

**CLEA  
GEOREFERENCED ELECTORAL  
DISTRICTS DATASETS**

**CODEBOOK**

**Version: February 15, 2019 (20190215)**

---

***TABLE OF CONTENTS***

---

<b>Section</b>	<b>Page</b>
<b>INTRODUCTION</b>	
<b>PROJECT DESCRIPTION</b>	3
<b>FUNDING SUPPORT</b>	3
<b>BIBLIOGRAPHIC CITATION</b>	4
<b>CREDITS</b>	5
<b>DATA PREPARATION</b>	
<b>DATA DESIGN</b>	6
<b>DOCUMENTATION OF VARIABLES</b>	
<b>VARIABLE LIST</b>	8
<b>VARIABLE DESCRIPTIONS</b>	8
<b>COUNTRY SOURCE DOCUMENTATION</b>	11

# INTRODUCTION

## GeoReferenced Electoral Districts Project Description

The GeoReferenced Electoral Districts (GRED) project is produced by the Constituency-Level Elections Archive (CLEA). GRED provides geo-referenced maps for electoral constituencies used in national legislative lower chamber elections of select countries that appear in the main CLEA dataset. The goal of this project is to offer maps formatted in a manner so they can be employed to present visualizations of election results, as well as linked to other standard geo-referenced data, allowing researchers to study a variety of research questions at the constituency level. To date, no other large-scale cross-country collection of geo-referenced maps of electoral constituencies exists that is coded consistently and accurately. The GRED dataset strives to fulfill this need in the research community, in addition to having applications to policy and practice. The dataset covers 74 countries, including historical material for some of these countries that appropriately captures changes in the boundaries of electoral constituencies implemented over time.

## CLEA Project Description

The central aim of the Constituency-Level Elections Archive (CLEA) project is to produce a repository of detailed results – i.e., votes received by each candidate/party, total votes cast, number of eligible voters – at a constituency level for the lower chamber legislative elections that have been conducted around the world. Our motivation is to preserve and consolidate these valuable data in one comprehensive reference resource that is publicly available at no cost. This public good is expected to be of use to a range of audiences for purposes of research, education, and policy-making and evaluation.

## Funding Support

We gratefully acknowledge the American National Science Foundation ([www.nsf.gov](http://www.nsf.gov)), the University of Michigan's Office of Research, and the Taiwan Foundation for Democracy for funding CLEA, and we thank the Institute of Political Science at the University of St. Gallen for research assistance. These materials incorporate work supported by the National Science Foundation (under grants SES-0617101, SES-1021915, and SMA-1519594) and the University of Michigan's Office of Research. Any opinions, findings and conclusions or recommendations expressed in these materials are those of the author(s) and do not necessarily reflect the views of the funding organizations.

**Bibliographic Citation**

For citation of the entire GRED database, the following formats are recommended:

## APA (6th edition)

Kollman, K., Hicken, A., Caramani, D., Backer, D., Lublin, D., Selway, J., and Vasselai, F. (2019). *GeoReferenced Electoral Districts Dataset* [data files and codebook]. Ann Arbor, MI: Center for Political Studies, University of Michigan [producer and distributor]. Retrieved from <http://www.electiondataarchive.org>.

## MLA (8th edition)

Kollman, Ken, Allen Hicken, Daniele Caramani, David Backer, David Lublin, Joel Selway, David Lublin and Fabricio Vasselai. *GeoReferenced Electoral Districts Datasets*. Ann Arbor, MI: Center for Political Studies, University of Michigan [producer and distributor], 2019. Web. 15 February 2019.

## Chicago (17th edition)

Kollman, Ken, Allen Hicken, Daniele Caramani, David Backer, David Lublin, Joel Selway, and Fabricio Vasselai. 2019. *GeoReferenced Electoral Districts Datasets*. Produced and distributed by Ann Arbor, MI: Center for Political Studies, University of Michigan, <http://www.electiondataarchive.org>.

For citation of one set of country files from GRED, inclusion of the country name and year is recommended. For example:

## APA (6th edition)

Kollman, K., Hicken, A., Caramani, D., Backer, D., David Lublin, Selway, J., and Vasselai, F. (2019). *GeoReferenced Electoral Districts Datasets: Albania 2009* [data files and codebook]. Ann Arbor, MI: Center for Political Studies, University of Michigan [producer and distributor]. Retrieved from <http://www.electiondataarchive.org>.

## MLA (8th edition)

Kollman, Ken, Allen Hicken, Daniele Caramani, David Backer, David Lublin, Joel Selway, and Fabricio Vasselai. *GeoReferenced Electoral Districts Datasets: Albania 2009*. Ann Arbor, MI: Center for Political Studies, University of Michigan [producer and distributor], 2019. Web. 15 February 2019.

## Chicago (17th edition)

Kollman, Ken, Allen Hicken, Daniele Caramani, David Backer, David Lublin, Joel Selway, and Fabricio Vasselai. 2019. *GeoReferenced Electoral Districts Datasets: Albania 2009*. Produced and distributed by Ann Arbor, MI: Center for Political Studies, University of Michigan, <http://www.electiondataarchive.org>.

**Credits**

The co-directors of CLEA are Ken Kollman (University of Michigan), Allen Hicken (University of Michigan), Daniele Caramani (University of Zurich), David Backer (University of Maryland), and David Lublin (American University). The project manager is Yioryos Nardis (Center for Political Studies, University of Michigan).

Fabricio Vasselai (University of Michigan) and Joel Selway (Brigham Young University) provided geographic information system (GIS) files and curated the maps included in this release. Research assistance was provided by students from Brigham Young University. Andrew Versalle (Center for Political Studies, University of Michigan) provided programming and website assistance for this release.

## DATA PREPARATION

We collected geo-referenced maps from a variety of sources, with preference given to official sources. Existing maps of electoral constituencies were used when readily available. Otherwise, other types of maps (e.g. maps of administrative divisions) were used to construct maps of electoral constituencies using additional official information. The maps in this release of GRED match the constituencies for an election in a given country from the *2018/11/19* release of the CLEA Lower Chamber data.

