, as illustrated in Picture 1.

Picture 1 - Dedo de Deus, Teresópolis (Rio de Janeiro)

Source: COUTO, C. P. Dedo de Deus seen from Soberbo, Teresópolis (RJ), 2012. *In*: WIKIMEDIA Commons. San Francisco: Wikimedia Foundation, 2020. Available from: https://commons.wikimedia.org/wiki/File:Dedo_de_Deus_vista_do_Soberbo.jpg?uselang=pt-br. Cited: Jun 2023.

Among other motives for the nomination of features, beyond those previously mentioned, are plants; rocks; watercourses; names of religious nature, like those of saints and sacred objects; commemorative days; historical events, etc.

Knowing the motivation for geographical names is relevant to their standardization, since this procedure might solve doubts concerning the spelling as it might vary to represent one same sound, according to the motivation. For instance, in the different meanings of the names "Ribeirão dos Cochos" and "Ribeirão dos Coxos", "cochos" means a type of trough whereas "coxos" means "lame".

The motivation for a geographical name is not always so obvious as it seems. For this reason, knowing the history of the name might reveal unknown aspects in an investigation on motivation, even surprising aspects on the real motivation of a toponym, helping its standardization. For example: in the municipality of Piên (Paraná), there is a locality called Picacinho, spelled with either "C" or "SS": Picacinho and Picassinho. Indeed, the use of the second form, Picassinho is due to an analogy with the name of the famous painter Pablo Picasso. However, after the collection in the field, the spelling Picacinho was established as the right one, due to the existence of a strong and beautiful picaço (horse) in that locality according to local informants. Therefore, the word that motivated the geographical name is "picaço", i.e., a type of dark horse, mule or donkey with a white forehead and/or paw, according to the *Dicionário Houaiss da Língua Portuguesa* (HOUAISS; VILLAR, FRANCO, 2009).

Tradition

The term tradition comes from the Latin *tradere*, i.e., transmission. In this Manual, this concept is defined as a transmission of values and beliefs from one generation to another, and it is applied to the spelling of geographical names.

According to item 42 of the Orthographic Template[3], traditional spelling is that one long-established by the daily use of Brazilians (ACADEMIA BRASILEIRA DE LETRAS, [2023?]).

The spelling of a geographical name that remained unchanged and is consistently used by several segments of the local society, for a long time, is considered a traditional spelling and should be maintained, whenever possible, regardless of any disagreement with the spelling rules in force in Brazil. Estado da Bahia is an example of a geographical name whose spelling is established by tradition.

Standardization

The standardization of geographical names of a nation is part of a worldwide effort, coordinated by the United Nations through the UNGEGN. It is defined as a full set of actions, established by an appropriate authority, that encompasses the specifications of rules and standards that assure the uniform interpretation of geographical names.

In its resolutions, the United Nations Group of Experts on Geographical Names (2014) advocates that:

- Only one official name is adopted, with only one spelling, for each feature/object, whenever possible;
- The spelling of the name should follow either the orthographic rule in force in the country or the traditional use of the geographical name;
- The standardized names should be in accordance with their current and local uses; and
- Feature names created by legal acts as, for example, states, municipalities, districts, airports, highways and conservation units, should be the ones registered in the legal act that created them, with their exact spelling.

Geographical names bring "evident benefits for the processes of human communication: they can prevent ambiguity and provide clarifications and economy to trade, planning, search and rescue, preparation for emergencies, censuses, property rights, environmental management, etc." (SANTOS, 2008, p. 167).

[3] Traditional toponyms do not change their spelling, whenever it is enshrined by the daily consensus of Brazilians. As an example, the toponym “Bahia” will maintain this form whenever it refers to the state and city that have this name (ACADEMIA BRASILEIRA DE LETRAS, [2023?]). Additionally, it is noticed that the compounds and derivatives of these toponyms will follow the general rules of the common vocabulary (BECHARA, 2009).

Collection of geographical names in the field

The collection of geographical names should be quite careful and precise, in relation to both preparation and registration. It should ensure the emergence of new geographical names and the relatively frequent changes they are subject to be correctly registered and made known, in order to allow their consistency in terms of positioning and spelling.

In the process of cartographic production, the collection of geographical names is frequently carried out during the reambulation, which consists of field surveying of the denomination and classification of natural (relief, hydrography, etc.) and artificial (transportation system, localities, etc.) features. During the activity of reambulation, features of the terrain to be mapped are raised, identified, confirmed and classified.

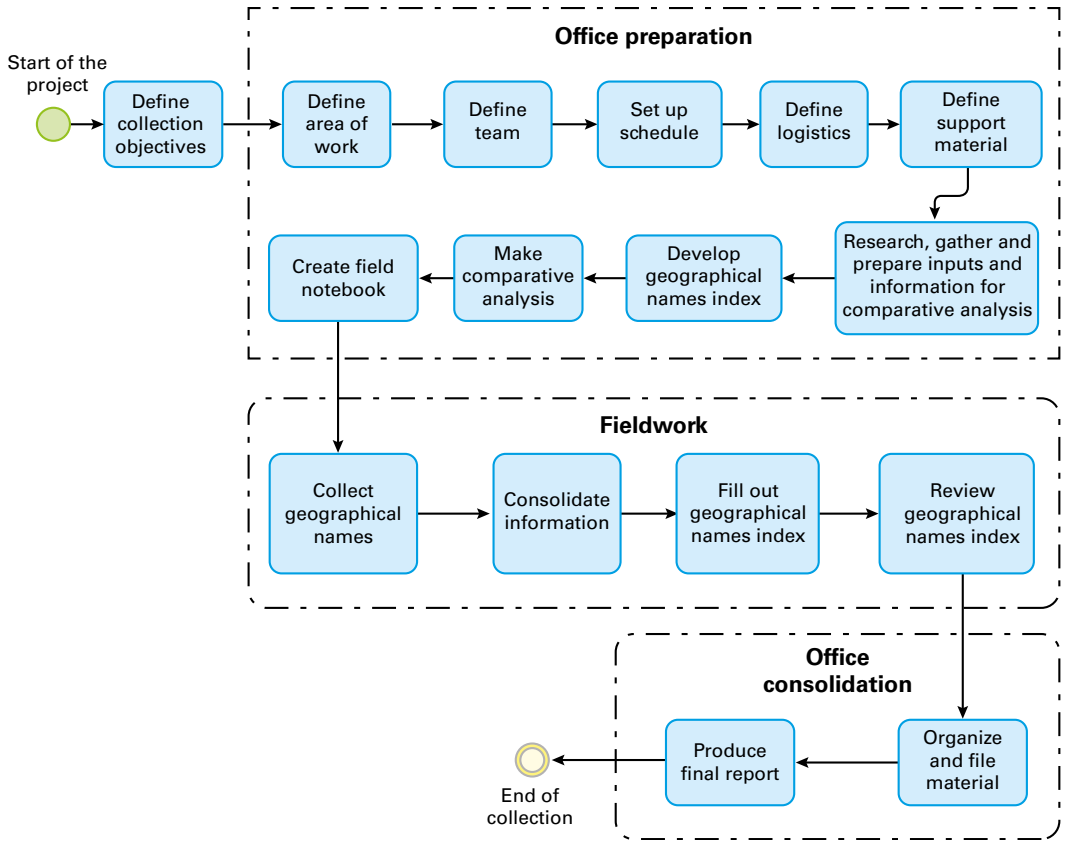
The methodology for collection of geographical names presented in this Manual is based on the reambulation experiences carried out by the IBGE, including its three phases:

- Office preparation;
- Fieldwork; and
- Office consolidation of field information.

The collection of geographical names is not necessarily bound to the reambulation, since the purpose of the collection may not be associated with a mapping demand. Nevertheless, the methodology of collection presented is based on the reambulation experiences carried out by the IBGE, including the phases of office preparation and collection in the field.

The flowchart below represents the steps of the collection of geographical names in the field that guide the production of this Manual (Figure 2).

Figure 2 - Flowchart of the steps of the collection of geographical names



Source: IBGE, Diretoria de Geociências, Coordenação de Cartografia.

Goals of the collection

Firstly, the goals of the collection should be defined, since the full set of geographical names that will be worked on and the inputs will directly result from these goals.

