

Adolescent fertility: a multi-temporal subnational perspective across low and middle-income countries.

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The evolution of a population's age structure has long been considered to be an important predictor for the development of nations, their economic growth, future demographic burdens and challenges. In this respect, monitoring fertility and in particular, adolescent fertility can play a big role in helping to ensure maternal and newborn health, and access to education as highlighted by Sustainable Development Goal no. 3. The Sustainable Development Goals moral imperative of leaving no-one behind require accurate measures that are lost when looking at national averages, whereas they should take into account high degrees of spatial heterogeneity present subnationally. Despite this, the spatial detail of fertility indicators is often of a coarse resolution and difficult to obtain, with no co-ordination between countries and organisations to create one consistent set of subnational estimates. This work aims at providing fertility and adolescent fertility projections that cover the 2000-2020 timeframe at the finest representative subnational unit available for all low to middle-income countries employing the latest available data sources, from surveys to census data. The result is a detailed picture of reconstructed and projected fertility dynamics for 21 years time frame that can improve our understanding of changing fertility patterns in high fertility regimes.

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Data and method

The data for the global denominator dataset (women in reproductive age by 5 years age group) has been assembled using various sources, privileging census data whenever available. The subnational resolution aims to be the most informative and detailed, making sure that representativeness is kept throughout all the areas included, thus avoiding zero counts sub-groups.

Table 1 describes all the data sources employed for the realization of the denominator index. Besides obtaining estimates for women in reproductive age by 5-years age groups, population age structures by age and sex have been estimated for all countries at subnational level, splitting the children under 5 years old category into children under 1 (by sex) and children between 1 and 4 years old (also by sex).

Subnational data on age specific fertility rates (ASFRs) has been compiled for all countries in Latin America, Africa and Asia covered by the Demographic and Health Surveys (DHS) program, providing fertility rates for five year age groups, at subnational level. In countries not covered by the DHS, data was extracted for the sub-national distribution of ASFRs or total number of births from alternative sources. Final maps of the number and distribution of births have been generated for all of Africa, Latin America and the Caribbean at 1 km grid square resolution. This resolution has been used to aggregate up the number of births by relevant administrative units and compute adolescent birth rates as well as total fertility rates. Maps 1 and 2 portray the general fertility rate estimate (total number of births over women between 15 and 49) as the aggregation of gridded births into subnational administrative units is still on-going.

The datasets already produced for Africa, Latin America and the Caribbean can be accessed via http://www.worldpop.org.uk/data/get_data/

The standard approach adopted to produce age and sex structures at subnational level when data are available for one year only (i.e. a Census) is Iterative Proportional Fitting (IPF). After obtaining the mid-year population counts at sub-national level, we employ IPF using UN population estimates as target population for the year to be predicted. The Iterative Proportional Fitting method takes into account the age and sex group population distributions in the subnational areas. The base for calculating the mid-year population age and sex structures for the subnational areas come from the country's census 5-year age and sex groups. The numbers are prorated by a series of iterations to two sets of controls for that target date: UN midyear 0-1, 1-4, and successive 5-year age and sex group population projections for the country and the total population estimates for the subnational areas or national whenever the subnational estimates are not available.

The IPF method requires a two-step procedure, one where the subnational area age groups (both males and females) are raked to the corresponding UN midyear projected national population for that age group. Age and sex group repeats this process until the iterations lead to the same estimates. The number of iterations has been programmed through RCrans and set arbitrarily to 30, which abundantly ensures convergence. These steps are then repeated to estimate each year of the time series. IPF input years are then smoothed against UN total population estimates to avoid a jump between estimated years and the observed year, maintaining intact the age and sex structure at subnational level in the observed year.