Maps for this release of GRED were created using [ArcGIS®](#) 10.6.1 by ESRI (ArcGIS® and ArcMap™ are the intellectual property of ESRI and are used herein under license) and the open source [QGIS](#) 2.18.4. [OpenOffice](#) 4.0.1 and [R-software](#) 3.5.1 were used for matching and merging CLEA districts with the mapping files. All maps use the [WGS 1984](#) geographic coordinates system and the coordination type is degrees.

Although great care has been taken to prepare the data and codebook as accurately as possible prior to release, users may encounter imperfections. We would appreciate receiving your comments, feedback, and notification of errors. Please contact us at [clea-project@umich.edu](mailto:clea-project@umich.edu).

### Data Design

The GIS maps included in GRED are currently produced in the most widely used geospatial vector data format, called [shapefiles](#) (\*.shp). This free, non-database style file format, created and owned by ESRI, can be opened by virtually any GIS software - from free open source (e.g., [R-software](#), [QGIS](#), [GeoDa](#), etc.) to proprietary software (e.g., [ESRI ArcGIS suite](#)). All software directly open the \*.shp file, automatically reading the information from other required companion files (with extensions \*.shx, \*.dbf and \*.prj).<sup>1</sup>

GRED files are organized by country-election and named according to the following templates:

- GRED\_RELEASE\_COUNTRYNAME\_YEAR.shp  
The main shapefile, with map drawing information.
- GRED\_RELEASE\_COUNTRYNAME\_YEAR.shx  
Companion file that stores the position of individual polygon IDs in the .shp file.
- GRED\_RELEASE\_COUNTRYNAME\_YEAR.dbf  
A table in dBASE format, which contains the information on each map polygon (i.e., our GRED\_map table).
- GRED\_RELEASE\_COUNTRYNAME\_YEAR.prj  
The information on the coordinate system.

---

<sup>1</sup> These files have to always be placed together in the same folder and have exactly the same names (with the exception, of course, of having different file type extensions).

Where:

“RELEASE” identifies the GRED release with which the file is associated.

“COUNTRYNAME” identifies the name of the country to which the map refers.

“YEAR” identifies the year of the country’s national legislative lower (or unique) chamber election to which the map of electoral constituencies refers.

# DOCUMENTATION OF VARIABLES

## Variable List

GREED\_map table:

CTR_N	Country Name
CTR	Country Code
YR	Year of Lower Chamber Election
CST_N	Electoral Constituency Name
CST	Electoral Constituency Code

## Variable Descriptions

*CTR\_N*                      *Country Name*

Names of countries included in the GREED datasets.

Afghanistan	Estonia	Nicaragua
Albania	Finland	Norway
Argentina	Germany	Paraguay
Australia	Grenada	Peru
Austria	Guatemala	Poland
Bangladesh	Guyana	Portugal
Belgium	Honduras	Romania
Belize	Iceland	Russia
Bhutan	India	Saint Lucia
Bolivia	Indonesia	San Marino
Brazil	Ireland	Serbia
Bulgaria	Israel	Singapore
Cameroon	Italy	Slovakia
Canada	Kazakhstan	South Africa
Cape Verde	Latvia	Spain
Chile	Liechtenstein	Sri Lanka
Colombia	Luxembourg	Suriname
Costa Rica	Macedonia	Sweden
Croatia	Marshall Islands	Switzerland
Cyprus	Mexico	Trinidad and Tobago
Czech Republic	Moldova	United Kingdom
Denmark	Montenegro	United States
Dominican Republic	Namibia	Uruguay
Ecuador	Netherlands	Zambia
El Salvador	New Zealand	

**CTR**                      **Country Code**

Country codes based on [United Nations' standard country or area codes for statistical use](#).

004 Afghanistan	233 Estonia	558 Nicaragua
008 Albania	246 Finland	578 Norway
032 Argentina	276 Germany	600 Paraguay
036 Australia	308 Grenada	604 Peru
040 Austria	320 Guatemala	616 Poland
050 Bangladesh	328 Guyana	620 Portugal
056 Belgium	340 Honduras	642 Romania
084 Belize	352 Iceland	643 Russia
064 Bhutan	356 India	662 Saint Lucia
068 Bolivia	360 Indonesia	674 San Marino
076 Brazil	372 Ireland	688 Serbia
100 Bulgaria	376 Israel	702 Singapore
120 Cameroon	380 Italy	703 Slovakia
124 Canada	398 Kazakhstan	710 South Africa
132 Cape Verde	428 Latvia	724 Spain
152 Chile	438 Liechtenstein	144 Sri Lanka
170 Colombia	442 Luxembourg	740 Suriname
188 Costa Rica	807 Macedonia	752 Sweden
191 Croatia	584 Marshall Islands	756 Switzerland
196 Cyprus	484 Mexico	780 Trinidad and Tobago
203 Czech Republic	498 Moldova	826 United Kingdom
208 Denmark	499 Montenegro	840 United States
214 Dominican Republic	516 Namibia	858 Uruguay
218 Ecuador	528 Netherlands	894 Zambia
222 El Salvador	554 New Zealand	

**YR**                      **Year of Lower Chamber Election**

Election year covered by the country's electoral constituency map and for which electoral results are available in the CLEA Lower Chamber data.

**CST\_N**                      **Constituency Name**

Name of geographical area that a particular elected representative or group of elected representatives represents. In some instances, the name differs slightly from the CLEA election data where the official map source used a variation of the name.

***CST******Constituency Code***

A unique numeric code assigned to each constituency in each election in a country. These codes match the codes used for the same country-election year in the CLEA Lower Chamber data. An exception occurs when some countries have specific geographic areas where citizens do not have the right to vote for the national legislative lower chamber. In such cases, the geographic areas are included for completeness, even if they are not technically an electoral constituency for purposes of the elections of representatives to the lower chamber, and are assigned a code of '-999'.

-----

# COUNTRY SOURCE DOCUMENTATION

## (in alphabetical order by country)

### Afghanistan

#### 1. Included elections:

2005

#### 2. Sources:

Global Administrative Areas (2012). "Afghanistan." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

#### 3. Processing of source data:

Since the electoral constituencies are the 1<sup>st</sup> level administration divisions (provinces), which are readily available in the GADM data, maps from that source were matched for usage in GRED. This mapping excludes the tribal minority constituency of Kuchi, which is not associated with a specific geographical area.