The goals of the collection might be, for instance, the updating of geographical names of an existing mapping, the sourcing of geographical names of a recently inhabited area, the confirmation of geographical names of features of borders and the confirmation of names of local hydrography, as well as academic and historical purposes, among others.

Office preparation

It can be said that the collection begins before going to the field, at preparation time, as good pre-field planning is key to unfolding the operation as best as possible, avoiding potential drawbacks. It is especially relevant in cases in which the collection is carried out in places with little infrastructure, of difficult access and with precarious communication, as illustrated in the pictures of fieldwork below.

Picture 2 - Fieldwork

Source: IBGE, Diretoria de Geociências, Coordenação de Cartografia (archive).

A thorough preparation for the collection can significantly reduce the amount of work to be carried out in the field and, consequently, the cost of the activity.

Fieldwork organization

The organization of the fieldwork involves planning the infrastructure for the collection, the identification and delimitation of the area to be covered, as well as the definition of the support material. Having defined the goal of the collection, it is advisable to adopt the following flow of actions to organize the fieldwork:

- Definition of the spatial geography for the collection.
- Definition of the team, preferably led by a supervisor with previous knowledge of geographical names.
- Delimitation of the area of work of each team, provided that there is more than one[4];
- Establishment of the schedule;
- Definition of the logistics[5]; and
- Definition of the support material to carry out the collection.

[4] Depending on the size of the defined area and its conditions, an appropriate vehicle should be considered to cover that geography, like a 4x4 traction one in areas of difficult access.

[5] If more than one day of collection is scheduled, it is required to establish, in this step, possible places for overnight stay and feeding of the team(s).

It is important to list the tools that will be used in the collection, like these mandatory ones: area maps, field notebook, voice recorder, photographic camera, notebook/tablet/mobile phone and GNSS navigation receiver, among others available for the team. This equipment is required to register the information and observations obtained in the field.

Whenever possible, in the definition of logistics, city administrations of the Municipalities in the area to be covered should be contacted, in order to be informed of the collection that will cover the local territory. The previous contact might favor the involvement of the city administrations, mainly to provide documents, maps and other forms of support to the fieldworks. In addition, telephones of city administrations, institutes, churches, notaries, schools and health centers, among other references in the area to be worked, should be researched in websites.

Research, gathering and preparation of inputs and information for comparative analysis

The step of office preparation consists of the research, selection and organization of the existing material and inputs about the area, which should be in accordance with the preestablished objective of the collection. Appendix 1, at the end of the publication, presents some sample documents for use in a comparative analysis.

At this step, it is necessary to select an input to be a reference for the entire work, for example, a municipal map, a cartographic base, a text describing borders, etc. This reference input will be called original input, and it will be the basis for comparative analysis and for the clarification of doubts arising from the field investigation.

The inputs should be obtained from the agencies in charge of the country's systematic mapping, or from other interested agencies and institutions, either governmental or not. It is worth mentioning that, when in contact with these institutions, teams should explicit the objective of the work and the results generated by it.

The cartographic inputs that will be used in the comparative analysis should be compatible with the geodetical reference system and with the cartographic projection defined for the project, thus enabling the adequate use in a Geographical Information System - GIS.

In order to meet the specificities of the collection of geographical names, it is important to research and analyze the characteristics and singularities of the area to be covered. This analysis will support the conduction of the work. So the historical importance of the region should be considered, as well as what its economy produces, the forms of production, as well as the characteristics of its population, such as: ethnical elements; significant occurrence of emigration/immigration; accent, pronunciation and vocabulary; religion; social indicators, including illiteracy; percentage of the population served by public basic sanitation infrastructure, school education, healthcare units and hospitals, among other aspects. Likewise, it is important to collect as much information as possible about the geographical names themselves. It is also suggested that information be researched in specialized literature and in academic papers associated to the patterns that motivate the toponomy of the area.

All the documents used for research and comparative analysis should be filed, and all the documentation obtained during the campaign, their copies or electronic

addresses should be attached to the material collected during the preparation step, so that any existing doubts can be cleared later on.

It is worth mentioning that office research is of extreme importance to the process of standardization of geographical names, for, when it is carried out according with these guidelines, it facilitates the process as a whole, besides guiding and optimizing collection in the field.

Development of the geographical names index

The doubts observed during the comparative analysis of inputs should be consolidated into a single file and displayed, one by one, on a map, in a digital or non-digital environment[6], to identify the feature whose name will be researched and, consequently, guide the route to be followed in the field.

As a model for the organization of these doubts, a suggestion is to adopt a table that can store the main information generated in the office, referred to, in this Manual, as geographical names index. This table can be an electronic spreadsheet, or linked to a vector file (table of attributes) for GIS environments. Chart 1 presents a possible model for the geographical names index.

The geographical names index will be used throughout the collection, during office preparation and in the field, where it will be complemented. At this phase of work in the office, before the campaign, only some columns will be filled out.

The fields described below, organized according to the model in Chart 1, form the minimum structure needed for the geographical names index:

Item/Identifier - a number that individualizes the feature whose geographical name will be researched.

Geographical name - the geographical name listed in the original input, complete and without abbreviation, that is, consisting of a generic term, if any, a connective, if there is one, and a specific term. In case there is a variant name in the original input, it should be included, in the same format as it appears in this document, preceded by the conjunction "or". For example, Rio da Bica or Rio do Bairro da Pedra. Furthermore, it is advisable not to omit or add accents, cedillas, hyphens, umlauts, etc. The geographical name in this column should be spelled exactly as in the original input, since the column will not be edited during collection in the field of after that step. The corrections and modifications in the geographical name will be listed in the column "Updated geographical name", after the collection. In this case, the original names will be considered a historical name of the feature[7].

Coordinates - coordinates of the feature whose geographical name will be surveyed. This field is necessary when the choice is an electronic spreadsheet not linked to a vector file.

[6] Creation of numbered points in a structured vector format file for use in GIS, or include them manually on maps or printed images of the surveyed area.

[7] The historical name refers to different denominations received by the feature over time and no longer used.

Type of feature - description of the nature of the feature, such as, for example, relief, locality, hydrography, among others. Depending on the objective defined and on the knowledge of the team, the type of feature can be expressed by means of the category and class of Technical Specifications for the Structuring of Vector Geospatial Data (ET-EDGV 3.0[8].

Doubts listed in the office - doubts observed during the comparative analysis. This column should be filled out with descriptions of the inconsistencies found, mentioning the geographic names that are different from those in the original input, as well as the respective sources, besides other relevant observations, such as, for example, the origin of the name and the motivation for it.

Updated geographical name - corrected or updated geographical name, included after the collection in the field or in the office research, in certain cases, as described in the topic "Conduction of the comparative analysis".

Solution and justification - description of the final status of the geographical name after collection (confirmed, included, excluded or modified) and the justification for such, when appropriate. The documental sources that support the decision, depending on the case, should also be listed.

Field information - information collected in the field survey and considered relevant by the interviewer for the solution adopted. This column can have indications about the history of the name and the motivation for it, historical variants (name used in the past), among other elements.

[8] Technical Specifications for the Structuring of Geographical Vector Data constitute the guiding pattern for the interchange of digital cartographic data. In the conceptual modeling of geospatial data, the occurrences (instances) are represented by classes of objects of a same nature and functionality. These classes were grouped into categories of information, whose basic premise is the common functional aspect (COMISSÃO NACIONAL DE CARTOGRAFIA, 2017).

Chart 1 - Proposal for a geographical names index

Project Identification:

Item/ Identifier	Geographical name	Geographic coordinates	Type of feature	Doubts listed in the office	Updated geographical name	Solution and justification	Field information

Source: IBGE, Diretoria de Geociências, Coordenação de Cartografia.

Conduction of the comparative analysis

The comparative analysis consists of the combination of the several inputs obtained, with a focus on the geographical names that fulfill the objective of data collection. The available inputs should be compared in terms of both the geographical name (spelling and the name itself) and the position of the feature that the name designates. The results of the comparative analysis should be recorded in the geographical names index, as indicated before.

This analysis aims at the identification of divergence and absences, with the latter being significant features not mentioned in the original input. In cases of absence, the column "Geographical name" of the geographical names index should be blank. If there is a name in another input, it should be added to the column "Doubts listed in the office."