When more than one year is available, we apply a trend method: shift share and IPF. Trend methods, have the advantage of allowing for different growth patterns across each subnational area, as controls can be calculated based on the population growth rates of the individual subnational areas relative to the country. This means that if a region grows more quickly with respect to the national growth rate then the shift share will capture this trend. The Shift-Share method can be used to compute a population estimate for a subnational area for a target date based on the linear rate of growth of its share of the country's population between two censuses. With the Shift-Share method, it is possible to obtain the average annual rate of change of the ratio of the population of each subnational area between the country's latest two censuses. Then the intercensal rate of change is extrapolated to the target year to yield a new ratio. With the projected national population from the UN estimates for a specific target midyear it is possible to estimate a target population for each subnational area for the target midyear.

Some countries with very small populations (i.e. Pitcairn), do not have population estimates with age and sex detail for target years within our time-series. In this case, we employed a pro-rating technique. Pro-rating distributes the population observed on the census date to a more recent date, keeping sex and age in the same proportions as those observed at the census (Manual III, ch. 2, A.49). This method is implemented by finding the ratio between

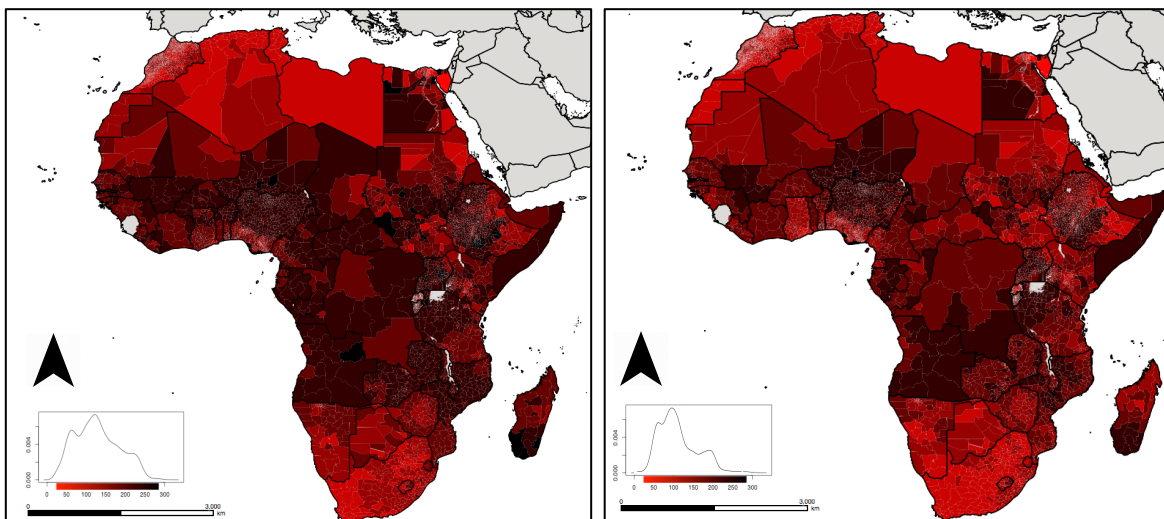
the total population on two dates, then multiplying all the observed numbers in each sex-age category by such ratio. This method has been applied for countries with small populations, where yearly estimates of total population were available, thus updating the incremental ratio yearly.

For those countries with no subnational detail, we used United Nations and US Census Bureau national estimates, highlighted in table one in column 3 whenever "Administrative Units" equals 1.