### Albania

#### 1. Included elections:

2009

#### 2. Sources:

Global Administrative Areas (2012). "Albania." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

#### 3. Processing of source data:

Since the electoral constituencies are the 1<sup>st</sup> level administration divisions (counties), which are readily available in the GADM data, maps from that source were matched for usage in GRED.

## Argentina

### 1. Included elections:

2003

### 2. Sources:

Global Administrative Areas (2012). “Argentina.” GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since the electoral constituencies are the 1<sup>st</sup> level administration divisions (provinces [*provincias*] and the federal district [*distrito federal*]), which are readily available in the GADM data, maps from that source were matched for usage in GRED.

Two minor corrections were performed, eliminating intra-polygon tiny holes at decimal coordinates (-59.129, -38.703) and (-62.137, -39.000). We acknowledge Alton B. H. Worthington for bringing this issue to our attention.

## Australia

### 1. Included elections:

2010

### 2. Sources:

Australian Electoral Commission. “Maps and spatial data” [online] URL: <http://www.aec.gov.au/Electorates/maps.htm>

### 3. Processing of source data:

None – the electoral constituency map was obtained directly from the official source mentioned above in shapefile format.

## Austria

### 1. Included elections:

2008

### 2. Sources:

Global Administrative Areas (2012). "Austria." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

Statistics Austria (2014). "Regional electoral zones – Overview, key date 2014." Statistics Austria: The Information Manager. [online] URL:

[http://www.statistik.at/web\\_en/classifications/regional\\_breakdown/regional\\_electoral\\_zones/index.html](http://www.statistik.at/web_en/classifications/regional_breakdown/regional_electoral_zones/index.html)

### 3. Processing of source data:

The GADM map with 2<sup>nd</sup> level administrative divisions was used and matched to the Statistics Austria list of electoral constituencies. In Austria, the districts (Bezirke) and statutory cities (Statutarstädte) were merged to form the electoral constituencies. From Statistics Austria, we got a list of electoral constituencies that also described which districts (Bezirke) and statutory cities (Statutarstädte) belonged to each constituency. Then, we used the GADM map of Austrian 2<sup>nd</sup> level administrative divisions to merge districts and statutory cities accordingly, thus forming the electoral constituencies.

## Bangladesh

### 1. Included elections:

2008

### 2. Sources:

Dhaka Tribune (2014). Map of electoral constituencies of Bangladesh [online] URL:

<http://election.dhakatribune.com/app/webroot/img/bangladesh.png>

### 3. Processing of source data:

First, the original PNG image of electoral constituencies was georeferenced automatically. Next, manual corrections for accuracy were made to the following constituencies' boundaries: Bagerhat-1, Barguna-1, Barguna-2, Barisal-3, Barisal-4, Bhola-3, Bhola-4, Chittagong-16, Cox's Bazar-3, Dhaka-1 to Dhaka-20, Jessore-4, Khulna-1, Khulna-4, Lakshmipur-4, Noakhali-4, Noakhali-5, Noakhali-6, Patuakhali-1, Patuakhali-2, Patuakhali-3, Patuakhali-4, Satkhira-2, Shariatpur-2, Shariatpur-3.

## Belgium

### 1. Included elections:

1995

### 2. Sources:

Global Administrative Areas (2012). "Belgium." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

In Belgium, the electoral constituencies are *circonscriptions* (20 in total). For the GRED map, the electoral constituencies were created by merging the 2<sup>nd</sup> level administrative divisions of Belgium (*arrondissements*), which were taken from the 3<sup>rd</sup> level GADM file. Information to identify which *arrondissement* belonged to each electoral constituency was compared to data available at the *Direction Générale Institutions et Population* (<http://www.ibz.rn.fgov.be>).

Electoral constituencies were created by merging the 2<sup>nd</sup> level administrative divisions of Belgium (*arrondissements*), which were taken from the 2<sup>nd</sup> level GADM file. Information to identify which *arrondissement* belonged to each electoral constituency was based on data available at the *Direction Générale Institutions et Population*.

## Belize

### 1. Included elections:

2012

### 2. Sources:

Ramos, Adele (2016). "Belize General Elections Results 2012". [online] URL: <https://www.arcgis.com/home/item.html?id=43058799b9894955a4da87d19950d816>

Elections and Boundaries Department (2016). "Electoral Boundaries and Maps". [online] URL: <http://www.elections.gov.bz/modules/wfdownloads/viewcat.php?cid=83>

### 3. Processing of source data:

Electoral constituencies downloaded from Adele (2016), with boundaries and names verified based on the official information provided by the Elections and Boundaries Department.

**Bhutan****1. Included elections:**

2008

**2. Sources:**

Professor Joel Selway, Brigham Young University.

**Bolivia****1. Included elections:**

2014

**2. Sources:**

Órgano Electoral Plurinacional. [online] URL: <http://www.oep.org.bo/index.php/geografia-electoral>

**3. Processing of source data:**

Single-member district [SMD] and proportional representation [PR] tiers are included. Maps of electoral districts for the SMD lower tier were downloaded directly from the electoral commission. The maps of electoral districts for the PR upper tier (i.e., *plurinominales*) were created using official information on which SMD belonged to each PR district.

## Brazil

### 1. Included elections:

1945, 1950, 1954, 1958, 1962, 1966, 1970, 1974, 1978, 1982, 1986, 1990, 1994, 1998, 2002, 2006, 2010, 2014

### 2. Sources:

Brazilian Institute of Geography and Statistics. "Maps: Bases and References." IBGE DIVISÃO DE MAPAS [online] URL: <http://mapas.ibge.gov.br/bases-e-referenciais>

### 3. Processing of source data:

Since at least 1945, the electoral constituencies for the national lower chamber in Brazil are comprised of the states and of a special federal district representing the country's capital. In some years (e.g., 1945), there were also additional special federal territories where electors did not vote in lower chamber elections. Historical maps of Brazil divided into states and municipalities were downloaded from the official source. Federal districts (current and former capitals) were created by splitting the relevant GIS polygon representing their municipalities from the GIS polygon that represented the states they would be located in. Federal territories were created by merging the relevant municipalities that belonged to them – the list of which came from the historical laws that regulated the creation and dissolution of the federal territories.