Some doubts identified in this analysis can be cleared in the office, considering the documental and bibliographical research that supports the solution. For example: as the original input, there is "Rio da Cancao", however, in several other pieces of material, Rio da Canção. In this case, the doubt was cleared during the research in the office, and the solution was to adopt Rio da Canção, as, due to the consistent of the use of "Canção", it is safe to infer there were typing mistakes. In such case, there is no need for collection in the field, but the modification should be recorded in the column "Updated geographical name" for the sake of update of the original input.

The results of comparative analysis make it possible to guide collection in the field because they define, in a specific terms, the areas that will be visited to clear the doubts not resolved in the office.

Due to the field logistics demanded by collection, the originally established schedule (topic Fieldwork organization) may need adjustment. Whenever possible (with available time, staff, money, etc.) other areas in the field where doubts have not been identified during comparative analysis can be visited. That is only valid because geographical names are subject to changes, due to territory occupation, appropriation of the language by speakers, among other factors.

Picture 3 illustrates the comparative analysis step, which can be carried out in group.

Picture 3 - Teams during comparative analysis

Source: IBGE, Diretoria de Geociências, Coordenação de Cartografia (archive).

Identification of linguistic doubts and spelling review

At this step, particular aspects concerning the spelling of geographical names are observed. In this respect, it is advisable to:

a. Observe if the geographical names are misspelled, with blanks preceding the name, in the middle of the name, or in the middle of a word, as well as if there are inadequate characters, fonts of different types or sizes, etc.;

b. Observe if the first letter is capitalized in generic and specific terms;

c. Observe, in geographical names with a hyphen, if both elements start with a capital letter. For example: Serra do Rola-Moça;

d. Check if the spelling of geographical names of Municipalities and Districts is in accordance with the one in the laws that created them. For such, see the Brazilian Territorial Division - DTB, available on the IBGE website;

e. Check if the geographical names of other features created by law, such as Indigenous Lands, Conservation Units, etc. are written according to the legal act that established them;

f. Observe if the geographical names of anthropic geographic features, such as schools, airports, hospitals, healthcare units, churches, etc. are spelled as in the registries of their respective regulatory agencies.

g. Observe if the spelling of geographical names not regulated by law, such as hydrographic features, is in accordance with current spelling rules;

h. Observe if the geographical features not regulated by law, such as relief features, for example, located in the area or in the surroundings of a Municipality, District, or another feature created by law, receive the same specific denomination as these entities. The specific term of the feature should take the same spelling of the Municipality, District or other entity, according to the legislation that created them, as illustrated in Figure 3;

i. Observe occurrences such as:

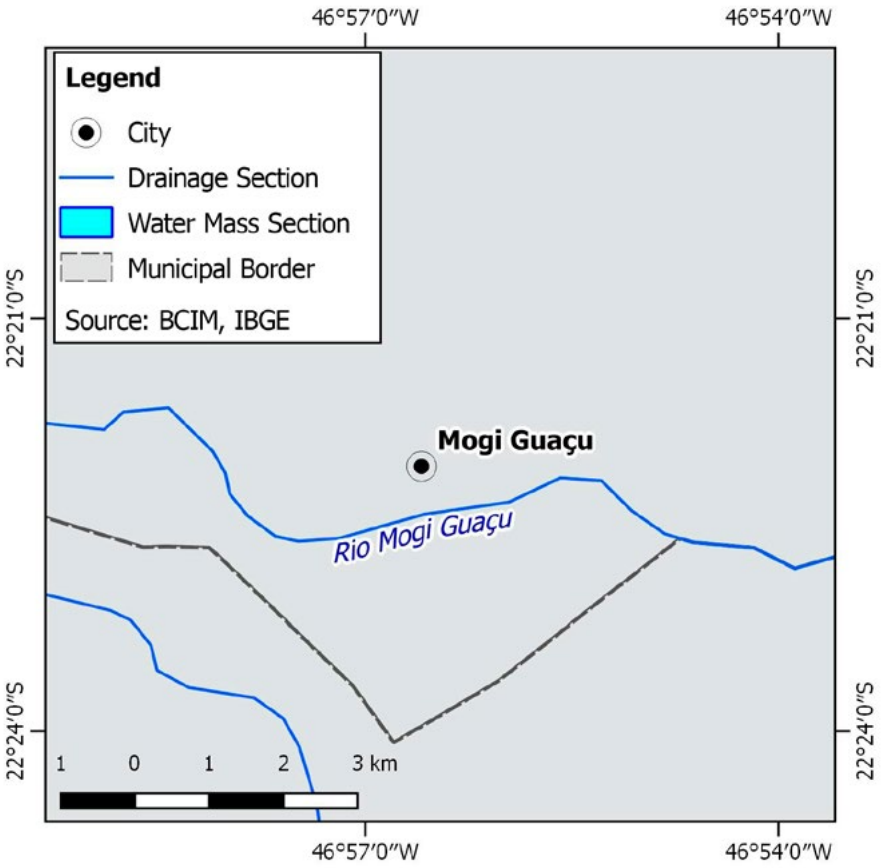
- Use of conflicting connectives in a specific name. Example: Serra do Beleza;
- The same feature having the same generic names and different specific names. Example: Ribeirão dos Cochos and Ribeirão dos Coxos;
- Absence of a generic name (except in the case of a Locality).
- The same feature with the same specific names and different generic names of the same nature. Example: Ribeirão Verde and Rio Verde; and
- The same feature with variant names in a given section parts but not in others. In this case, it is advisable to ask for confirmation of the variant name coverage or if it is valid for the element as a whole. Example: Rio Aguapeí ou Rio Feio, Rio Feio. Figure 4 illustrates this situation.

j. Observe the occurrence of unusual names, of unknown meaning for the proofreader, and never correct them without verification in the field, even when there is a similar word in dictionaries. In these cases, the collection of the motivation and of the meaning of the name is fundamental. Example: Rio Furtuoso (Paraná). Doubt: Furtuoso or Frutuoso? Solution: The survey

conducted in the field indicated that the correct one is Rio Furtuoso, because the term Furtuoso is a corruption of the word "*Tortuoso* (Tortuous)". Therefore, it is important to understand that, although the name is not yet listed in dictionaries, that does not mean it does not exist.

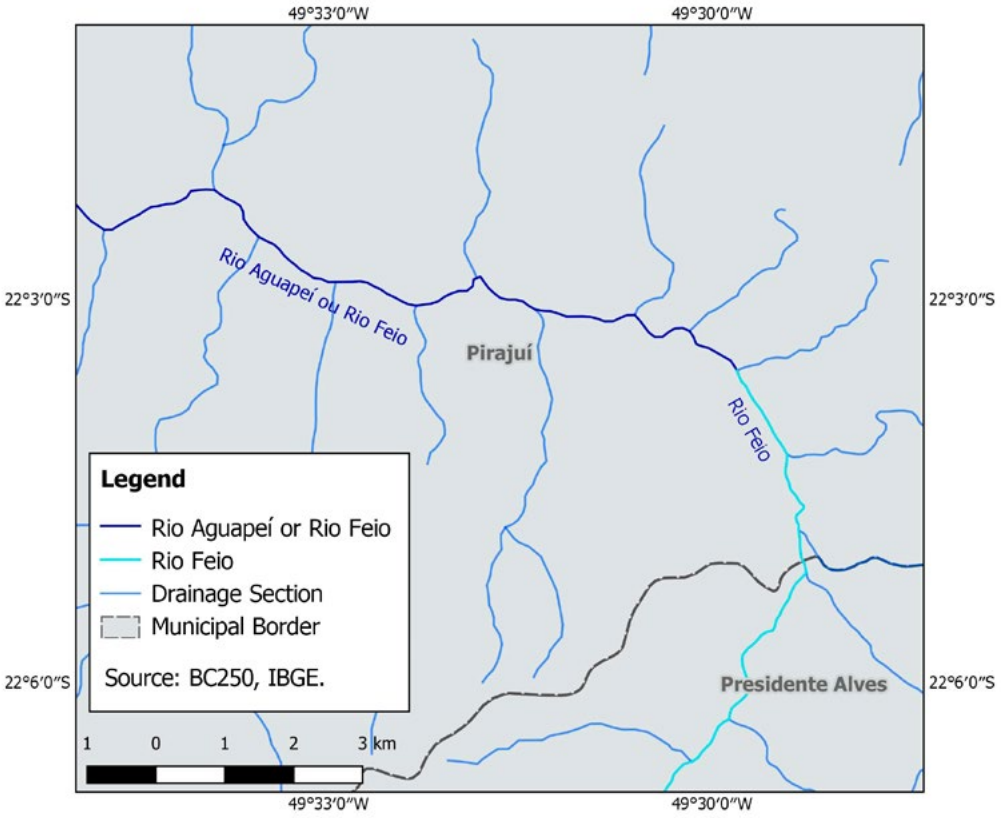
k. In case of disagreement with the spelling rule, for example, concerning the use of diacritics, of "ç" or "ss", "g" or "j", etc., it is advisable not to correct the terms at first. The use of this spelling should be researched in the office, then the column Doubts listed in the office should be filled out with the sentence "Check if this spelling is traditional," and any important information found should be added. In this respect, see the topic **Checking and confirmation of traditional spelling**, which deals with procedures to attest and record the traditional spelling in the field.