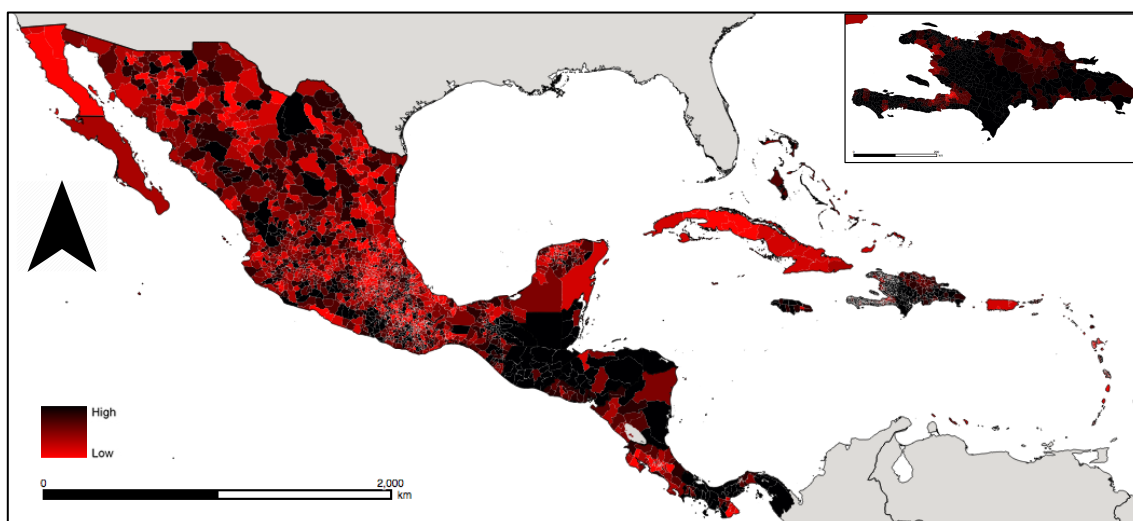
Preliminary results

Maps of general fertility rate highlight important subnational differences for all the considered countries (depicted here are Africa in map 1, Central America and the Caribbean in map 2 and Asia in map 3). The subnational detail allows to appreciate the difference across macro-regions, such as Maghreb, Middle Africa, Southern Africa, while the temporal dimension gives an overview of where the most important fertility decrease are going to take place. Future work plans to employ the computed adolescent fertility rate and total fertility rate time series to investigate convergence in fertility trends across the analysed countries across continents.

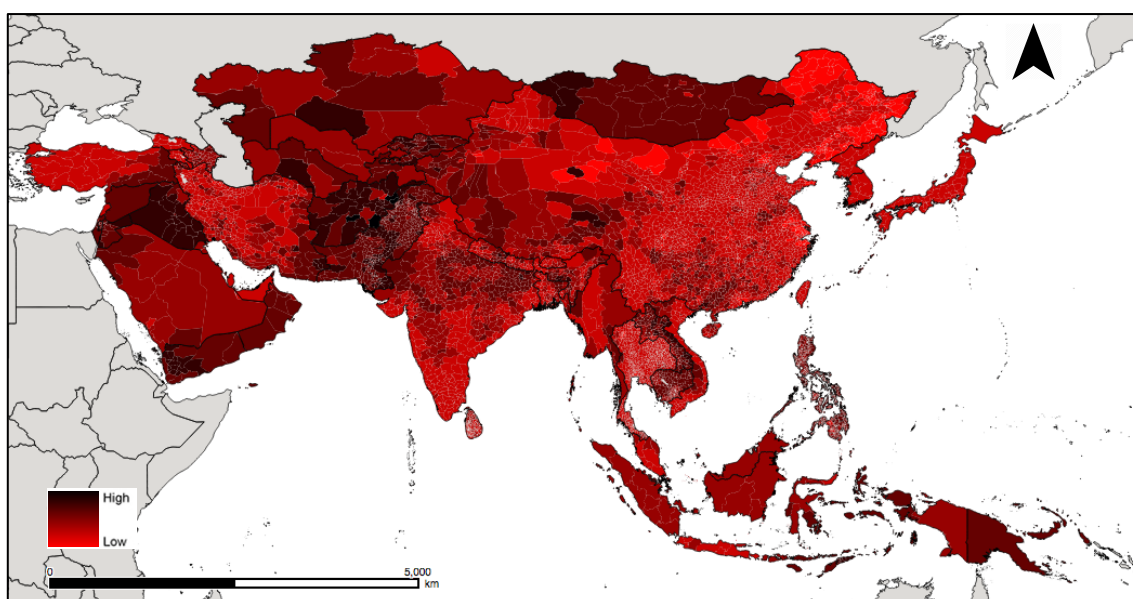
Map 1: Africa general fertility rate for year 2000 (left panel) and 2020 (right panel).