## Bulgaria

### 1. Included elections:

2009

### 2. Sources:

Professor Joel Selway, Brigham Young University.

## Cameroon

### 1. Included elections:

1997

### 2. Sources:

Global Administrative Areas (2012). “Cameroon” GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since electoral constituencies are equivalent to the 2<sup>nd</sup> level administrative divisions of Cameroon (departments), constituencies were matched to the maps available in GADM for this level.

## Canada

### 1. Included elections:

2011

### 2. Sources:

Canada Centre for Mapping and Earth Observation (2011). “Federal Electoral Districts of Canada – 2011.” Government of Canada, Natural Resources Canada, Earth Sciences Sector [online] URL: <http://geogratis.gc.ca/api/en/nrcan-rncan/ess-sst/6d1d8f90-1c25-5fd0-880d-138d27c8cb57.html>

### 3. Processing of source data:

The electoral constituency maps were obtained directly from the official source in shapefile format.

## Cape Verde

### 1. Included elections:

2016

### 2. Sources:

Comissão Nacional Eleitoral (2011). “Mapas eleitorais” [online] URL: <http://www.cne.cv/>.

Wikimedia (2016). “Map results of Cape Verde Parliamentary Election 2016”. [online] URL: [https://upload.wikimedia.org/wikipedia/commons/2/23/Map\\_results\\_of\\_Cape\\_Verde\\_Parliamentary\\_Elections\\_2016.png](https://upload.wikimedia.org/wikipedia/commons/2/23/Map_results_of_Cape_Verde_Parliamentary_Elections_2016.png)

### 3. Processing of source data:

Electoral constituency map was created from the online image at Wikimedia, with official information from the National Electoral Commission (*Comissão Nacional Eleitoral*).

## Chile

### 1. Included elections:

2013

### 2. Sources:

Biblioteca del Congreso Nacional de Chile (2011). “División comunal: polígonos de las comunas de Chile”. Mapas vectoriales. [online] URL: [http://siit2.bcn.cl/mapas\\_vectoriales/index\\_html/](http://siit2.bcn.cl/mapas_vectoriales/index_html/).

Biblioteca del Congreso Nacional de Chile (2016). “División Político-Electoral”. Chile nuestro país. [online] URL: <http://www.bcn.cl/siit/nuestropais/divisionelectoral/index.htm>.

### 3. Processing of source data:

Maps of electoral constituencies were generated using a recent map of the communes (a low-level administrative division) in Chile and information about which communes belong to each electoral constituency.

## Colombia

### 1. Included elections:

2006

### 2. Sources:

Global Administrative Areas (2012). “Colombia.” GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Almost all electoral constituencies matched the 1<sup>st</sup> level administrative divisions, which are known as departments (*departamentos*), intendancies (*intendencias*) or commissaries (*comisarías*). For these constituencies, the 1<sup>st</sup> level map from GADM served as the main electoral constituency map. The polygon corresponding to the capital district from the 2<sup>nd</sup> level GADM map of Colombian municipalities (*municipios*) was used to create the capital district (distrito capital). This was added to the map based on 1<sup>st</sup> level administrative divisions by clipping it over the department of Cundinamarca to avoid overlaps.

## Costa Rica

### 1. Included elections:

2006

### 2. Sources:

Global Administrative Areas (2012). "Costa Rica." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since electoral constituencies are equivalent to the 1<sup>st</sup> level administrative divisions of Costa Rica (*provincias*), constituencies were matched to the maps available in GADM for this level.

## Croatia

### 1. Included elections:

2011

### 2. Sources:

Professor Joel Selway, Brigham Young University.

### 3. Processing of source data:

Note that the 11<sup>th</sup> constituency for electors from abroad and also the exclusive non-geographical constituencies for minorities cannot be appropriately represented in maps.

## Cyprus

### 1. Included elections:

2016

### 2. Sources:

Global Administrative Areas (2012). "Cyprus" GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since electoral constituencies are equivalent to the 1<sup>st</sup> level administrative divisions of Cyprus (districts), constituencies were matched to the maps available in GADM for this level.

## Czech Republic

### 1. Included elections:

2006

### 2. Sources:

Global Administrative Areas (2012). "Czech Republic." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since electoral constituencies are equivalent to the 1<sup>st</sup> level administrative divisions of the Czech Republic (*kraje*), constituencies were matched to the maps available in GADM for this level.

## Denmark

### 1. Included elections:

2007

### 2. Sources:

Danish Ministry of the Environment (2014). "Survey and Cadastre of Denmark." Danish Geodata Agency. [online] URL: [http://eng.gst.dk/maps-topography/#.U7\\_xofldXmc](http://eng.gst.dk/maps-topography/#.U7_xofldXmc)

### 3. Processing of source data:

Maps of electoral constituencies were obtained directly from the official source as a shapefile. The constituencies correspond to the countries. The maps exclude Greenland and the Faore Islands. Raw maps from the Public Agency Kort & Matrikelstryelsen were provided by Prof. Søren Risbjerg Thomsen. Prof. Søren Risbjerg Thomsen provided free-to-use raw maps from the Danish Geodata Agency, with Denmark divided into nomination districts (*opstillingskredse*). Additional information from professor Thomsen, from the Danish Geodata Agency and from Statistics Denmark (<https://www.dst.dk>) were used to identify which nomination districts belonged to which electoral constituency, which were then created. Notice that the maps exclude Greenland and the Faroe Islands.

## Dominican Republic

### 1. Included elections:

1998

### 2. Sources:

Global Administrative Areas (2012). "Dominican Republic." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Constituencies for the 1998 election matched the 1<sup>st</sup> level administrative divisions, which were the 29 provinces (*provincias*) plus the National District (*Distrito Nacional*). The maps available from GADM reflect a change that increased the number of 1<sup>st</sup> level administrative divisions from 30 to 32. Matching these current maps to the constituencies for the 1998 election required two modifications. First, the current National District and the province of Santo Domingo from the GADM file were merged, to capture the prior boundaries of the National District. Second, the provinces of Peravia and of San José de Ocoa from the GADM file were merged to capture the boundaries of the province of Peravia that previously existed.