Figure 3 - Name of watercourse standardized according to the locality name: Mogi Guaçu (Mogi Guaçu, São Paulo)



Source: IBGE, Diretoria de Geociências, Coordenação de Cartografia.

Figure 4 - Watercourse with occurrence of a variant name in a given section: Rio Aguapeí or Rio Feio (Pirajuí, São Paulo)



Source: IBGE, Diretoria de Geociências, Coordenação de Cartografia.

Examples of doubts for the field investigation

Chart 2 presents, as an example, a geographical names index filled out with the results of comparative analysis for field collection.

Chart 2 - Example of a geographical names index filled out after comparative analysis

Project Identification:

Item/ Identifier	Geographical name	Geographic coordinates	Type of feature	Doubts listed in the office	Updated geographical name	Solution and justification	Field information
1	Picassinho		Locality_Isolate_Rural_ Cluster_Village	Check spelling.			
2	Quicé dos Ribas		Locality_Local Name	Check spelling. Special attention to the meaning of Quicé and for the history of the name and the motivation for it.			
3	Xaxim		Locality_Isolate_Rural_ Cluster_Thorp	Identify the correct denomination used by the community: Xaxim or Mosquito?			
4	Letreiro		Locality_Local Name	Is the name of the locality Letreiro or Latreiro?			
5			Hydrography_Watercourse	Riacho dos Oliveiras. Identify feature in the field. Unprecise location. There is only the Law of district creation, No. 425 of June 11, 1985 and it does not appear in any other input.			
6	Rio dos Índios ou dos Bugres		Hydrography_Watercourse	Confirm use of the variant. In the descriptive memorial of the municipality there is only Rio dos Indios.			
7	Salto Boa Vista		Locality_Local Name	Confirm name of the locality Salto Boa Vista or Boa Vista			
8			Locality_Isolate_Rural_ Cluster_Village	Confirm existence of the locality Ponte Alta. Mentioned in the ANATEL registry.			

Source: IBGE, Diretoria de Geociências, Coordenação de Cartografia.

Field notebook

The field notebook is an instrument by means of which information collected in the field is registered. It helps clear possible doubts arising during and after field activity, besides constituting an important reference for the research of geographical names. This notebook, with a model proposed in Chart 3, should be elaborated before the start of interviews and filled out almost entirely in the field. Thus, except for the identification of the project and of the interviewer, the notebook should not be filled out in the office, not even the number of the item/identifier, or the geographical names to be surveyed.

It should be kept in mind that the field notebook should be filled out in legible handwriting, and, if necessary, in block letter.

The field notebook can be checked following the process of standardization for clarification of some issues. Therefore, in spite of its flexible use, some instructions should be followed for efficient form completion, also aiming at the organization of collected information. The minimum structure of a field notebook should include:

a. A heading, with the following elements: Project identification, Interviewer identification, and Date (day/month/year)

b. Data of the informant, with the following elements: Name, Age, and Period of residence in the locality; and

c. Information about the geographical names researched with the following elements:

- Item/Identifier - number of the item or identifier of the feature in the geographical names index. This field will link the office research to the collection;
- Geographical name provided by the informant - geographical name as recognized in the area.
- Variants - other geographical names provided by the informant for the same feature; and
- Relevant information - any relevant information for the understanding of collected data, including history, motivation for and meaning of the name, among other aspects.

Additional information about the informant, if relevant, can be listed in the column "Name", in the section "Data of the informant", together with the name of the interviewed person, in parenthesis, such as, for example: Claudio Alves (father of Luís Alves); João Silva (founder of the Municipal Club); Marlene dos Santos (president of the residents' association), etc.

In the case of geographical names checked by means of signs or plates, or when the informants are not found, and the collection of the name can only take place by such means, the column "Name", of the section "Data of the informant", should indicate "Sign/Plate", and the respective sources of information should be photographed.

Chart 3 - Field notebook template

Project Identification: _____ Date: _____ Interviewer: _____

Data of the Informant

Name: _____

Age: _____ Length of residence in the municipality: _____

Item/ identifier	Geographic name provided by the informant	Variants	Relevant information

Source: IBGE, Diretoria de Geociências, Coordenação de Cartografia.

Fieldwork

Collection of geographical names

The collection of geographical names is seen as the survey and checking of names of geographical elements in the field. This activity is mainly based on interviews with local informants, which are documented, as presented in the topic **Field notebook**.

The information collected in the field should be transferred to the geographical names index as promptly as possible, so that the memory can be easily accessed, in case some relevant information has not been listed. Also, this practice makes it possible to detect problems, make necessary changes and, if required, go back to a previously surveyed area to improve the work.

In long collections, it is advisable that field activity be divided into rounds alternating collection, review of information, filling out of the geographical names index, elaboration of reports, among other procedures.

Interview

The interviews for the collection of geographical names aim at the verification of local and current uses of such nomenclature, and the information thus obtained contribute to decision making for the establishment of the standardized name.

Many field researchers have already noticed a praising tone or even an undisguisable pride in some informants as they talk about the place where they live. That occurs because people have a relationship of identity, of belonging in relation to their place of residence and/or birth and, for that reason, take pleasure in talking about it. So, when being interviewed, the informant usually tends to provide more information than simply answering the direct questions of the interviewer. These extra data, which, at first, seem less relevant, have the potential of making clear the historical variants, etymology, among other important aspects of geographical name. Always having in mind the need to keep the duration of interviews compatible with the time available for collection, it is advisable benefit the most from any information that might appear in these moments, giving them proper attention and taking notes of them.

Considering that fieldwork is a primary source of information, the more precise the work, the easier, faster and more efficient the standardization of geographical names in the office.

Choice of informants

According to recommendations of the *Manual for the national standardization of geographical names* (UNITED NATIONS GROUP OF EXPERTS ON GEOGRAPHICAL NAMES, 2006), three to five informants should be interviewed by collected name, but, in case of doubt about any denomination, that number can be expanded. The name and some information about the interviewee should be recorded, as it might be necessary to contact them to elucidate conflicting information.

There is no ideal profile for the interviewee, as any citizen can be a potential informant, regardless of their appearance, level of education, or socioeconomic conditions. The sensibleness of the interviewer choosing informants is very important, as, although they are not close to the geographic feature, they might have deep knowledge about it.

Interviews with old residents or those recognized as local leaders should be privileged, as these tend to have more knowledge about the region. It often occurs that, when approached, some informants appoint a certain resident as the "expert" on the region.

At times, only one informant is found. In this case, if the interviewee is sure and coherent, without any conflict in its own information, the name thus collected should be adopted, until, eventually, the opposite is observed. On the other hand, there must be cases when no informant is found. In these cases, names should be collected from signs and plates in the place, and from information found in the city hall or other local institutions.

Procedures during the interview

At first, it should be highlighted that, in case collection is associated to some institution, the teams that will participate in field activities should be properly identified, with name tags and uniforms.

