

Package ‘giscoR’

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Type Package

Title Download Map Data from GISCO API - Eurostat

Version 0.5.1

Description Tools to download data from the GISCO (Geographic Information System of the Commission) Eurostat database <<https://ec.europa.eu/eurostat/web/gisco>>. Global and European map data available. This package is in no way officially related to or endorsed by Eurostat.

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URL <https://ropengov.github.io/giscoR/>,
<https://github.com/rOpenGov/giscoR>

BugReports <https://github.com/rOpenGov/giscoR/issues>

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Description

Access the **GISCO Address API**, that allows to carry out both geocoding and reverse geocoding using a pan-european address database.

Each endpoint available is implemented through a specific function, see **Details**.

The API supports fuzzy searching (also referred to as approximate string matching) for all parameters of each endpoint.

Usage

```
gisco_addressapi_search(  
  country = NULL,  
  province = NULL,  
  city = NULL,  
  road = NULL,  
  housenumber = NULL,  
  postcode = NULL,  
  verbose = FALSE  
)
```

```
gisco_addressapi_reverse(x, y, country = NULL, verbose = FALSE)
```

```
gisco_addressapi_bbox(  
  country = NULL,  
  province = NULL,  
  city = NULL,  
  road = NULL,  
  postcode = NULL,  
  verbose = FALSE  
)
```

```
gisco_addressapi_countries(verbose = FALSE)
```

```
gisco_addressapi_provinces(country = NULL, city = NULL, verbose = FALSE)
```

```
gisco_addressapi_cities(country = NULL, province = NULL, verbose = FALSE)
```

```
gisco_addressapi_roads(  
  country = NULL,  
  province = NULL,  
  city = NULL,  
  verbose = FALSE  
)
```

```
gisco_addressapi_housenumbers(  
  country = NULL,  
  province = NULL,  
  city = NULL,  
  road = NULL,
```

```

    postcode = NULL,
    verbose = FALSE
)

gisco_addressapi_postcodes(
  country = NULL,
  province = NULL,
  city = NULL,
  verbose = FALSE
)

gisco_addressapi_copyright(verbose = FALSE)

```

Arguments

| | |
|------------|--|
| country | Country code (country = "LU"). |
| province | A province within a country. For a list of provinces within a certain country use the provinces endpoint (gisco_addressapi_provinces(country = "LU")). |
| city | A city within a province. For a list of cities within a certain province use the cities endpoint (gisco_addressapi_cities(province = "capellen")). |
| road | A road within a city. |
| houenumber | The house number or house name within a road or street. |
| postcode | Can be used in combination with the previous parameters. |
| verbose | Logical, displays information. Useful for debugging, default is FALSE. |
| x, y | x and y coordinates (as longitude and latitude) to be converted into a human-readable address. |

Details

Brief description of the API endpoints (source [GISCO Address API \> Endpoints:](#)

| Endpoint | Description |
|--------------|---|
| /countries | Returns all country codes that are compatible with the address API. Check the coverage map for available countries. |
| /provinces | Returns all provinces within the specified country. Can also be used to get the province of a specified city. |
| /cities | Returns all cities within a specified province or country. |
| /roads | Returns all roads or streets within a specified city. |
| /houenumbers | Returns all house numbers or names within the specified road. It is possible that in certain countries an address has multiple house numbers. |
| /postcodes | Returns all postcodes within the specified address component (Country or Province or City). |
| /search | The search endpoint allows structured queries to the address database. Please note that various combinations of parameters are possible. |
| /reverse | The API's reverse theme allows you to specify x and y coordinates in order to retrieve a structured address. |
| /bbox | Returns a WKT bounding box for an address component depending on the parameters specified. |
| /copyright | Returns the copyright text for each available country in the Address API. |

The resulting object may present the following variables:

| Property name | Description |
|---------------|---|
| LD | Refers to "Locator Designator" and represents the house number part of the address |
| TF | Refers to "Thoroughfare" and represents the street or road part of the address |
| L0 | Refers to Level 0 of the API administrative levels. Values are country codes consisting of 2 characters. |
| L1 | Refers to Level 1 of the API administrative levels. Values are province names. Please note that "province" is a |
| L2 | Refers to Level 2 of the API administrative levels. Values are town or city names. Please note that "city" is a |
| PC | Postal Code |
| N0 | Refers to "NUTS 0" |
| N1 | Refers to "NUTS 1" |
| N2 | Refers to "NUTS 2" |
| N3 | Refers to "NUTS 3" |
| X and Y | Refers to the x and y coordinates of the address point |
| OL | Refers to the address' Open Location Code |

Value

A data.frame object in most cases, except `gisco_addressapi_search()`, `gisco_addressapi_reverse()` and `gisco_addressapi_bbox()`, that return a `sf` object.

See Also

See the docs: <https://gisco-services.ec.europa.eu/addressapi/docs/screen/home>.

Examples

```
# Cities in a region

gisco_addressapi_cities(country = "PT", province = "LISBOA")

# Geocode and reverse geocode with sf objects
# Structured search
struct <- gisco_addressapi_search(
  country = "ES", city = "BARCELONA",
  road = "GRACIA"
)

struct

# Reverse geocoding
reverse <- gisco_addressapi_reverse(x = struct$X[1], y = struct$Y[1])

reverse
```

gisco_attributions *Attribution when publishing GISCO data*

Description

Get the legal text to be used along with the data downloaded with this package.

Usage

```
gisco_attributions(lang = "en", copyright = FALSE)
```

Arguments

| | |
|-----------|--|
| lang | Language (two-letter ISO code). See https://en.wikipedia.org/wiki/List_of_ISO_639-1_codes and Details . |
| copyright | Boolean TRUE/FALSE. Whether to display the copyright notice or not on the console. |

Details

Current languages supported are:

- "en": English.
- "da": Danish.
- "de": German.
- "es": Spanish.
- "fi": Finish.
- "fr": French.
- "no": Norwegian.
- "sv": Swedish.

Please consider **contributing** if you spot any mistake or want to add a new language.

Value

A string with the attribution to be used.

Note

COPYRIGHT NOTICE

When data downloaded from GISCO is used in any printed or electronic publication, in addition to any other provisions applicable to the whole Eurostat website, data source will have to be acknowledged in the legend of the map and in the introductory page of the publication with the following copyright notice:

- EN: (C) EuroGeographics for the administrative boundaries.

- FR: (C) EuroGeographics pour les limites administratives.
- DE: (C) EuroGeographics bezüglich der Verwaltungsgrenzen.

For publications in languages other than English, French or German, the translation of the copyright notice in the language of the publication shall be used.

If you intend to use the data commercially, please contact EuroGeographics for information regarding their licence agreements.

See Also

Other helper: [gisco_check_access\(\)](#)

Examples

```
gisco_attributions()

gisco_attributions(lang = "es", copyright = TRUE)

gisco_attributions(lang = "XXX")
```

`gisco_bulk_download` *Bulk download from GISCO API*

Description

Downloads zipped data from GISCO and extract them on the `cache_dir` folder.