## Ecuador

### 1. Included elections:

2009

### 2. Sources:

Global Administrative Areas (2012). “Ecuador” GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since electoral constituencies are equivalent to the 1<sup>st</sup> level administrative divisions of Ecuador (provinces), constituencies were matched to the maps available in GADM for this level.

## El Salvador

### 1. Included elections:

2015

### 2. Sources:

Electoral Geography Website (2009). “El Salvador. Legislative Election 2009” [online] URL: <https://www.electoralgeography.com/new/en/wp-content/gallery/el-salvador2009/2009-elsalvador.gif>.

### 3. Processing of source data:

A digital map was automatically georeferenced from the original GIF image and checked for errors against multiple online sources, including official information about the electoral constituencies, in order to decrease the likelihood of errors.

## Estonia

### 1. Included elections:

2015

### 2. Sources:

Maps of World (2015). "Map of Elections in Estonia 2015" [online] URL: <http://www.mapsofworld.com/elections/estonia/>.

Valimised (n.d.). "Elections and referendums". [online] URL: <http://www.vvk.ee/past-elections/>.

### 3. Processing of source data:

A digital map was automatically georeferenced from the original online image and checked for errors using information from the Estonian electoral commission.

## Finland

### 1. Included elections:

2007

### 2. Sources:

Global Administrative Areas (2012). "Finland." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

Ministry of Justice (2014). "Parliamentary Elections 18.3.2007 - Results". Ministry of Justice Election Unit. [online] URL: <http://tulospalvelu.vaalit.fi/E2007/e/tulos/lasktila.html>.

### 3. Processing of source data:

Maps of electoral constituencies were created by merging lower administrative units from GADM maps. Almost constituencies but one were merged from Finish sub-regions (Seutukunta/Ekonomisk region), which are in the 3rd level GADM file. One constituency, the city of Helsinki, was copied from the municipality (*Kunt/Kommun*) in the 4th level GADM file, added into the main map and clipped from the Sub-region of Uusimaa to avoid overlapping. Information on the sub-regions and municipalities that formed each electoral constituency came from the Ministry of Justice (*Vaalit*).

## Germany

### 1. Included elections:

2009 (only Proportional Representation tier currently available)

### 2. Sources:

The Federal Returning Office (2014). [online] URL:

[http://www.bundeswahlleiter.de/en/bundestagswahlen/BTW\\_BUND\\_09/wahlkreiseinteilung/kartogaphische\\_darstellung.html](http://www.bundeswahlleiter.de/en/bundestagswahlen/BTW_BUND_09/wahlkreiseinteilung/kartogaphische_darstellung.html)

### 3. Processing of source data:

Electoral constituencies are equivalent to the 1<sup>st</sup> level administrative divisions of Germany (*länder*). Map of electoral constituencies used in the Proportional Representation tier was obtained directly from the official source.

## Grenada

### 1. Included elections:

2013

### 2. Sources:

Professor Joel Selway, Brigham Young University.

## Guatemala

### 1. Included elections:

2007

### 2. Sources:

Professor Joel Selway, Brigham Young University.

## Guyana

### 1. Included elections:

2001

### 2. Sources:

Global Administrative Areas (2012). "Guyana." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since electoral constituencies are equivalent to the 1<sup>st</sup> level administrative divisions of Guyana (administrative regions), constituencies were matched to the maps available in GADM for this level.

## Honduras

### 1. Included elections:

2005

### 2. Sources:

Global Administrative Areas (2012). "Honduras." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since electoral constituencies are equivalent to the 1<sup>st</sup> level administrative divisions of Honduras (*departamentos*), constituencies were matched to the maps available in GADM for this level.

## Iceland

### 1. Included elections:

2005

### 2. Sources:

Global Administrative Areas (2012). "Iceland." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since electoral constituencies are equivalent to the 1<sup>st</sup> level administrative divisions of Iceland (*landsvæðun*), constituencies were matched to the maps available in GADM for this level.

## India

### 1. Included elections:

2009

### 2. Sources:

Travel India Guide. "Parliamentary Constituencies of India for Election 2009." Travel India Guide – Parliamentary Constituencies Map & India Elections. [online] URL: <http://www.travelindia-guide.com/elections-indian-lok-sabha/parliamentary-constituencies.php>

Maps of India. "India General Election 2009." Maps of India – India Parliamentary Constituencies Map. [online] URL: <http://www.mapsofindia.com/parliamentaryconstituencies/> [date retrieved 1 April 2014]

Election Commission of India. "Detailed Results of Latest Elections – 2009." Election Commission of India – Election Results – Full Statistical Reports. [online] URL: [http://eci.nic.in/eci\\_main1/ElectionStatistics.aspx](http://eci.nic.in/eci_main1/ElectionStatistics.aspx)

### 3. Processing of source data:

Joel Selway obtained images for the electoral constituencies from the website *Travel India Guide*, then converted these images into Shapefiles. Modifications to these shapefiles were made using information from *Maps of India* and the Election Commission of India.

## Indonesia

### 1. Included elections:

2004

### 2. Sources:

Center for Southeast Asian Studies (2015). "Maps of the 2004 electoral districts". Northern Illinois University. [online] URL: [http://www.seasite.niu.edu/Indonesian/Indonesian\\_Elections/Districts04.htm](http://www.seasite.niu.edu/Indonesian/Indonesian_Elections/Districts04.htm).

Professor Ursula Daxecker, University of Amsterdam.

### 3. Processing of source data:

Electoral constituencies were geocoded by Professor Ursula Daxecker from high-quality maps created by Northern Illinois University.

## Ireland

### 1. Included elections:

2011

### 2. Sources:

Central Statistics Office (2014). "Electoral divisions". Census 2011 Boundary Files. [online] URL: <http://www.cso.ie/en/census/census2011boundaryfiles/>.

### 3. Processing of source data:

Maps of the electoral constituencies were obtained directly from the official source as a shapefile.

## Israel

### 1. Included elections:

2015

### 2. Sources:

Global Administrative Areas (2012). "Israel." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

National legislative elections to the unicameral legislature (Knesset) in Israel use proportional representation in a single nationwide constituency. Therefore, the electoral constituency map corresponds to the map of the country, which is easily obtained from GADM's 0 level map of administrative divisions.