Aiming at the best possible use of information collection during the interview, the following procedures should be followed:

- Before the interview, it is advisable to assess the best moment for its conduction. For example, when interviewing a rural worker/landowner in their workplace, one should not come so early, because the interview may coincide with a moment of a greater burden for the interviewee, who might not dedicate the necessary time and attention to it;
- When arriving, be sure to greet the interviewee with courtesy;
- After a short period of introduction to the interview, introduce yourself and inform the objective of the work; and
- Ask if the interviewee allows the interview to be recorded, and, in the affirmative case, turn on the voice recorder, placing it with discretion, preferably out of the interviewee's sight. It is important to highlight that the use of voice recorders does not invalidate the notes taken during the interview, and that all information considered relevant should be written down in the field notebook.

Only at the end of the interview, ask and take notes in the field notebook of the personal data of the informant in the columns "Name", "Age" and "Length of residence." The best moment to collect information is when the interviewee is already relaxed, in order not to embarrass them. The informant should be informed that their personal data are protected, in accordance with the General Data Protection Regulation - LGPD (Law no. 13,853, of July 08, 2019), and used only in the realm of the survey, in the phase of data analysis, in case it is necessary to provide further clarification and that, after this phase, the notebook in which information is found will be unidentified, as provided for in Law no. 13,709, of August 14, 2018, and in the LGPD that changed it.

When starting the interview, the interviewer should bear in mind that it is necessary to be willing to listen to what the informant has to say and avoid interrupting them. It is also necessary that the interviewer be careful not to demand from the interviewee only yes/no answers, simply confirming information brought from the office.

In case the informant deviates from the subject, it is advisable to redirect them, always politely, by asking new questions, for example: *Please, tell me more about what you were saying about that water course*. If the strategy does not work, the interviewer can, politely, end the interview.

There is no minimum or maximum duration for the interview. The time dedicated to it is determined by the quality of information being provided, without losing sight of the total time available for the interview.

The recommendations below should be followed during the conduction of the interview:

- Not using the presumed generic term of the geographical name (river, arroyo, lagoon, hill, school, etc.) in the question. In place of the generic term, use the following words or expressions:
  - "watercourse" for rivers; "water mass" for lagoons, lakes, etc.;
  - "elevation" for hills, mountains, etc.;
  - "building" for schools, museums, hospitals, etc.;
  - "property" for farms, smallholdings, etc.;
  - "location" or "place" for localities in general, such as hamlets, thorps, settlements, etc.
- Take note, in detail, of the generic term of the feature provided by the informant and never add a generic name on your own or create a name. These procedures have the objective of avoiding that the regional origin of the interviewer leads to a nomenclature that does not correspond to the denomination used in the area. For example, an "arroio" identified as "river", for having been collected by an interviewer from Rio de Janeiro who does not know that this term is popular in the South Region. The generic term informed may not correspond to the geomorphological classification or to any other established one. The generic term is part of the geographical name and not a classification. It indicates the type of feature, according to the understanding and perception of who nominated it. Therefore, cases like that of Lagoa Rodrigo de Freitas are commonly found, in Rio de Janeiro, whose geomorphological classification is laguna[9].
- Collect exactly the name provided by the informant. If there is any doubt about the accuracy of what was collected, the interviewer should write an observation about what they think the right form is in the column "Relevant information"; not to change or correct the information collected. If necessary and possible, ask the informant to write down the name, mainly if it is a foreign one.
- Take into consideration the phonetically correct register of what the informant says, that is, pay special attention to the collection of such information not to mistake similar sounds. As for the standardization of the geographical name, the moment of collection can be decisive because no matter how much research is done in the office, some problems can go unnoticed if the information is incorrectly collected in the field. The change of a sound in a word can alter the name of the element and

[9] According to Guerra and Guerra (2003), a laguna is a depression containing brackish or salt water located on the coastal edge, and a lagoon, according to IBGE (2015), is a depression of varied shapes – mainly tending to be circular – of shallow depths and filled with fresh or salt water. A lagoon can be defined as a lake of small size and depth.

generate unprecise results, without, necessarily, any inconsistencies in the spelling rules, as seen in Rio Piunduva and Rio Pianduva (Paraná). Also, the regional accents demand attention from the interviewer, for it can complicate matters regarding the understanding of the geographical name provided. That is the case of Rio Isabel Alves (Paraná), a tributary to Rio Paraná, which had its name collected as Rio Isabelar, due to the marked regional pronunciation of the informants. This type of problem is not detectable in the spelling review conducted in the office, so special attention is needed for the identification of sounds, without, however influencing or leading the informant towards imprecision.

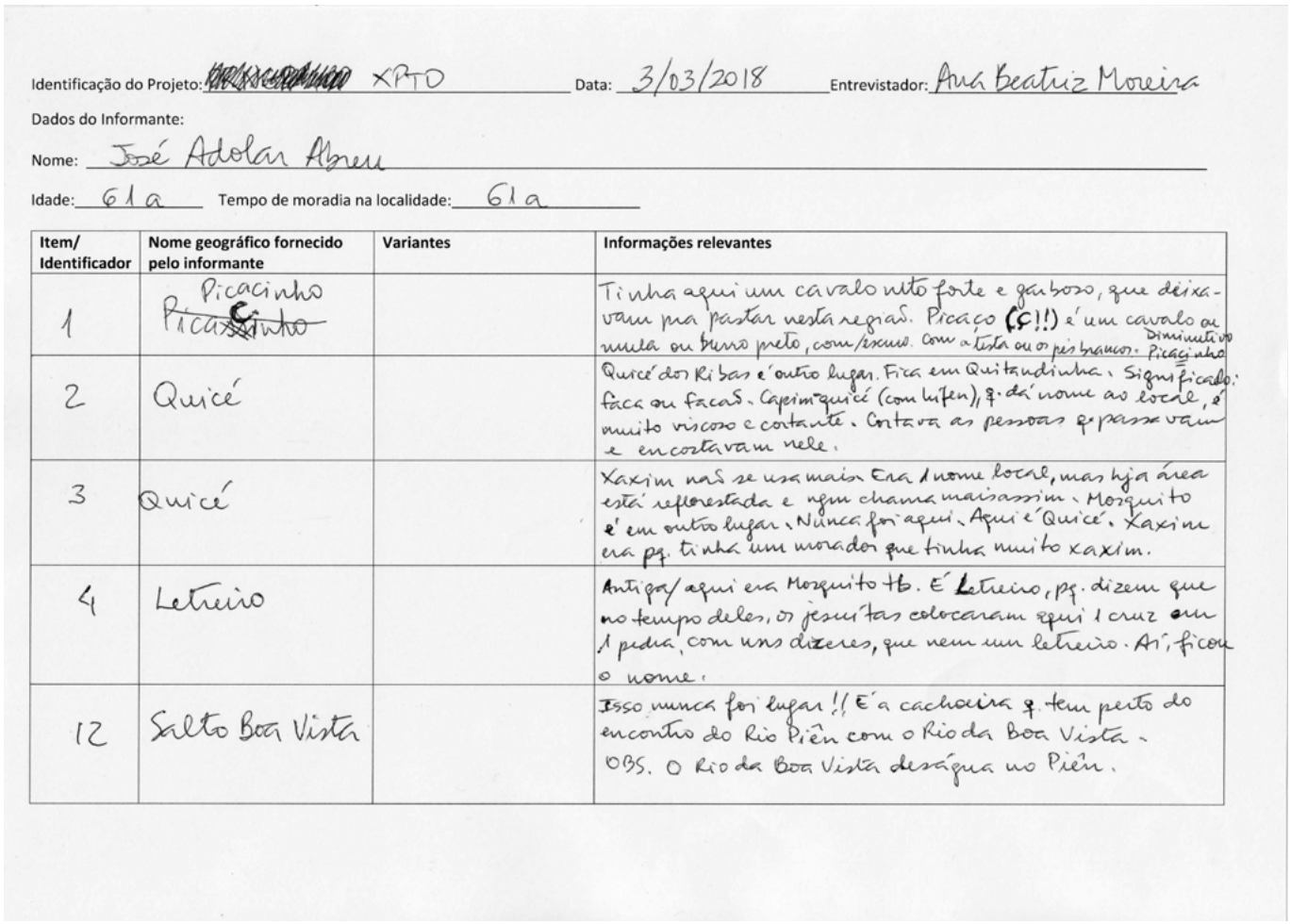
- Collect the motive and meaning of the name, mainly when in doubt about the accuracy of the information collected, or when the name is unusual and/or unknown.
- Try to identify the spatial coverage of the use of geographical names and of variants applied to the same feature, whenever possible. For example: there are variants of names of water courses and mountain ranges that only apply to certain portions of the feature and not to the entire feature, as it is the case of the name "Serra dos Órgãos", which only applies to the portion of the Serra do Mar in the State of Rio de Janeiro.
- Register, in detail, in the field notebook, the geographical names or features identified in the interview that were not listed in the phase of comparative analysis (topic Conduction of comparative analysis). Additionally, collect the coordinates of the element and identify the type of feature named.