Usage

```
gisco_bulk_download(
  id_giscoR = c("countries", "coastallines", "communes", "lau", "nuts", "urban_audit"),
  year = "2016",
  cache_dir = NULL,
  update_cache = FALSE,
  verbose = FALSE,
  resolution = "10",
  ext = c("geojson", "shp", "svg", "json", "gdb"),
  recursive = TRUE
)
```

Arguments

`id_giscoR` Type of dataset to be downloaded. Values supported are:

- "coastallines".
- "communes".
- "countries".
- "lau".

| | |
|--------------|---|
| | <ul style="list-style-type: none"> • "nuts". • "urban_audit". |
| year | Release year of the file. See Details . |
| cache_dir | A path to a cache directory. See About caching . |
| update_cache | A logical whether to update cache. Default is FALSE. When set to TRUE it would force a fresh download of the source .geojson file. |
| verbose | Logical, displays information. Useful for debugging, default is FALSE. |
| resolution | Resolution of the geospatial data. One of <ul style="list-style-type: none"> • "60": 1:60million • "20": 1:20million • "10": 1:10million • "03": 1:3million • "01": 1:1million |
| ext | Extension of the file(s) to be downloaded. Formats available are "geojson", "shp", "svg", "json", "gdb". See Details . |
| recursive | Tries to unzip recursively the zip files (if any) included in the initial bulk download (case of ext = "shp"). |

Details

See the years available in the corresponding functions:

- [gisco_get_coastallines\(\)](#).
- [gisco_get_communes\(\)](#).
- [gisco_get_countries\(\)](#).
- [gisco_get_lau\(\)](#).
- [gisco_get_nuts\(\)](#).
- [gisco_get_urban_audit\(\)](#).

The usual extension used across **giscoR** is "geojson", however other formats are already available on GISCO.

Value

Silent function.

About caching

You can set your cache_dir with [gisco_set_cache_dir\(\)](#).

Sometimes cached files may be corrupt. On that case, try re-downloading the data setting update_cache = TRUE.

If you experience any problem on download, try to download the corresponding .geojson file by any other method and save it on your cache_dir. Use the option verbose = TRUE for debugging the API query.

For a complete list of files available check [gisco_db](#).

Source

<https://gisco-services.ec.europa.eu/distribution/v2/>

See Also

Other political: [gisco_get_coastallines\(\)](#), [gisco_get_countries\(\)](#), [gisco_get_lau\(\)](#), [gisco_get_nuts\(\)](#), [gisco_get_postalcodes\(\)](#), [gisco_get_units\(\)](#), [gisco_get_urban_audit\(\)](#)

Examples

```
## Not run:  
  
# Countries 2016 - It would take some time  
gisco_bulk_download(id_giscoR = "countries", resolution = "60")  
  
## End(Not run)
```

gisco_check_access *Check access to GISCO API*

Description

Check if **R** has access to resources at <https://gisco-services.ec.europa.eu/distribution/v2/>.

Usage

```
gisco_check_access()
```

Value

a logical.

See Also

Other helper: [gisco_attributions\(\)](#)

Examples

```
gisco_check_access()
```

| | |
|-------------------|---|
| gisco_clear_cache | <i>Clear your R cache dir</i> |
|-------------------|---|

Description

Use this function with caution. This function would clear your cached data and configuration, specifically:

- Deletes the **giscoR** config directory (`rappdirs::user_config_dir("giscoR", "R")`).
- Deletes the `cache_dir` directory.
- Deletes the values on stored on `Sys.getenv("GISCO_CACHE_DIR")` and `options(gisco_cache_dir)`.

Usage

```
gisco_clear_cache(config = FALSE, cached_data = TRUE, verbose = FALSE)
```

Arguments

| | |
|--------------------------|---|
| <code>config</code> | if TRUE, will delete the configuration folder of giscoR . |
| <code>cached_data</code> | If this is set to TRUE, it will delete your <code>cache_dir</code> and all its content. |
| <code>verbose</code> | Logical, displays information. Useful for debugging, default is FALSE. |

Details

This is an overkill function that is intended to reset your status as if you would never have installed and/or used **giscoR**.

Value

Invisible. This function is called for its side effects.

See Also

`rappdirs::user_config_dir()`

Other cache utilities: `gisco_set_cache_dir()`

Examples

```
# Don't run this! It would modify your current state
## Not run:
gisco_clear_cache(verbose = TRUE)

Sys.getenv("GISCO_CACHE_DIR")

# Set new cache on a temp dir
newcache <- file.path(tempdir(), "giscoR", "pkgdown")
```

```
newcache  
gisco_set_cache_dir(newcache)  
Sys.getenv("GISCO_CACHE_DIR")  
## End(Not run)
```

gisco_coastallines *World coastal lines POLYGON object*

Description

A [sf](#) object as provided by GISCO (2016 version).

Format

A POLYGON [sf](#) object (resolution: 1:20million, EPSG:4326) with 3 variables:

COAS_ID Coast ID.

FID FID.

geometry geometry field.

Source

[COAS_RG_20M_2016_4326](#).geojson file.

See Also

[gisco_get_coastallines\(\)](#)

Other dataset: [gisco_countries](#), [gisco_countrycode](#), [gisco_db](#), [gisco_nuts](#)

Examples

```
data("gisco_coastallines")  
head(gisco_coastallines)
```

| | |
|-----------------|--|
| gisco_countries | <i>World countries</i> POLYGON sf object |
|-----------------|--|

Description

A [sf](#) object including all countries as provided by GISCO (2016 version).

Format

A MULTIPOLYGON data frame (resolution: 1:20million, EPSG:4326) object with 257 rows and 7 variables:

id row ID.

CNTR_NAME Official country name on local language.

ISO3_CODE ISO 3166-1 alpha-3 code of each country, as provided by GISCO.

CNTR_ID Country ID.

NAME_ENGL Country name in English.

FID FID.

geometry geometry field.

Source

[CNTR_RG_20M_2016_4326.geojson](#) file.

See Also

[gisco_get_countries\(\)](#)

Other dataset: [gisco_coastallines](#), [gisco_countrycode](#), [gisco_db](#), [gisco_nuts](#)

Examples

```
data("gisco_countries")
head(gisco_countries)
```

gisco_countrycode *Data frame with different country code schemes and world regions*

Description

A data frame containing conversions between different country code schemes (Eurostat/ISO2 and 3) as well as geographic regions as provided by the World Bank and the UN (M49). This data set is extracted from **countrycode** package.

Format

A data frame object with 249 rows and 13 variables:

ISO3_CODE Eurostat code of each country.

CNTR_CODE ISO 3166-1 alpha-2 code of each country.

iso2c ISO 3166-1 alpha-3 code of each country.

iso.name.en ISO English short name.

cldr.short.en English short name as provided by the Unicode Common Locale Data Repository.

continent As provided by the World Bank.

un.region.code Numeric region code UN (M49).

un.region.name Region name UN (M49).

un.regionintermediate.code Numeric intermediate Region.

un.regionintermediate.name Intermediate Region name UN (M49).

un.regionsub.code Numeric sub-region code UN (M49).

un.regionsub.name Sub-Region name UN (M49).

eu Logical indicating if the country belongs to the European Union.