## Italy

### 1. Included elections:

1996 (only Proportional Representation tier currently available)

### 2. Sources:

Global Administrative Areas (2012). "Italy." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

Italian Ministry of Interior (<http://www.interno.gov.it/>).

### 3. Processing of source data:

Each of the constituencies for the proportional representation tier of the 1996 election in Italy covered multiple 1<sup>st</sup> level administrative divisions (provinces [*provincias*]). The Italian Ministry of Interior sent the CLEA team an email that provides information on which province belonged to each electoral constituency. This information was used to develop maps, merging the data available from the GADM maps of 1<sup>st</sup> level administrative divisions. The region Valle d'Aosta did not have a PR tier and thus is excluded from the maps.

## Kazakhstan

### 1. Included elections:

2012

### 2. Sources:

Global Administrative Areas (2012). "Kazakhstan." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

National legislative elections to the lower chamber (*Majilis*) in Kazakhstan use proportional representation in a single nationwide constituency. Therefore, the electoral constituency map corresponds to the map of the country, which is easily obtained from GADM's 0 level map of administrative divisions.

## Latvia

### 1. Included elections:

2010

### 2. Sources:

Centrālā Statistikas Pārvalde. "Maps and spatial data". [online] URL: <https://www.csb.gov.lv/en/statistics/maps-and-spatial-data>.

Saeimas vēlēšanu likums (2016). [online] URL: <https://www.cvk.lv/pub/public/28367.html>

### 3. Processing of source data:

Electoral constituencies matched the Latvian provinces in the GADM database.

Map of Latvia divided into counties (*novadu*) and cities (*pilsētu*) was downloaded from the website of the countries central statistical bureau (*Centrālā Statistikas Pārvalde*). Then, the list of which counties and cities belonged to each electoral constituency was taken directly from the article 7 of the Latvian Saeima Election Law (*Saeimas vēlēšanu likums*). With that information, the GIS polygons corresponding to counties and cities were appropriately merged to build the electoral constituencies.

## Liechtenstein

### 1. Included elections:

2013

### 2. Sources:

Professor Joel Selway, Brigham Young University.

## Luxembourg

### 1. Included elections:

1994

### 2. Sources:

Global Administrative Areas (2012). "Luxembourg." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

Le Gouvernement Du Grand-Duche De Luxembourg (2014). "Elections 1994." Le Site Officiel Des Elections au Grand-Duche de Luxembourg. [online] URL: <http://www.elections.public.lu/fr/elections-legislatives/1994/index.html>

### 3. Processing of source data:

Maps for electoral constituencies were created by merging maps for the 2<sup>nd</sup> level administrative divisions (cantons) available from GADM. Information on which cantons formed each electoral constituency was obtained from the official electoral authority of Luxembourg.

## Macedonia

### 1. Included elections:

2011

### 2. Sources:

Professor Joel Selway, Brigham Young University.

## Marshall Islands

### 1. Included elections:

2011

### 2. Sources:

Professor Joel Selway, Brigham Young University.

## Mexico

### 1. Included elections:

2012

### 2. Sources:

Instituto Nacional Electoral (2016). “Productos de Geografía Electoral Descargables”. [online] URL: [http://portalanterior.ine.mx/archivos3/portal/historico/contenido/interiores/Detalle\\_Geografia\\_Electoral\\_y\\_Cartografia-id-04a9d8bd4ac04210VgnVCM1000000c68000aRCRD/](http://portalanterior.ine.mx/archivos3/portal/historico/contenido/interiores/Detalle_Geografia_Electoral_y_Cartografia-id-04a9d8bd4ac04210VgnVCM1000000c68000aRCRD/)

Instituto Nacional Electoral (2016). “Mapa de la República Mexicana con División de Circunscripciones Plurinominales”. [online] URL: [http://portalanterior.ine.mx/archivos1/Cartografia/CIRCUNSCRIPCIONES/CIRCUNSCRIPCIONES\\_COLOR\\_90x60\\_280813.pdf](http://portalanterior.ine.mx/archivos1/Cartografia/CIRCUNSCRIPCIONES/CIRCUNSCRIPCIONES_COLOR_90x60_280813.pdf)

### 3. Processing of source data:

Single-Member District [SMD] and Proportional Representation [PR] tiers are available. A shapefile covering the single-member districts was directly downloaded from the *Instituto Nacional Electoral*. This source lacked any labeling of the names of these districts. Diego Valle-Jones (an independent researcher) sent an email to the GRED team that provides the necessary information to label the district names. Maps for the five PR districts were developed by merging the corresponding SMD districts, using information obtained from official sources and provided by Professor Scott Morgenstern.

## Moldova

### 1. Included elections:

2010

### 2. Sources:

Global Administrative Areas (2012). "Moldova." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

National legislative elections to the unicameral legislature in Moldova use proportional representation in a single nationwide constituency. Therefore, the electoral constituency map corresponds to the map of the country, which is easily obtained from GADM's 0 level map of administrative divisions.

## Montenegro

### 1. Included elections:

2010

### 2. Sources:

Global Administrative Areas (2012). "Montenegro." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

National legislative elections to the unicameral legislature in Montenegro use proportional representation in a single nationwide constituency. Therefore, the electoral constituency map corresponds to the map of the country, which is easily obtained from GADM's 0 level map of administrative divisions.

## Namibia

### 1. Included elections:

2014

### 2. Sources:

Global Administrative Areas (2012). "Namibia." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

National legislative elections to the unicameral legislature in Namibia use proportional representation in a single nationwide constituency. Therefore, the electoral constituency map corresponds to the map of the country, which is easily obtained from GADM's 0 level map of administrative divisions.

## Netherlands

### 1. Included elections:

2010

### 2. Sources:

Global Administrative Areas (2014). "Netherlands." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

Nlverkiezingen (2014). "Electoral constituencies". Elections in Netherland. [online] URL: <http://www.nlverkiezingen.com/en/kk.html>.