Picture 4 shows teams working in several interviews. Picture 5 presents an example of a filled out field notebook.

Picture 4 - Teams conducting field interviews

Source: IBGE, Diretoria de Geociências, Coordenação de Cartografia (archive).

Picture 5 - Field notebook filled out with collected information



Identificação do Projeto: [redacted] XRTO Data: 3/03/2018 Entrevistador: Ana Beatriz Moreira

Dados do Informante:

Nome: José Adolar Abreu

Idade: 61 a Tempo de moradia na localidade: 61 a

Item/ Identificador	Nome geográfico fornecido pelo informante	Variantes	Informações relevantes
1	Picacinho ~~Picaxinho~~		Tinha aqui um cavalo muito forte e gaboso, que deixavam pra pastar nesta região. Picaço (ç!!) é um cavalo ou mula ou burro preto, com/exceto. com a testa ou os pés brancos. Diminutivo Picacinho
2	Quicé		Quicé dos Ribas é outro lugar. Fica em Quitandinha. Significado: faca ou facão. Capim-quicé (com hífen), q. dá nome ao local, é muito viscoso e cortante. Cortava as pessoas q. passavam e encostavam nele.
3	Quicé		Xaxim não se usa mais. Era 1 nome local, mas hj a área está reflorestada e ngm chama mais assim. Mosquito é em outro lugar. Nunca foi aqui. Aqui é Quicé. Xaxim era pq. tinha um morador que tinha muito xaxim.
4	Letreiro		Antigo/ aqui era Mosquito tb. É Letreiro, pq. dizem que no tempo deles, os jesuítas colocaram aqui 1 cruz em 1 pedra, com uns dizeres, que nem um letreiro. Aí, ficou o nome.
12	Salto Boa Vista		Isso nunca foi lugar !! É a cachoeira q. tem perto do encontro do Rio Piên com o Rio da Boa Vista. OBS. O Rio da Boa Vista deságua no Piên.

Source: IBGE, Diretoria de Geociências, Coordenação de Cartografia.

Note: In compliance with the General Data Protection Regulation - LGPD (Law no. 13,853, of Jul 08, 2019), the name and information about the informant are fictitious.

Audiovisual record of collection

The use of photographs to clarify matters of difficult interpretation of inputs can be of great importance. Details which can reveal relevant peculiarities should be photographed. In such cases, the coordinates of places from where pictures were taken should be obtained via GNSS receivers and recorded in the field notebook, in the "Relevant information" column of the name in question. Besides these cases, the following elements should be photographed in order to register or confirm information, as seen in pictures 6, 7 and 8:

a. Signs with feature names. For bridges, watercourses and other wide-coverage features, one should photograph existing signs in opposite positions, whenever possible, as, for instance, on both margins of a watercourse, to verify the occurrence of different names for the same feature.

Picture 6 - Sign indicating a hydrographic feature

Source: IBGE, Diretoria de Geociências, Coordenação de Cartografia (archive).

b. Signs with locality names.

Picture 7 – Sign indicating a locality

Source: IBGE, Diretoria de Geociências, Coordenação de Cartografia (archive).

c. Signs with the names of federal, state and municipal highways.

d. Buildings with plates relative to their name, as schools, libraries, churches, museums, hospitals, cemeteries, farms, etc.

Picture 8 - Plate of a rural property

Source: IBGE, Diretoria de Geociências, Coordenação de Cartografia (archive).

It is essential that the photographs be organized according to the item/identifier, so that they can be accessible and easily retrieved. Files could possibly have their names composed of: identification of area surveyed_item of photographed feature_number of picture. For instance: DistritoSantana_7_1, to designate the first picture of the feature numbered as 7, located in the "Distrito de Santana" (Santana District).

Checking and confirmation of traditional spelling

As mentioned in the topic **Identification of linguistic doubts and spelling review**, some geographical names are marked for further checking and confirmation, in the field, of the traditional spelling. To this end, the interviewer should try to get spelling information during the interviews, seeking for informants able to clarify the matter, such as researchers of local history, public school teachers who know the region well, municipal civil servants working in the administrative areas related to the feature whose geographical name is being investigated, among others.

It is also necessary to observe the use of the surveyed geographical name in signs, plates, ads, local publications, among other references, as already mentioned.

An example of traditional spelling is that of the Município de Santa Izabel do Pará (Pará), since, by the current spelling rules of Brazilian Portuguese, the name "Izabel" should be written with an "s", as observed in the Município de Santa Isabel do Rio Negro (Amazonas).

Checking of the names surveyed in contiguous areas

Although the same feature can have more than one name in its coverage area, it is fundamental to assess the need for deepening the research when there are discrepancies between the collected names in the field during the campaign, especially when the collection is carried out by different teams. Thus, it is necessary to compare the geographical names collected for features that overlap in the contiguous areas surveyed by different teams during the campaign. Such checking aims at detecting possible discrepancies among the names of elements, so that they can be verified and solved in the field, as it can be very difficult to retrieve certain pieces of information in the office.

How to fill out the geographical names index

Next, guidelines on the filling out of the index of the geographical names are presented, according to the information in the field notebook.

Confirmed geographical names

In case the geographical names present in the original input are confirmed during the collection phase, the column "Updated geographical name" should repeat the name which is in the column "Geographical name", and the column "Solution and justification" should be filled out with the term "Confirmed", in addition to other information considered necessary.

Non-confirmed geographical name

Geographical names which are not confirmed in the field for any reasons, including the lack of respondents or insufficient information, should be blank in the column "Updated geographical name", and the column "Solution and justification" should be filled in with the expression "Not confirmed".

Changed geographical name

Geographical names which were replaced by new ones, or corrected due to identified inconsistence, should have the column "Updated geographical name" filled in with the current local use name collected, and the column "Solution and justification" should be filled out with the term "Updated", in addition to other information considered necessary.

Excluded geographical name

Geographical names which are no longer used or relative to no longer existing features, and were not replaced, should be excluded. In these situations, the column "Updated geographical names" should be blank, and the column "Solution and justification" should be filled in with the term "Excluded". The reason for exclusion should be described in that same column of the index. It is worth highlighting that the excluded name should be recorded/registered as a historical name.

Included geographical name

Geographical names can be included based on two different situations:

Doubts listed in the office

If the geographical name was already listed as a doubt to be included, it is only necessary to fill out the "Updated geographical name" column with the name collected, and the "Solution and justification" column should be filled out with the term "Included". The reason for inclusion should be described in that same column of the index.

Name identified exclusively in the field

If the geographical name or the feature with the collected name were not listed in the index, a new item should be included by the end of the index, in the "Item/identifier" column, keeping the numerical sequence. The "Coordinates" column (in case vector files are not being used) and the "Type of feature" column should be filled out, as well as the "Updated geographical name" column. The "Solution and justification" column should be filled out with the term "Included" and the reason for inclusion should be described in that same column of the index.

In the cases of inclusion of names of localities, it is recommended that the coordinates relative to the main square or cemetery be collected. If such features do not exist, the locality "center" should be sought, i.e., the area where trade is concentrated.

For inclusions, it is especially recommended to seek the motivation and meaning of the geographical names, particularly for those exclusively identified in the field.

How to update the positioning of geographical names

As collection is underway, possible errors related to the wrong geographical positioning of a certain geographical name can be identified in the original input. For such cases, it is mandatory to update the right positioning of the name, by means of a GNSS receiver in the field.

The name to have its positioning updated should present the "Solution and justification" column filled out with the phrase "Change of positioning: (XX, YY)", where XX, YY are the new coordinates collected.