Source

[countrycode::codelist v1.2.0](#).

See Also

[gisco_get_countries\(\)](#) and [countrycode::codelist](#), included in **countrycode**.

See also the [Unicode Common Locale Data Repository](#).

Other dataset: [gisco_coastallines](#), [gisco_countries](#), [gisco_db](#), [gisco_nuts](#)

Examples

```
data("gisco_countrycode")
dplyr::glimpse(gisco_countrycode)
```

`gisco_get_airports` *Get location of airports and ports from GISCO API*

Description

Loads a `sf` object from GISCO API or your local library.

Usage

```
gisco_get_airports(
  year = "2013",
  country = NULL,
  cache_dir = NULL,
  update_cache = FALSE,
  verbose = FALSE
)

gisco_get_ports(
  year = "2013",
  country = NULL,
  cache_dir = NULL,
  update_cache = FALSE,
  verbose = FALSE
)
```

Arguments

| | |
|---------------------------|---|
| <code>year</code> | Year of reference. Only year available right now is "2013". |
| <code>country</code> | Optional. A character vector of country codes. It could be either a vector of country names, a vector of ISO3 country codes or a vector of Eurostat country codes. Mixed types (as <code>c("Italy", "ES", "FRA")</code>) would not work. See also countrycode::countrycode() . |
| <code>cache_dir</code> | A path to a cache directory. See About caching . |
| <code>update_cache</code> | A logical whether to update cache. Default is FALSE. When set to TRUE it would force a fresh download of the source <code>.geojson</code> file. |
| <code>verbose</code> | Logical, displays information. Useful for debugging, default is FALSE. |

Details

`gisco_get_airports()` refer to Europe. All shapefiles provided in [EPSG:4326](#).

`gisco_get_ports()` adds a new field `CNTR_ISO2` to the original data identifying the country of the port. Worldwide information available. The port codes are aligned with [UN/LOCODE](#) standard.

Value

A POINT object on EPSG:4326.

About caching

You can set your `cache_dir` with `gisco_set_cache_dir()`.

Sometimes cached files may be corrupt. On that case, try re-downloading the data setting `update_cache = TRUE`.

If you experience any problem on download, try to download the corresponding `.geojson` file by any other method and save it on your `cache_dir`. Use the option `verbose = TRUE` for debugging the API query.

For a complete list of files available check `gisco_db`.

Source

<https://ec.europa.eu/eurostat/web/gisco/geodata/transport-networks>

See Also

Other infrastructure: `gisco_get_education()`, `gisco_get_healthcare()`

Examples

```
library(sf)

greece <- gisco_get_countries(country = "EL", resolution = 3)
airp_gc <- gisco_get_airports(country = "EL")

library(ggplot2)

if (inherits(airp_gc, "sf")) {
  ggplot(greece) +
    geom_sf(fill = "grey80") +
    geom_sf(data = airp_gc, color = "blue") +
    labs(
      title = "Airports on Greece",
      shape = NULL,
      color = NULL,
      caption = gisco_attributions()
    )
}
#####
#           Plot ports           #
#####

ports <- gisco_get_ports()
coast <- giscoR::gisco_coastallines

# To Robinson projection :)

library(sf)
coast <- st_transform(coast, "ESRI:54030")
ports <- st_transform(ports, st_crs(coast))
```

```

if (inherits(ports, "sf")) {
  ggplot(coast) +
    geom_sf(fill = "#F6E1B9", color = "#0978AB") +
    geom_sf(data = ports, fill = "red", shape = 21) +
    theme_void() +
    theme(
      panel.background = element_rect(fill = "#C6ECFF"),
      panel.grid = element_blank(),
      plot.title = element_text(face = "bold", hjust = 0.5),
      plot.subtitle = element_text(face = "italic", hjust = 0.5)
    ) +
    labs(
      title = "Ports Worldwide", subtitle = "Year 2013",
      caption = "(c) European Union, 1995 - today"
    )
}

```

gisco_get_coastallines

Get GISCO coastlines [sf](#) polygons

Description

Downloads worldwide coastlines

Usage

```

gisco_get_coastallines(
  year = "2016",
  epsg = "4326",
  cache = TRUE,
  update_cache = FALSE,
  cache_dir = NULL,
  verbose = FALSE,
  resolution = "20"
)

```

Arguments

| | |
|------|--|
| year | Release year. One of "2006", "2010", "2013" or "2016". |
| epsg | projection of the map: 4-digit EPSG code . One of: <ul style="list-style-type: none"> • "4258": ETRS89 • "4326": WGS84 • "3035": ETRS89 / ETRS-LAEA • "3857": Pseudo-Mercator |

| | |
|--------------|---|
| cache | A logical whether to do caching. Default is TRUE. See About caching . |
| update_cache | A logical whether to update cache. Default is FALSE. When set to TRUE it would force a fresh download of the source .geojson file. |
| cache_dir | A path to a cache directory. See About caching . |
| verbose | Logical, displays information. Useful for debugging, default is FALSE. |
| resolution | Resolution of the geospatial data. One of <ul style="list-style-type: none">• "60": 1:60million• "20": 1:20million• "10": 1:10million• "03": 1:3million• "01": 1:1million |

Value

A `sf` POLYGON object.

About caching

You can set your `cache_dir` with `gisco_set_cache_dir()`.

Sometimes cached files may be corrupt. On that case, try re-downloading the data setting `update_cache = TRUE`.

If you experience any problem on download, try to download the corresponding .geojson file by any other method and save it on your `cache_dir`. Use the option `verbose = TRUE` for debugging the API query.

For a complete list of files available check `gisco_db`.

Note

Please check the download and usage provisions on `gisco_attributions()`.

Source

<https://gisco-services.ec.europa.eu/distribution/v2/>

See Also

`gisco_coastlines`

Other political: `gisco_bulk_download()`, `gisco_get_countries()`, `gisco_get_lau()`, `gisco_get_nuts()`, `gisco_get_postalcodes()`, `gisco_get_units()`, `gisco_get_urban_audit()`

Examples

```
coast <- gisco_get_coastlines()

library(ggplot2)

ggplot(coast) +
```

```

geom_sf(color = "#1278AB", fill = "#FDFBEA") +
# Zoom on Caribe
coord_sf(
  xlim = c(-99, -49),
  ylim = c(4, 30)
) +
theme_minimal() +
theme(
  panel.background = element_rect(fill = "#C7E7FB", color = NA),
  panel.border = element_rect(colour = "black", fill = NA)
)

```

`gisco_get_countries` *Get GISCO world country sf polygons, points and lines*

Description

Returns world country polygons, lines and points at a specified scale, as provided by GISCO. Also, specific areas as Gibraltar or Antarctica are presented separately. The definition of country used on GISCO correspond roughly with territories with an official [ISO-3166](#) code.