### 3. Processing of source data:

Although in practice, the Netherlands uses a single national constituency, this national constituency is divided into distinct electoral constituencies (*kamer kieskringen*) for the presentation of party lists. Parties typically link their lists across constituencies and therefore the entire country effectively becomes a single national constituency. CLEA offers elections results at the level of the *kamer kieskringen*. GRED provides maps for the *kamer kieskringen*, whose polygons were built using different level administrative divisions from GADM and information from Nlverkiezingen.

## New Zealand

### 1. Included elections:

2008

### 2. Sources:

Statistics New Zealand (2007). "New Zealand Electoral Districts (NZTM)." Statistics New Zealand. [online] URL: [https://www3.stats.govt.nz/digitalboundaries/annual/New Zealand 2007 Electoral Districts \(NZTM\) \(8.35MB\).zip](https://www3.stats.govt.nz/digitalboundaries/annual/New Zealand 2007 Electoral Districts (NZTM) (8.35MB).zip)

### 3. Processing of source data:

Maps of the electoral constituencies were obtained directly from the official source as a shapefile. GRED excludes the Maori districts, for two reasons: (1) to follow the definition of geographic districts in the CLEA main dataset, and (2) to avoid confusion since these districts overlap the whole country. Maps for these districts are available upon request.

## Nicaragua

### 1. Included elections:

2011

### 2. Sources:

Global Administrative Areas (2012). "Nicaragua" GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since electoral constituencies are equivalent to the 1<sup>st</sup> level administrative divisions of Nicaragua (departments), constituencies were matched to the maps available in GADM for this level.

## Norway

### 1. Included elections:

2009

### 2. Sources:

Global Administrative Areas (2012). "Norway." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since electoral constituencies are equivalent to the 1<sup>st</sup> level administrative divisions of Norway (*fylker*), constituencies were matched to the maps available in GADM for this level.

## Paraguay

### 1. Included elections:

2008

### 2. Sources:

Global Administrative Areas (2012). "Paraguay" GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since electoral constituencies are equivalent to the 1<sup>st</sup> level administrative divisions of Paraguay (departments), constituencies were matched to the maps available in GADM for this level.

## Peru

### 1. Included elections:

2006

### 2. Sources:

Global Administrative Areas (2012). "Peru." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since electoral constituencies are equivalent to the 1<sup>st</sup> level administrative divisions of Peru (*departamentos*), constituencies were matched to the maps available in GADM for this level.

## Poland

### 1. Included elections:

2011

### 2. Sources:

Global Administrative Areas (2012). "Poland" GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

National Electoral Commission (2014). "Election to the Sejm. The Republic of Poland, 25 September 2005". Election results. <http://www.wybory2005.pkw.gov.pl/SJM/PL/WYN/M/17.htm>.

### 3. Processing of source data:

Electoral constituencies in Poland cover administrative divisions at multiple levels. Maps for the constituencies were developed by merging maps for the appropriate administrative divisions, available in GADM, using information on which divisions belonged to each constituency that was obtained from the National Electoral Commission.

## Portugal

### 1. Included elections:

2009

### 2. Sources:

Global Administrative Areas (2012). "Portugal." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since electoral constituencies are equivalent to the 1<sup>st</sup> level administrative divisions of Portugal (*distritos*), constituencies were matched to the maps available in GADM for this level.

## Romania

### 1. Included elections:

2000

### 2. Sources:

Global Administrative Areas (2012). "Romania." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Almost all electoral constituencies in Romania matched the 1<sup>st</sup> level administrative divisions (counties [*judete*]). Therefore, the maps of electoral constituencies reflect the maps for this level obtained from GADM. To assemble the map for the constituency of the city of Bucharest, the city boundary was manually drawn over the main map, creating a new constituency polygon. This polygon was then separated from the original county of Bucharest and named Ilfov, as in the official electoral sources.

## Russia

### 1. Included elections:

2003

### 2. Sources:

Global Administrative Areas (2012). "Russia." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Almost all the electoral constituencies considered matched the Russian highest-level administrative division known as federal subjects (*субъекты федерации / subyekty federatsii*). The exception is the City of Moscow. Maps of the federal subjects came from the 1<sup>st</sup> level GADM data on Russia. The city of Moscow was cut from the 2<sup>nd</sup> level GADM file on Russia and then pasted together with the federal subjects, clipping it from the Region of Moscow to avoid overlapping.

## Saint Lucia

### 1. Included elections:

2016

### 2. Sources:

Professor Joel Selway, Brigham Young University.

## San Marino

### 1. Included elections:

2008

### 2. Sources:

Global Administrative Areas (2012). "San Marino." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

The single nation-wide electoral constituency is simply the map of the country without any division (i.e. GADM's 0 level administrative divisions).

## Serbia

### 1. Included elections:

2012

### 2. Sources:

Global Administrative Areas (2012). "Serbia." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

National legislative elections to the unicameral legislature in Serbia use proportional representation in a single nationwide constituency. Therefore, the electoral constituency map corresponds to the map of the country, which is easily obtained from GADM's 0 level map of administrative divisions.

## Singapore

### 1. Included elections:

2006

### 2. Sources:

Kireev, Alexander (2014). "Singapore. Legislative Elections 2006." Electoral Geography 2.0. [online] URL: <http://www.electoralgeography.com/new/en/countries/s/singapore/singapore-legislative-election-2006.html>

Urban Redevelopment Authority. "Regoin\_Census2010." Singapore Government Data Portal. [online] URL: [http://data.gov.sg/Metadata/OneMapMetadata.aspx?id=Region\\_Census2010&mid=125346&t=SPATIA](http://data.gov.sg/Metadata/OneMapMetadata.aspx?id=Region_Census2010&mid=125346&t=SPATIA)

### 3. Processing of source data:

The map obtained from the Urban Redevelopment Authority (URA) was used as the primary image and corrected with satellite images from Google Maps. The image available at Electoral Geography was used as the basis for drawing the boundaries of electoral constituencies over the top of the URA map. The names of constituencies were verified using the list posted by the Singapore Elections Department (<http://www.eld.gov.sg/homepage.html>).

## Slovakia

### 1. Included elections:

2016

### 2. Sources:

Global Administrative Areas (2012). "Slovakia." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

National legislative elections to the unicameral legislature in Slovakia use proportional representation in a single nationwide constituency. Therefore, the electoral constituency map corresponds to the map of the country, which is easily obtained from GADM's 0 level map of administrative divisions.