Updating the types of features

In exceptional situations, changes in the type of feature designated by a geographical name can be identified in the field. An example is the change in the classification of a locality, which may be altered from an Isolate Rural Cluster to a Village; another observed case was that of a waterfall that ceased to exist due to the building of a dam which received the name of the original natural feature. In such cases, the original item should be excluded, in accordance with the guidance described in the topic **Excluded geographical name** and that very same geographical name should be included, with the indication of the new type of feature, as explained in the topic **Included geographical name**. In both items of the geographical name index, either the excluded or the included one, it is recommended that the expression "Change of type" be added in the "Solution and justification" column.

Office consolidation of field information

By the end of collection, interviewers should organize their field notes and finish the filling out of the geographical name index. Chart 4 exemplifies the filling out of a geographical name index after the fieldwork is finished.

It is important to carry out a final review of the filling out of the geographical name index, as well as to organize and file both the material obtained and/or used during collection and all the electronic addresses and documents used in the survey and in the comparative analysis. Such procedures are necessary to justify the decisions made and to facilitate access to information, should any future questions arise in relation to the geographical name of the surveyed area.

At last, it is recommended to write a final work report, in which the following information is included: general description of the activities; difficulties and solutions found in the field; description of pending situations, if any; amount of analyzed names; statistics by final situation of the name, i. e., confirmed, included, changed names, etc.; as well as suggestions and recommendations for future work.

Chart 4 - Example of a geographical names index filled out after fieldwork

(to be continued)

Project Identification:

Item/ Identifier	Geographical name	Geographic coordinates	Type of feature	Doubts listed in the office	Updated geographical name	Solution and justification	Field information
1	Picassinho		Locality_Isolated Rural_cluster_Village	Check spelling	Picacinho	Updated. Spelling updated. Picaço, with a (ç), is a horse, mule or dark donkey, with a white forehead or foot. Picacinho is the diminutive form.	The name Picacinho is because there was a very strong and beautiful horse in this region; Picaço is a dark horse, mule or donkey, with a white forehead or feet. Picacinho is the diminutive.
2	Quicé dos Ribas		Locality_Local Name	Check spelling. Special attention to the meaning of Quicé and to history of the name and its motivation.	Quicé	Updated, because informants reported that Quicé dos Ribas is another locality in Quitandinha, out of the area of coverage of the survey. Spelling of Quicé confirmed.	Quicé is a small knife or um facão, and quicé-grass, which designates the locality, is a type of very thick and sharp type of grass, which cuts people who pass by it.
3	Xaxim		Locality_Isolated Rural_cluster_Thorp	Identify the right denomination used by the community: Xaxim or Mosquito?	Quicé	Excluded. According to informants, Xaxim was a local name which now is a reforested area that is no longer designated as such. The place here is called Quicé. Mosquito is elsewhere. Inclusion of Mosquito in item 11.	The name Xaxim comes after a local resident who grew this vegetable.
4	Letreiro		Locality_Local Name	Is the name of the locality Letreiro or Latreiro?	Letreiro	Letreiro confirmed.	According to the oral tradition, the Jesuit attached a cross to a rock that had some words on it, like a sign (Letreiro, in Portuguese). That gave origin to the name of the locality. According to informants, it was once part of Mosquito, which was also a local name.
5			Hydrography_ Watercourse	Riacho dos Oliveiras. Identify feature in the field. Imprecise location. Only seen in the Law No. 425 of 11/06/1985 that created district and it is not part of any other input.		Not confirmed. Not found. No informants.	

Chart 4 - Example of a geographical names index filled out after fieldwork

(conclusion)

6	Rio dos Índios or dos Bugres		Hydrography_ Watercourse	Confirm use of the variant. In the descriptive memorial of the municipality it appears as Rio dos Índios.	Rio dos Índios or dos Bugres	Variant confirmed	
7	Salto Boa Vista		Locality_Local Name	Confirm locality name: Salto Boa Vista or Boa Vista		Excluded. Change of type. According to informants, Rio Piên receives water from Rio da Boa Vista. Close to the area where Rio da Boa Vista and Rio Piên meet, there is a waterfall. It is not, nor has it ever been, a locality. Correction by means of the inclusion of the cascade (salto in Portuguese) in item 12.	
8			Locality_Isolate_ Rural_cluster_Village	Confirm existence of the locality Ponte Alta. Mentioned in the registry of ANATEL.	Ponte Alta	Included. Existence confirmed in the field.	
9	Areias		Locality_Local Name		Baixada	Updated. Previously found as Areias in the original input. Change identified in the field.	.
10	Palmito de Cima		Locality_Isolate_ Rural_cluster_Village		Palmito de Cima or Palmitinho	Variant included. Found as Palmito de Cima in the original input, but the variant was found in the field.	Named as such because there were many palm trees in the place.
11			Locality_Isolate_ Rural_cluster_Village		Mosquito	Included. Based on the survey conducted for item 3.	It was just a local name, there was no village. The origin of the name Mosquito was the occurrence in the place of a type of big white mosquito.
12			Hydrography_ Waterfall		Salto Boa Vista	Included. Change of type. Correcting item 7. According to informants, Rio Piên receives water from Rio da Boa Vista. Close to the area where Rio da Boa Vista and Rio Piên meet, there is a waterfall. It is not, nor has it ever been, a locality.	

Source: IBGE, Diretoria de Geociências, Coordenação de Cartografia.

Final remarks

The content of this Manual was conceived together with IBGE topographers and reambulation technicians, based on their experiences in mapping campaigns occurred at different places and at different times in the Brazilian territory.

In addition to gathering the main grounds and methodological procedures for collecting geographical names in the field, this Manual also plays the role of preserving and disseminating practical knowledge acquired along the process by the Institution's valuable Technical Body, a key component of its organizational culture.

We hope this Manual can contribute to the continuous work improvement of IBGE's professionals, as well as to the other Brazilian institutions, and, in this respect, receiving feedback and criticism is very important.

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Appendix

1 Examples of documents that can be used in the comparative analysis

1 Examples of documents that can be used in the comparative analysis

- Vector cartographic bases on the available scales;
- Brazilian Territorial Division - DTB, available from: https://www.ibge.gov.br/geociencias/organizacao-do-territorio/estrutura-territorial/23701-divisao-territorial-brasileira.html?=&t=acesso-ao-produto;
- Topographic maps, most commonly identified as topographic sheets, on available scales: 1:25 000, 1:50 000, 1:100 000, 1:250 000 and 1:1 000 000;
- Statistical Municipal Maps ad Municipal Maps;
- Latest Official Border Descriptions (municipal borders, borders of special areas, etc.);
- Documentation obtained from Border Demarcation Commissions, in the case of international borders;
- Other cartographic documents and mapping, if any, from city administrations, electricity, water and telephony companies, municipal secretariats of works, of environment and the like;
- Record of localities from the last Population Census carried out by the IBGE;
- Image-maps;
- Satellite images;
- Google Earth and other Google applications of geographic information;
- Open Street Map;
- Locality lists issued by city administrations;
- Lists of schools, linked to their respective localities, usually issued by the Secretariat of Education of Municipalities within the surveyed area;
- Lists of rural chapels, associated to their respective localities, provided by Municipal parishes or by the diocese;
- Bibliographical research on the region (final papers, theses, dissertations, books, monographs, etc.);
- Federal, state and municipal highway maps, with prefixes as well as names of streets and localities, facilitating access to the region (area), obtained from the National Department of Transportation Infrastructure - DNIT, from State Highway Departments - DERs) and from city administrations;
- Records of rural properties with significant local economic activity, obtained from city administrations;
- Registry from the National Telecommunications Agency - ANATEL, with information on ZIP codes, street names, Municipalities and Federation Units, as well as on latitudes and longitudes where public free telephones are located and their respective numbers;

- National Spatial Data Infrastructure - INDE, available from: www.inde.gov.br; and
- Portuguese language dictionaries[1], onomastic dictionaries and the *Vocabulário Ortográfico da Língua Portuguesa* (Portuguese Language Orthographic Vocabulary), by the Brazilian Academy of Letters - ABL. In the case of geographical names of Indigenous origin, please consult specific dictionaries of the proper linguistic branches, as for instance, dictionaries of the Tupi-Guarani language..