Usage

```

gisco_get_countries(
  year = "2016",
  epsg = "4326",
  cache = TRUE,
  update_cache = FALSE,
  cache_dir = NULL,
  verbose = FALSE,
  resolution = "20",
  spatialtype = "RG",
  country = NULL,
  region = NULL
)

```

Arguments

| | |
|--------------------|---|
| <code>year</code> | Release year of the file. One of "2001", "2006", "2010", "2013", "2016" or "2020". |
| <code>epsg</code> | projection of the map: 4-digit EPSG code . One of: <ul style="list-style-type: none"> • "4258": ETRS89 • "4326": WGS84 • "3035": ETRS89 / ETRS-LAEA • "3857": Pseudo-Mercator |
| <code>cache</code> | A logical whether to do caching. Default is TRUE. See About caching . |

| | |
|--------------|---|
| update_cache | A logical whether to update cache. Default is FALSE. When set to TRUE it would force a fresh download of the source .geojson file. |
| cache_dir | A path to a cache directory. See About caching . |
| verbose | Logical, displays information. Useful for debugging, default is FALSE. |
| resolution | Resolution of the geospatial data. One of <ul style="list-style-type: none"> • "60": 1:60million • "20": 1:20million • "10": 1:10million • "03": 1:3million • "01": 1:1million |
| spatialtype | Type of geometry to be returned: <ul style="list-style-type: none"> • "BN": Boundaries - LINESTRING object. • "COASTL": coastlines - LINESTRING object. • "INLAND": inland boundaries - LINESTRING object. • "LB": Labels - POINT object. • "RG": Regions - MULTIPOLYGON/POLYGON object. <p>Note that parameters country and region would be only applied when spatialtype is "BN" or "RG".</p> |
| country | Optional. A character vector of country codes. It could be either a vector of country names, a vector of ISO3 country codes or a vector of Eurostat country codes. Mixed types (as c("Italy", "ES", "FRA")) would not work. See also countrycode::countrycode() . |
| region | Optional. A character vector of UN M49 region codes or European Union membership. Possible values are "Africa", "Americas", "Asia", "Europe", "Oceania" or "EU" for countries belonging to the European Union (as per 2021). See About world regions and gisco_countrycode . |

Value

A `sf` object specified by `spatialtype`.

About caching

You can set your `cache_dir` with [gisco_set_cache_dir\(\)](#).

Sometimes cached files may be corrupt. On that case, try re-downloading the data setting `update_cache = TRUE`.

If you experience any problem on download, try to download the corresponding .geojson file by any other method and save it on your `cache_dir`. Use the option `verbose = TRUE` for debugging the API query.

For a complete list of files available check [gisco_db](#).

World Regions

Regions are defined as per the geographic regions defined by the UN (see <https://unstats.un.org/unsd/methodology/m49/>). Under this scheme Cyprus is assigned to Asia. You may use `region = "EU"` to get the EU members (reference date: 2021).

Note

Please check the download and usage provisions on [gisco_attributions\(\)](#).

Source

<https://gisco-services.ec.europa.eu/distribution/v2/>

See Also

[gisco_countrycode\(\)](#), [gisco_countries](#), [countrycode::countrycode\(\)](#)

Other political: [gisco_bulk_download\(\)](#), [gisco_get_coastallines\(\)](#), [gisco_get_lau\(\)](#), [gisco_get_nuts\(\)](#), [gisco_get_postalcodes\(\)](#), [gisco_get_units\(\)](#), [gisco_get_urban_audit\(\)](#)

Examples

```
cntries <- gisco_get_countries()

library(ggplot2)
ggplot(cntries) +
  geom_sf()

# Get a region

africa <- gisco_get_countries(region = "Africa")
ggplot(africa) +
  geom_sf(fill = "#078930", col = "white") +
  theme_minimal()
```

`gisco_get_education` *Get locations of education services in Europe*

Description

The dataset contains information on main education services by Member States.

Usage

```
gisco_get_education(
  cache = TRUE,
  update_cache = FALSE,
  cache_dir = NULL,
  verbose = FALSE,
  country = NULL
)
```

Arguments

| | |
|--------------|--|
| cache | A logical whether to do caching. Default is TRUE. See About caching . |
| update_cache | A logical whether to update cache. Default is FALSE. When set to TRUE it would force a fresh download of the source .geojson file. |
| cache_dir | A path to a cache directory. See About caching . |
| verbose | Logical, displays information. Useful for debugging, default is FALSE. |
| country | Optional. A character vector of country codes. It could be either a vector of country names, a vector of ISO3 country codes or a vector of Eurostat country codes. Mixed types (as <code>c("Italy", "ES", "FRA")</code>) would not work. See also <code>countrycode::countrycode()</code> . |

Details

Files are distributed on EPSG:4326. Metadata available on <https://gisco-services.ec.europa.eu/pub/education/metadata.pdf>.

Value

A POINT `sf` object.

About caching

You can set your `cache_dir` with `gisco_set_cache_dir()`.

Sometimes cached files may be corrupt. On that case, try re-downloading the data setting `update_cache = TRUE`.

If you experience any problem on download, try to download the corresponding .geojson file by any other method and save it on your `cache_dir`. Use the option `verbose = TRUE` for debugging the API query.

For a complete list of files available check `gisco_db`.

Author(s)

dieghernan, <https://github.com/dieghernan/>

Source

<https://ec.europa.eu/eurostat/web/gisco/geodata/basic-services>

See Also

`gisco_get_countries()`

Other infrastructure: `gisco_get_airports()`, `gisco_get_healthcare()`

Examples

```
edu_BEL <- gisco_get_education(country = "Belgium")

# Plot if downloaded
if (nrow(edu_BEL) > 3) {
  library(ggplot2)
  ggplot(edu_BEL) +
    geom_sf(shape = 21, size = 0.15)
}
```

| | |
|----------------|--|
| gisco_get_grid | <i>Get grid cells covering covering Europe for various resolutions</i> |
|----------------|--|

Description

These datasets contain grid cells covering the European land territory, for various resolutions from 1km to 100km. Base statistics such as population figures are provided for these cells.

Usage

```
gisco_get_grid(
  resolution = "20",
  spatialtype = c("REGION", "POINT"),
  cache_dir = NULL,
  update_cache = FALSE,
  verbose = FALSE
)
```

Arguments

| | |
|--------------|--|
| resolution | Resolution of the grid cells on kms. Available values are "1", "2", "5", "10", "20", "50", "100". See Details . |
| spatialtype | Select one of "REGION" or "POINT". |
| cache_dir | A path to a cache directory. See About caching . |
| update_cache | A logical whether to update cache. Default is FALSE. When set to TRUE it would force a fresh download of the source .geojson file. |
| verbose | Logical, displays information. Useful for debugging, default is FALSE. |

Details

Files are distributed on EPSG:3035.

The file sizes range is from 428Kb (resolution = "100") to 1.7Gb resolution = "1". For resolutions 1km and 2km you would need to confirm the download.

Value

A POLYGON/POINT `sf` object.

About caching

You can set your `cache_dir` with `gisco_set_cache_dir()`.