## South Africa

### 1. Included elections:

2014

### 2. Sources:

Electoral Geography Website (2009). "South Africa. Legislative Election 2009" [online] URL: <https://www.electoralgeography.com/new/en/wp-content/gallery/south-africa2009/2009-south-africa-legislative.PNG>.

### 3. Processing of source data:

Digital maps of the electoral constituencies were automatically georeferenced from the original PNG image obtained from the Electoral Geography website, followed up by checking for errors against multiple online images in an attempt to decrease the chance of errors.

## Spain

### 1. Included elections:

2008

### 2. Sources:

Global Administrative Areas (2012). "Spain." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since electoral constituencies are equivalent to the 2<sup>nd</sup> level administrative divisions of Spain (*provincias*), constituencies were matched to the maps available in GADM for this level. This source incorrectly presents the Canary Islands as a single province, instead of two provinces (Las Palmas, Santa Cruz de Tenerife). Therefore, the GADM map for the Canary Islands was manually sub-divided into the appropriate provinces.

## Sri Lanka

### 1. Included elections:

2010

### 2. Sources:

Global Administrative Areas (2012). "Sri Lanka." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

Election Commission of Sri Lanka. "Electoral Process". [online] URL: <http://www.slections.gov.lk>.

### 3. Processing of source data:

Most of the electoral constituencies in Sri Lanka correspond to the country's 1<sup>st</sup> level administrative divisions. In those cases, constituencies were directly matched to GADM's maps for that level. Maps for the remaining constituencies were manually assembled using GADM maps for lower-level administrative divisions together with official information from the Election Commission of Sri Lanka on which divisions belonged to which constituencies.

## Suriname

### 1. Included elections:

2010

### 2. Sources:

Professor Joel Selway, Brigham Young University.

## Sweden

### 1. Included elections:

1952, 1956, 1958, 1960, 1964, 1968, 1970, 1973, 1976, 1979, 1982, 1985, 1988, 1991, 1994, 1998, 2002, 2006, 2010, 2014

### 2. Sources:

Riksarkivet (2016). "Historiska GIS-kartor (information om territoriella indelningar i Sverige från 1500-talets slut till 1900-talets slut)".

### 3. Processing of source data:

For each election year, maps for the electoral constituencies were assembled by manually merging the maps for Swedish municipalities (*kommune*). Information on which municipalities belonged to each electoral constituency was obtained from multiple volumes of the official Swedish Almanac, which also include election results. The "Allmänna valen - Riksdagsvalet" collection was printed (and scanned to PDF) by the Sveriges Officiella Statistik, Statistiska Centralbyrån.

## Switzerland

### 1. Included elections:

1995

### 2. Sources:

Global Administrative Areas (2012). "Switzerland." GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since electoral constituencies are equivalent to the 1<sup>st</sup> level administrative divisions of Switzerland (*cantons*), constituencies were matched to the maps available in GADM for this level.

## Trinidad and Tobago

### 1. Included elections:

2010

### 2. Sources:

Professor Joel Selway, Brigham Young University.

## United Kingdom

### 1. Included elections:

2010

### 2. Sources:

United Kingdom Ordnance Survey (2014). "OS OpenData: Mapping data and geographic information from Ordnance Survey" United Kingdom Ordnance Survey. [online] URL: <https://www.ordnancesurvey.co.uk/opendatadownload/products.html>

Boundary Commission of Northern Ireland (2014). "Existing Constituencies." Boundary Commission of Northern Ireland. [online] URL: <http://www.boundarycommission.org.uk/index/maps/existing-constituencies-maps.htm>

### 3. Processing of source data:

The maps of the electoral constituencies of the United Kingdom were assembled by merging the official maps from the UK Ordnance Survey (which does not include the constituencies in Northern Ireland) with the official map from the Boundary Commission of Northern Ireland.

## United States of America

### 1. Included elections:

1900, 1902, 1904, 1906, 1908, 1910, 1912, 1914, 1916, 1918, 1920, 1922, 1924, 1926, 1928, 1930, 1932, 1934, 1936, 1938, 1940, 1942, 1944, 1946, 1948, 1950, 1952, 1954, 1956, 1958, 1960, 1962, 1964, 1966, 1968, 1970, 1972, 1974, 1976, 1978, 1980, 1982, 1984, 1986, 1988, 1990, 1992, 1994, 1996, 1998, 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014

### 2. Sources:

Jeffrey B. Lewis, Brandon DeVine, Lincoln Pitcher, and Kenneth C. Martis. (2013). Digital Boundary Definitions of United States Congressional Districts, 1789-2012.

### 3. Processing of source data:

Maps of the electoral constituencies in the United States were obtained from Lewis et al., who reconstructed the constituency boundaries from historical official sources. Minor adjustments were made, for instance adding DC to the maps that did not have it (original maps were inconsistent in that regard) and paying attention to the different boundaries that DC had over time. Next, the data were matched to CLEA constituency codes. The matching procedure involved several steps: (1) the original maps identified each American electoral constituency in each election using the same code as Keith Poole's [Voteview site](#); (2) the names of candidates that ran in each constituency of each American election were imported from Voteview; (3) for each election, each electoral constituency was matched with the corresponding CLEA constituency code by using candidate names. This processing was performed with a customized *R* script and manual inspection.

## Uruguay

### 1. Included elections:

2014

### 2. Sources:

Global Administrative Areas (2012). "Uruguay" GADM database of Global Administrative Areas, version 2.0. [online] URL: [www.gadm.org](http://www.gadm.org).

### 3. Processing of source data:

Since electoral constituencies are equivalent to the 1<sup>st</sup> level administrative divisions of Uruguay (departments), constituencies were matched to the maps available in GADM for this level.

**Zambia****1. Included elections:**

2006

**2. Sources:**

Environmental Systems Resources Institute (2013). "Zambia ENEP in 2004." ArcGIS Public Repository [online] URL: <http://www.arcgis.com/home/item.html?id=2c9ecbe3929444a89e47b6737e935f06>

**3. Processing of source data:**

The source provides a shapefile of the boundaries of the electoral districts.