Next, there is an example of the preparation of information for comparative analysis, a step approached in **Research, gathering and preparation of inputs and information for comparative analysis**, based on lists of schools by locality, provided by Secretariats of Education of the Municipalities within the surveyed area.

(to be continued)

School	Municipality	Locality	Address	Comments
Astrogildo de Macedo, E R M-EF	Almirante Tamandaré	Mato Dentro	Rodovia dos Minérios – Km 19	
João Johnson, E R M-EF	Almirante Tamandaré	Morro Azul	Estrada Principal do Morro Azul	
Maria Cavassin Manfron, E R M-EF	Almirante Tamandaré	Capivara Manfron	Estrada Principal da Capivara	Check if this locality is an inclusion, or if is item 8 of the geographical names index.
Serzedelo de Siqueira, E R M-EF	Almirante Tamandaré	Pacotuba	Estrada Principal do Pacotuba, s/n	
Guarituba, C E-EF M	Piraquara	Guarituba	Rua Pastor Adolfo Weidmann, 977	
Heinrich de Souza, E R M-EF	Piraquara	Guarituba	Rua Juri Danilenko, 3468	
Idília Alves de Farias, E R M-EF	Piraquara	Guarituba	Rua Ps Adolfo Weidmann, 49	
Ivanete M de Souza, C E-EF M	Piraquara	Guarituba	Rua Betonex, 2220	
Jomar Tesserolli, E R M-EF	Piraquara	Guarituba	Rua Verginio Batista de Souza, 63	
Marilda C Salgueiro, E R M-EF	Piraquara	Guarituba	Av Ps Adolfo Weidmann, 2807	
Rudi Heinrichs, E R M-EF	Piraquara	Jardim Guaritubinha	Av das Orquideas, 388	This locality is not on the map, but the site of the Secretariat of Education it is classified as Rural. If it is confirmed, include this locality too.
Capoeira dos Dinos, E R M-EF	Piraquara	Capoeira dos Dinos	Rua Eduardo Rocha Sn	Check if it is item 30 of the geographical names index.
Carmela Dutra, E R M-EF	Piraquara	Águas Claras	Estrada do Mato Grande	
Julia Wanderley, E R M Dona-EF	Piraquara	Laranjeiras	Rua Wagner Luis Boscardin, 1001	
Mbya Arandu, E E Ind-EF	Piraquara	Aldeia Araçá-I (lê-se araçá-i ??)	Est da Barragem da Sanepar	Indigenous school – include the indigenous village (Guarani) and check the information (source: http://www.vivafavela.com.br/materias/cultura-e-modernidade-de-m%C3%A3os-dadas-atrav%C3%A9s-dos-tempos): The territory of the village is not acknowledged as indigenous, and was granted by the municipal administration. The name of the school means "Guarani knowledge". The village of Araça-i is named as such because, when the tribe chief Marcolino went searching for a place for the tribe to settle (they had left Mangueirinha because of religious conflicts between indigenous peoples) he saw the great number of araçá (fruit) tress in the region.

[1] In this respect, a suggested source is: HOUAISS, A.; VILLAR, M. de S.; FRANCO, F. M. de M. *Dicionário Houaiss da língua portuguesa*. Rio de Janeiro: Objetiva: Instituto Antônio Houaiss de Lexicografia, 2009. 1986 p. Acompanha 1 CD- ROM. Ver também: FERREIRA, A. B. de H. *Novo dicionário Aurélio da língua portuguesa*. Coordenação e edição de Marina Baird Ferreira e Margarida dos Anjos. 4. ed. Curitiba: Editora Positivo, 2009. 2120 p.

(conclusion)

School	Municipality	Locality	Address	Comments
Bortolo Cavassin, E R M-EF	Colombo	Uvaranal	Rua Jose Bonato Strapasson Sn	Neither the school nor the locality is on the Map. Check both for inclusion.
Eugênio Belotto, C R M E I Pe	Colombo	Cercadinho	Rua Francisco Motin Neto, 288	Check if this locality of Cercadinho is item 19, Cercadinha.
Imbuial da Roseira, E R M-EI EF	Colombo	Imbuial da Ribeira	Estrada da Ribeira	Check if this locality is Imbuial (38 of the geographical names index) on the Map.
João José Gasparin, E R M-EI EF	Colombo	Poço Negro	Rua Avelino Motin, 800	Check if this locality is item 18 of the geographical names index, Colônia Poço Negro
Maria Antonieta Farani, E R M Irmã-EF	Colombo	Capivari	Rua Verginio Arcie, 400	Check if this locality is item 23 of the geographical names index, Barra do Capivari.
Tiradentes, E R M-EF		Campestre	Rua Farao Cavalli Sn	
Abrahão Miguel Elias, E R M-EI EF	Rio Branco do Sul	Açungui		
José Elias, C E C-EF M	Rio Branco do Sul	Açungui	Estrada Principal do Açungui, s/n	
Barra do Jacaré, E R M DE-EF	Rio Branco do Sul	Barra do Jacaré		This locality is not on the Map. Check if it is item 87 of the geographical names index, Jacarezinho.
Benedita Faria Pioli, E R M-EF	Rio Branco do Sul	Florestal		This locality is not on the Map. Check it out.
Boqueirão da Serra, E R M-EF	Rio Branco do Sul	Boqueirão da Serra		
Ângelo Mottim, E R M-EF	Cerro Azul	Estrelas	Rua Principal s/n	Check if this locality is item 107 of the geographical names index, Estrela, or 109, Barra das Estrelas. Check the correct name of the locality.
Bomba, E M DA-EF	Cerro Azul	Bomba	Rua Principal s/n	
Augusto A. Da Paixão, C E C-EF M	Cerro Azul	Bomba	Rua Principal s/n	
Cabeceira do Ribeirão do Veado, E R M-EF	Cerro Azul	Cabeceira do Ribeirão do Veado	Rua Principal s/n	Ribeirão dos Veados (item 169) must be close to this locality, which is not on the Map. Check if the name of the Ribeirão matches that of the locality.
Lageadinho, E R M DE-EF	Cerro Azul	Lageadinho	Rua Principal s/n	Check if the school is item 164 of the geographical names index. The school is spelled with a "G". On the map the name of the locality is spelled with a "J" (correct spelling), item 162. Check if, in the location, the traditional name contains a G. Attention to the motive for this choice: that can be a family name with this spelling.
Ribeirão do Veado, E R M DE-EF	Cerro Azul	Ribeirão do Veado	Rua Principal s/n	Ribeirão dos Veados (item 169) must be close to this locality, which is not on the Map. Check if the name of the Ribeirão matches that of the locality.

Source: IBGE, Diretoria de Geociências, Coordenação de Cartografia.

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If the subject is **Brazil**,
ask the **IBGE**.

Manual for the Collection of Geographical Names

Geographical names are proper nouns, formed by a word or a combination of words or expressions, used to refer to a place, a feature, or specific areas. They nominally identify the features that make up the territory, and their analysis can reveal information that allows not only understanding the patterns of occupation of a particular place, involving the peoples who inhabited it and the languages spoken then, for example, but also identifying the characteristics of its economic production and even the type of vegetation that once existed, among other peculiarities.

To fully harness the potential inherent in geographical names, however, it is necessary to minimize errors in identifying features and retrieving the information contained in them. This requires the standardization of these names, both in terms of the positional accuracy of the features in the territory and in their spelling, following common principles and recommendations that allow for consistent interpretation and use of the mapped items.

With the release of this Manual, the IBGE presents a methodology for collecting geographical names that takes into account the concepts related to this subject and the specificities required for their standardization, from the perspective of institutional cartographic practices. It should be noted, however, that the proposed guidelines can be applied to any type of project, across various organizations and fields of knowledge, and do not depend on digital resources. The goal of this publication is to establish a minimum set of procedures that enable efficient data collection, making it accessible for other mapping entities in the country, as well as academic institutions and other groups interested in toponymy.

This publication, also available on the IBGE's online portal, covers the fundamental concepts related to the collection of geographical names and describes the three phases that characterize it: office preparation, fieldwork, and office consolidation of field information. Samples of documents from collections carried out by the IBGE field teams illustrate the volume, facilitating the understanding of the guidelines and providing a clearer visualization of the expected results.

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