Sometimes cached files may be corrupt. On that case, try re-downloading the data setting `update_cache = TRUE`.

If you experience any problem on download, try to download the corresponding `.geojson` file by any other method and save it on your `cache_dir`. Use the option `verbose = TRUE` for debugging the API query.

For a complete list of files available check `gisco_db`.

Note

There are specific downloading provisions, please see <https://ec.europa.eu/eurostat/web/gisco/geodata/grids>

Author(s)

dieghernan, <https://github.com/dieghernan/>

Source

<https://ec.europa.eu/eurostat/web/gisco/geodata/grids>

Examples

```
grid <- gisco_get_grid(resolution = 20)

# If downloaded correctly proceed

if (!is.null(grid)) {
  library(dplyr)

  grid <- grid %>%
    mutate(popdens = TOT_P_2021 / 20)

  breaks <- c(0, 0.1, 100, 500, 1000, 5000, 10000, Inf)

  # Cut groups
  grid <- grid %>%
    mutate(popdens_cut = cut(popdens,
      breaks = breaks,
      include.lowest = TRUE
    ))

  cut_labs <- prettyNum(breaks, big.mark = " ")[-1]
  cut_labs[1] <- "0"
```

```

cut_labs[7] <- "> 10 000"

pal <- c("black", hcl.colors(length(breaks) - 2,
  palette = "Spectral",
  alpha = 0.9
))

library(ggplot2)

ggplot(grid) +
  geom_sf(aes(fill = popdens_cut), color = NA, linewidth = 0) +
  coord_sf(
    xlim = c(2500000, 7000000),
    ylim = c(1500000, 5200000)
  ) +
  scale_fill_manual(
    values = pal, na.value = "black",
    name = "people per sq. kilometer",
    labels = cut_labs,
    guide = guide_legend(
      direction = "horizontal",
      nrow = 1
    )
  ) +
  theme_void() +
  labs(
    title = "Population density in Europe (2021)",
    subtitle = "Grid: 20 km.",
    caption = gisco_attributions()
  ) +
  theme(
    text = element_text(colour = "white"),
    plot.background = element_rect(fill = "grey2"),
    plot.title = element_text(hjust = 0.5),
    plot.subtitle = element_text(hjust = 0.5, face = "bold"),
    plot.caption = element_text(
      color = "grey60", hjust = 0.5, vjust = 0,
      margin = margin(t = 5, b = 10)
    ),
    legend.position = "bottom",
    legend.title.position = "top",
    legend.text.position = "bottom",
    legend.key.height = unit(0.5, "lines"),
    legend.key.width = unit(1, "lines")
  )
}

```


Description

The dataset contains information on main healthcare services considered to be 'hospitals' by Member States.

Usage

```
gisco_get_healthcare(  
  cache = TRUE,  
  update_cache = FALSE,  
  cache_dir = NULL,  
  verbose = FALSE,  
  country = NULL  
)
```

Arguments

| | |
|--------------|---|
| cache | A logical whether to do caching. Default is TRUE. See About caching . |
| update_cache | A logical whether to update cache. Default is FALSE. When set to TRUE it would force a fresh download of the source .geojson file. |
| cache_dir | A path to a cache directory. See About caching . |
| verbose | Logical, displays information. Useful for debugging, default is FALSE. |
| country | Optional. A character vector of country codes. It could be either a vector of country names, a vector of ISO3 country codes or a vector of Eurostat country codes. Mixed types (as c("Italy", "ES", "FRA")) would not work. See also countrycode::countrycode() . |

Details

Files are distributed on EPSG:4326. Metadata available on <https://gisco-services.ec.europa.eu/pub/healthcare/metadata.pdf>.

Value

A POINT [sf](#) object.

About caching

You can set your cache_dir with [gisco_set_cache_dir\(\)](#).

Sometimes cached files may be corrupt. On that case, try re-downloading the data setting update_cache = TRUE.

If you experience any problem on download, try to download the corresponding .geojson file by any other method and save it on your cache_dir. Use the option verbose = TRUE for debugging the API query.

For a complete list of files available check [gisco_db](#).

Author(s)

dieghernan, <https://github.com/dieghernan/>

Source

<https://ec.europa.eu/eurostat/web/gisco/geodata/basic-services>

See Also

[gisco_get_countries\(\)](#)

Other infrastructure: [gisco_get_airports\(\)](#), [gisco_get_education\(\)](#)

Examples

```
health_be <- gisco_get_healthcare(country = "Belgium")

# Plot if downloaded
if (inherits(health_be, "sf")) {
  library(ggplot2)
  ggplot(health_be) +
    geom_sf()
}
```

gisco_get_lau

Get GISCO urban areas sf polygons, points and lines

Description

[gisco_get_communes\(\)](#) and [gisco_get_lau\(\)](#) download shapes of Local Urban Areas, that correspond roughly with towns and cities.

Usage

```
gisco_get_communes(
  year = "2016",
  epsg = "4326",
  cache = TRUE,
  update_cache = FALSE,
  cache_dir = NULL,
  verbose = FALSE,
  spatialtype = "RG",
  country = NULL
)

gisco_get_lau(
  year = "2021",
  epsg = "4326",
```

```

cache = TRUE,
update_cache = FALSE,
cache_dir = NULL,
verbose = FALSE,
country = NULL,
gisco_id = NULL
)

```

Arguments

| | |
|--------------|---|
| year | <p>Release year of the file:</p> <ul style="list-style-type: none"> • For <code>gisco_get_communes()</code> one of "2001", "2004", "2006", "2008", "2010", "2013" or "2016". • For <code>gisco_get_lau()</code> one of "2011", "2012", "2013", "2014", "2015", "2016", "2017", "2018", "2019", "2020" or "2021". |
| epsg | <p>projection of the map: 4-digit EPSG code. One of:</p> <ul style="list-style-type: none"> • "4258": ETRS89 • "4326": WGS84 • "3035": ETRS89 / ETRS-LAEA • "3857": Pseudo-Mercator |
| cache | A logical whether to do caching. Default is TRUE. See About caching . |
| update_cache | A logical whether to update cache. Default is FALSE. When set to TRUE it would force a fresh download of the source <code>.geojson</code> file. |
| cache_dir | A path to a cache directory. See About caching . |
| verbose | Logical, displays information. Useful for debugging, default is FALSE. |
| spatialtype | <p>Type of geometry to be returned:</p> <ul style="list-style-type: none"> • "BN": Boundaries - LINESTRING object. • "COASTL": coastlines - LINESTRING object. • "INLAND": inland boundaries - LINESTRING object. • "LB": Labels - POINT object. • "RG": Regions - MULTIPOLYGON/POLYGON object. <p>Note that parameters <code>country</code> and <code>region</code> would be only applied when <code>spatialtype</code> is "BN" or "RG".</p> |
| country | Optional. A character vector of country codes. It could be either a vector of country names, a vector of ISO3 country codes or a vector of Eurostat country codes. Mixed types (as <code>c("Italy", "ES", "FRA")</code>) would not work. See also countrycode::countrycode() . |
| gisco_id | Optional. A character vector of GISCO_ID LAU values. |

Value

A `sf` object specified by `spatialtype`. In the case of `gisco_get_lau()`, a POLYGON object.

About caching

You can set your `cache_dir` with `gisco_set_cache_dir()`.

Sometimes cached files may be corrupt. On that case, try re-downloading the data setting `update_cache = TRUE`.

If you experience any problem on download, try to download the corresponding `.geojson` file by any other method and save it on your `cache_dir`. Use the option `verbose = TRUE` for debugging the API query.

For a complete list of files available check [gisco_db](#).

Note

Please check the download and usage provisions on [gisco_attributions\(\)](#).

See Also

Other political: [gisco_bulk_download\(\)](#), [gisco_get_coastallines\(\)](#), [gisco_get_countries\(\)](#), [gisco_get_nuts\(\)](#), [gisco_get_postalcodes\(\)](#), [gisco_get_units\(\)](#), [gisco_get_urban_audit\(\)](#)

Examples

```
ire_lau <- gisco_get_communes(spatialtype = "LB", country = "Ireland")

if (!is.null(ire_lau)) {
  library(ggplot2)

  ggplot(ire_lau) +
    geom_sf(shape = 21, col = "#009A44", size = 0.5) +
    labs(
      title = "Communes in Ireland",
      subtitle = "Year 2016",
      caption = gisco_attributions()
    ) +
    theme_void() +
    theme(text = element_text(
      colour = "#009A44",
      family = "serif", face = "bold"
    ))
}
```

`gisco_get_nuts`*Get GISCO NUTS sf polygons, points and lines*

Description

Returns **NUTS regions** polygons, lines and points at a specified scale, as provided by GISCO.

NUTS are provided at three different levels:

- "0": Country level
- "1": Groups of states/regions
- "2": States/regions
- "3": Counties/provinces/districts

Note that NUTS-level definition may vary across countries. See also <https://ec.europa.eu/eurostat/web/gisco/geodata//statistical-units/territorial-units-statistics>.

Usage

```
gisco_get_nuts(  
  year = "2016",  
  epsg = "4326",  
  cache = TRUE,  
  update_cache = FALSE,  
  cache_dir = NULL,  
  verbose = FALSE,  
  resolution = "20",  
  spatialtype = "RG",  
  country = NULL,  
  nuts_id = NULL,  
  nuts_level = "all"  
)
```

Arguments

| | |
|---------------------------|---|
| <code>year</code> | Release year of the file. One of "2003", "2006", "2010", "2013", "2016" or "2021". |
| <code>epsg</code> | projection of the map: 4-digit EPSG code . One of: <ul style="list-style-type: none">• "4258": ETRS89• "4326": WGS84• "3035": ETRS89 / ETRS-LAEA• "3857": Pseudo-Mercator |
| <code>cache</code> | A logical whether to do caching. Default is TRUE. See About caching . |
| <code>update_cache</code> | A logical whether to update cache. Default is FALSE. When set to TRUE it would force a fresh download of the source .geojson file. |

| | |
|-------------|---|
| cache_dir | A path to a cache directory. See About caching . |
| verbose | Logical, displays information. Useful for debugging, default is FALSE. |
| resolution | Resolution of the geospatial data. One of <ul style="list-style-type: none"> • "60": 1:60million • "20": 1:20million • "10": 1:10million • "03": 1:3million • "01": 1:1million |
| spatialtype | Type of geometry to be returned: <ul style="list-style-type: none"> • "BN": Boundaries - LINESTRING object. • "LB": Labels - POINT object. • "RG": Regions - MULTIPOLYGON/POLYGON object. <p>Note that parameters country, nuts_level and nuts_id would be only applied when spatialtype is "BN" or "RG".</p> |
| country | Optional. A character vector of country codes. It could be either a vector of country names, a vector of ISO3 country codes or a vector of Eurostat country codes. Mixed types (as c("Italy", "ES", "FRA")) would not work. See also countrycode::countrycode() . |
| nuts_id | Optional. A character vector of NUTS IDs. |
| nuts_level | NUTS level. One of "0", "1", "2" or "3". See Description . |

Value

A [sf](#) object specified by spatialtype. The resulting [sf](#) object would present an additional column geo (equal to NUTS_ID) for improving compatibility with [eurostat](#) package. See [eurostat::get_eurostat_geospatial\(\)](#).
See also [gisco_nuts](#) to understand the columns and values provided.

About caching

You can set your cache_dir with [gisco_set_cache_dir\(\)](#).

Sometimes cached files may be corrupt. On that case, try re-downloading the data setting update_cache = TRUE.

If you experience any problem on download, try to download the corresponding .geojson file by any other method and save it on your cache_dir. Use the option verbose = TRUE for debugging the API query.

For a complete list of files available check [gisco_db](#).

Source

<https://gisco-services.ec.europa.eu/distribution/v2/>

See Also

[gisco_nuts](#), [gisco_get_countries\(\)](#), [eurostat::get_eurostat_geospatial\(\)](#)

Other political: [gisco_bulk_download\(\)](#), [gisco_get_coastallines\(\)](#), [gisco_get_countries\(\)](#), [gisco_get_lau\(\)](#), [gisco_get_postalcodes\(\)](#), [gisco_get_units\(\)](#), [gisco_get_urban_audit\(\)](#)

Examples

```
nuts2 <- gisco_get_nuts(nuts_level = 2)

library(ggplot2)

ggplot(nuts2) +
  geom_sf() +
  # ETRS89 / ETRS-LAEA
  coord_sf(
    crs = 3035, xlim = c(2377294, 7453440),
    ylim = c(1313597, 5628510)
  ) +
  labs(title = "NUTS-2 levels")

# NUTS-3 for Germany
germany_nuts3 <- gisco_get_nuts(nuts_level = 3, country = "Germany")

ggplot(germany_nuts3) +
  geom_sf() +
  labs(
    title = "NUTS-3 levels",
    subtitle = "Germany",
    caption = gisco_attributions()
  )

# Select specific regions
select_nuts <- gisco_get_nuts(nuts_id = c("ES2", "FRJ", "FRL", "ITC"))

ggplot(select_nuts) +
  geom_sf(aes(fill = CNTR_CODE)) +
  scale_fill_viridis_d()
```

`gisco_get_postalcodes` *Get postal code points from GISCO*

Description

Get postal codes points of the EU, EFTA and candidate countries.

Usage

```
gisco_get_postalcodes(
  year = "2020",
  country = NULL,
  cache_dir = NULL,
  update_cache = FALSE,
  verbose = FALSE
)
```

Arguments

| | |
|--------------|--|
| year | Year of reference. Currently only "2020" is available. |
| country | Optional. A character vector of country codes. It could be either a vector of country names, a vector of ISO3 country codes or a vector of Eurostat country codes. Mixed types (as <code>c("Italy", "ES", "FRA")</code>) would not work. See also <code>countrycode::countrycode()</code> . |
| cache_dir | A path to a cache directory. See About caching . |
| update_cache | A logical whether to update cache. Default is FALSE. When set to TRUE it would force a fresh download of the source .geojson file. |
| verbose | Logical, displays information. Useful for debugging, default is FALSE. |

Details

The postal code point dataset shows the location of postal codes, NUTS codes and the Degree of Urbanisation classification across the EU, EFTA and candidate countries from a variety of sources. Its primary purpose is to create correspondence tables for the NUTS classification (EC) 1059/2003 as part of the Tercet Regulation (EU) 2017/2391

Value

A POINT `sf` object on EPSG:4326.

Copyright

The dataset is released under the CC-BY-SA-4.0 licence and requires the following attribution whenever used:

(c) European Union - GISCO, 2021, postal code point dataset, Licence CC-BY-SA 4.0 available at <https://ec.europa.eu/eurostat/web/gisco/geodata//administrative-units/postal-codes>.

Shapefiles provided in ETRS89 (EPSG:4258).

About caching

You can set your `cache_dir` with `gisco_set_cache_dir()`.

Sometimes cached files may be corrupt. On that case, try re-downloading the data setting `update_cache = TRUE`.

If you experience any problem on download, try to download the corresponding .geojson file by any other method and save it on your `cache_dir`. Use the option `verbose = TRUE` for debugging the API query.

For a complete list of files available check `gisco_db`.

Source

<https://ec.europa.eu/eurostat/web/gisco/geodata//administrative-units/postal-codes>.

See Also

Other political: [gisco_bulk_download\(\)](#), [gisco_get_coastlines\(\)](#), [gisco_get_countries\(\)](#), [gisco_get_lau\(\)](#), [gisco_get_nuts\(\)](#), [gisco_get_units\(\)](#), [gisco_get_urban_audit\(\)](#)

Examples

```
# Heavy-weight download!
## Not run:

pc_bel <- gisco_get_postalcodes(country = "BE")

if (!is.null(pc_bel)) {
  library(ggplot2)

  ggplot(pc_bel) +
    geom_sf(color = "gold") +
    theme_bw() +
    labs(
      title = "Postcodes of Belgium",
      subtitle = "2020",
      caption = paste("(c) European Union - GISCO, 2021,",
        "postal code point dataset",
        "Licence CC-BY-SA 4.0",
        sep = "\n"
      )
    )
}

## End(Not run)
```

gisco_get_units

Get geospatial units data from GISCO API

Description

Download individual shapefiles of units. Unlike [gisco_get_countries\(\)](#), [gisco_get_nuts\(\)](#) or [gisco_get_urban_audit\(\)](#), that downloads a full dataset and applies filters, [gisco_get_units\(\)](#) downloads a single shapefile for each unit.

Usage

```
gisco_get_units(
  id_giscoR = c("nuts", "countries", "urban_audit"),
  unit = "ES4",
  mode = c("sf", "df"),
  year = "2016",
  epsg = "4326",
```

```

cache = TRUE,
update_cache = FALSE,
cache_dir = NULL,
verbose = FALSE,
resolution = "20",
spatialtype = "RG"
)

```

Arguments

| | |
|--------------|---|
| id_giscoR | Select the unit type to be downloaded. Accepted values are "nuts", "countries" or "urban_audit". |
| unit | Unit ID to be downloaded. See Details . |
| mode | Controls the output of the function. Possible values are "sf" or "df". See Value and Details . |
| year | Release year of the file. One of "2001", "2006", "2010", "2013", "2016" or "2020". |
| epsg | projection of the map: 4-digit EPSG code . One of: <ul style="list-style-type: none"> • "4258": ETRS89 • "4326": WGS84 • "3035": ETRS89 / ETRS-LAEA • "3857": Pseudo-Mercator |
| cache | A logical whether to do caching. Default is TRUE. See About caching . |
| update_cache | A logical whether to update cache. Default is FALSE. When set to TRUE it would force a fresh download of the source .geojson file. |
| cache_dir | A path to a cache directory. See About caching . |
| verbose | Logical, displays information. Useful for debugging, default is FALSE. |
| resolution | Resolution of the geospatial data. One of <ul style="list-style-type: none"> • "60": 1:60million • "20": 1:20million • "10": 1:10million • "03": 1:3million • "01": 1:1million |
| spatialtype | Type of geometry to be returned: "RG", for POLYGON and "LB" for POINT. |

Details

The function can return a data frame on mode = "df" or a `sf` object on mode = "sf".

In order to see the available unit ids with the required combination of `spatialtype`, `year`, first run the function on "df" mode. Once that you get the data frame you can select the required ids on the `unit` parameter.

On mode = "df" the only relevant parameters are `spatialtype`, `year`.

Value

A `sf` object on mode = "sf" or a data frame on mode = "df".

About caching

You can set your `cache_dir` with `gisco_set_cache_dir()`.

Sometimes cached files may be corrupt. On that case, try re-downloading the data setting `update_cache = TRUE`.

If you experience any problem on download, try to download the corresponding `.geojson` file by any other method and save it on your `cache_dir`. Use the option `verbose = TRUE` for debugging the API query.

For a complete list of files available check `gisco_db`.

Note

Country-level files would be renamed on your `cache_dir` to avoid naming conflicts with NUTS-0 datasets.

Please check the download and usage provisions on `gisco_attributions()`.

Author(s)

dieghernan, <https://github.com/dieghernan/>

Source

<https://gisco-services.ec.europa.eu/distribution/v2/>

See Also

`gisco_get_countries()`

Other political: `gisco_bulk_download()`, `gisco_get_coastallines()`, `gisco_get_countries()`, `gisco_get_lau()`, `gisco_get_nuts()`, `gisco_get_postalcodes()`, `gisco_get_urban_audit()`

Examples

```
cities <- gisco_get_units(  
  id_giscoR = "urban_audit",  
  mode = "df",  
  year = "2020"  
)  
VAL <- cities[grep("Valencia", cities$URAU_NAME), ]  
# Order from big to small  
VAL <- VAL[order(as.double(VAL$AREA_SQM), decreasing = TRUE), ]  
  
VAL.sf <- gisco_get_units(  
  id_giscoR = "urban_audit",  
  year = "2020",  
  unit = VAL$URAU_CODE
```

```

)
# Provincia
Provincia <-
  gisco_get_units(
    id_giscoR = "nuts",
    unit = c("ES523"),
    resolution = "01"
  )

# Reorder
VAL.sf$URAU_CATG <- factor(VAL.sf$URAU_CATG, levels = c("F", "K", "C"))

# Plot
library(ggplot2)

ggplot(Provincia) +
  geom_sf(fill = "gray1") +
  geom_sf(data = VAL.sf, aes(fill = URAU_CATG)) +
  scale_fill_viridis_d() +
  labs(
    title = "Valencia",
    subtitle = "Urban Audit",
    fill = "Urban Audit\ncategory"
  )

```

gisco_get_urban_audit *Get GISCO greater cities and metropolitan areas sf objects*

Description

Returns polygons and points corresponding to cities, greater cities and metropolitan areas included on the **Urban Audit report** of Eurostat.

Usage

```

gisco_get_urban_audit(
  year = "2021",
  epsg = "4326",
  cache = TRUE,
  update_cache = FALSE,
  cache_dir = NULL,
  verbose = FALSE,
  spatialtype = "RG",
  country = NULL,
  level = NULL
)

```

Arguments

| | |
|--------------|---|
| year | Release year of the file. One of "2001", "2004", "2014", "2018", "2020" or "2021". |
| epsg | projection of the map: 4-digit EPSG code . One of: <ul style="list-style-type: none"> • "4258": ETRS89 • "4326": WGS84 • "3035": ETRS89 / ETRS-LAEA • "3857": Pseudo-Mercator |
| cache | A logical whether to do caching. Default is TRUE. See About caching . |
| update_cache | A logical whether to update cache. Default is FALSE. When set to TRUE it would force a fresh download of the source .geojson file. |
| cache_dir | A path to a cache directory. See About caching . |
| verbose | Logical, displays information. Useful for debugging, default is FALSE. |
| spatialtype | Type of geometry to be returned: <ul style="list-style-type: none"> • "LB": Labels - POINT object. • "RG": Regions - MULTIPOLYGON/POLYGON object. |
| country | Optional. A character vector of country codes. It could be either a vector of country names, a vector of ISO3 country codes or a vector of Eurostat country codes. Mixed types (as c("Italy", "ES", "FRA")) would not work. See also countrycode::countrycode() . |
| level | Level of Urban Audit. Possible values are "CITIES", "FUA", "GREATER_CITIES" or NULL, that would download the full dataset. |

Value

A `sf` object specified by `spatialtype`.

About caching

You can set your `cache_dir` with [gisco_set_cache_dir\(\)](#).

Sometimes cached files may be corrupt. On that case, try re-downloading the data setting `update_cache = TRUE`.

If you experience any problem on download, try to download the corresponding .geojson file by any other method and save it on your `cache_dir`. Use the option `verbose = TRUE` for debugging the API query.

For a complete list of files available check [gisco_db](#).

Note

Please check the download and usage provisions on [gisco_attributions\(\)](#).

Source

<https://gisco-services.ec.europa.eu/distribution/v2/>

See Also

[gisco_get_communes\(\)](#), [gisco_get_lau\(\)](#)

Other political: [gisco_bulk_download\(\)](#), [gisco_get_coastallines\(\)](#), [gisco_get_countries\(\)](#), [gisco_get_lau\(\)](#), [gisco_get_nuts\(\)](#), [gisco_get_postalcodes\(\)](#), [gisco_get_units\(\)](#)

Examples

```
cities <- gisco_get_urban_audit(year = "2020", level = "CITIES")

if (!is.null(cities)) {
  bcn <- cities[cities$URAU_NAME == "Barcelona", ]

  library(ggplot2)
  ggplot(bcn) +
    geom_sf()
}
```

`gisco_nuts`

All NUTS POLYGON object

Description

A `sf` object including all NUTS levels as provided by GISCO (2016 version).

Format

A POLYGON data frame (resolution: 1:20million, EPSG:4326) object with 2,016 rows and 11 variables:

NUTS_ID NUTS identifier.

LEVL_CODE NUTS level code (0, 1, 2, 3).

URBN_TYPE Urban Type, see **Details**.

CNTR_CODE Eurostat Country code.

NAME_LATN NUTS name on Latin characters.

NUTS_NAME NUTS name on local alphabet.

MOUNT_TYPE Mount Type, see **Details**.

COAST_TYPE Coast Type, see **Details**.

FID FID.

geo Same as NUTS_ID, provided for compatibility with **eurostat**.

geometry geometry field.

Details

MOUNT_TYPE: Mountain typology:

- 1: More than 50 % of the surface is covered by topographic mountain areas.
- 2: More than 50 % of the regional population lives in topographic mountain areas.
- 3: More than 50 % of the surface is covered by topographic mountain areas and where more than 50 % of the regional population lives in these mountain areas.
- 4: Non-mountain region / other regions.
- 0: No classification provided.

URBN_TYPE: Urban-rural typology:

- 1: Predominantly urban region.
- 2: Intermediate region.
- 3: Predominantly rural region.
- 0: No classification provided.

COAST_TYPE: Coastal typology:

- 1: Coastal (on coast).
- 2: Coastal (less than 50% of population living within 50 km. of the coastline).
- 3: Non-coastal region.
- 0: No classification provided.

Source

[NUTS_RG_20M_2016_4326.geojson](#) file.

See Also

[gisco_get_nuts\(\)](#)

Other dataset: [gisco_coastallines](#), [gisco_countries](#), [gisco_countrycode](#), [gisco_db](#)

Examples

```
data("gisco_nuts")
head(gisco_nuts)
```

`gisco_set_cache_dir` *Set your [R](https://CRAN.R-project.org/package=giscoR) cache dir*

Description

This function will store your `cache_dir` path on your local machine and would load it for future sessions. Type `Sys.getenv("GISCO_CACHE_DIR")` to find your cached path or use `gisco_detect_cache_dir()`.

Alternatively, you can store the `cache_dir` manually with the following options:

- Run `Sys.setenv(GISCO_CACHE_DIR = "cache_dir")`. You would need to run this command on each session (Similar to `install = FALSE`).
- Write this line on your `.Renviro`n file: `GISCO_CACHE_DIR = "value_for_cache_dir"` (same behavior than `install = TRUE`). This would store your `cache_dir` permanently. See also `usethis::edit_r_enviro`n().

Usage

```
gisco_set_cache_dir(
  cache_dir,
  overwrite = FALSE,
  install = FALSE,
  verbose = TRUE
)

gisco_detect_cache_dir(...)
```

Arguments

| | |
|------------------------|---|
| <code>cache_dir</code> | A path to a cache directory. On missing value the function would store the cached files on a temporary dir (See <code>base::tempdir()</code>). |
| <code>overwrite</code> | If this is set to <code>TRUE</code> , it will overwrite an existing <code>GISCO_CACHE_DIR</code> that you already have in local machine. |
| <code>install</code> | If <code>TRUE</code> , will install the key in your local machine for use in future sessions. Defaults to <code>FALSE</code> . If <code>cache_dir</code> is <code>FALSE</code> this parameter is set to <code>FALSE</code> automatically. |
| <code>verbose</code> | Logical, displays information. Useful for debugging, default is <code>FALSE</code> . |
| <code>...</code> | Ignored |

Value

`gisco_set_cache_dir()` returns an (invisible) character with the path to your `cache_dir`, but it is mainly called for its side effect.

`gisco_detect_cache_dir()` returns the path to the `cache_dir` used in this session.

See Also

[rappdirs::user_config_dir\(\)](#)

Other cache utilities: [gisco_clear_cache\(\)](#)

Examples

```
# Don't run this! It would modify your current state
## Not run:
gisco_set_cache_dir(verbose = TRUE)

## End(Not run)

Sys.getenv("GISCO_CACHE_DIR")

gisco_detect_cache_dir()
```

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