Map 2: Central America and Caribbean general fertility rate for year 2020, detail of Haiti and Dominican Republic in the upper right panel.



Map 3: Asia general fertility rate for year 2015.



Future developments

In addition to producing an accessible database of global subnational and ready to use population denominators by age and sex detail, as next step the production of annual high resolution gridded population counts datasets for every age and sex category, at $\sim 100 \times 100$ m grid cell, for the whole 2000-2020 time frame is being finalized.

Map 4. Somalia: number of male population under 1 year old in years 2000 (left panel) and 2014 (right panel).

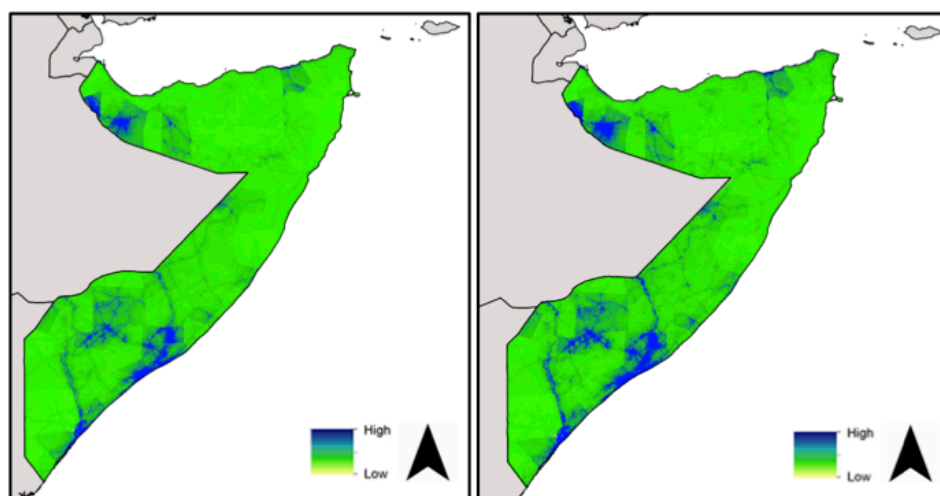


Table 1. Data source list by country, year of data employed and number of administrative units.

Country	Year	Admin. Units	Data source
Afghanistan	2015	34	ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com. [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Albania	2011	12	Institute of Statistics, Population and Housing Census 2011, Table 1.1.1, generated using INSTAT, http://www.instat.gov.al/figures/statistical-databases.aspx , Accessed 03/30/2015.
Algeria	2008	48	Office National des Statistiques, RPGH 2008, Table: Population résidente par age, par sexe et par commune, Office National des Statistiques, Published 01/01/2008, http://www.ons.dz/collections/w02_p3.pdf , Accessed 03/07/2012.
American Samoa	2000-2020	1	USCB http://www.census.gov/population/international/data/idb/informationGateway.php
Angola	2015-2016	18	ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com. [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Anguilla	2000-2020	1	USCB http://www.census.gov/population/international/data/idb/informationGateway.php
Armenia	2001-2011	11	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/DO20.V7.0 .
Azerbaijan	2009	74	State Statistical Committee of the Azerbaijan Republic, 2009 Population Census, Table: Distribution of population by age groups, sex and regions of Azerbaijan Republic, Received 04/23/2013.
Bangladesh	2011	64	Bangladesh Bureau of Statistics (BBS), Population & Housing Census 2011, ECLAC/CELADE Redatam+SP using REDATAM, http://203.112.218.69/binbgd/RpWebEngine.exe/Portal?BASE=HPC2011_short&lang=ENG , Accessed 9/26/2016.
Belarus	2001	6	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/DO20.V7.0 .
Belize	2010	6	Statistical Institute of Belize, Population and Housing Census 2010, Population section: Tables 17 to 22, http://www.sib.org.bz/statistics/population , Accessed 03/20/2015.
Benin	2013	77	Institut National de la Statistique et de l'Analyse Economique, Census 2013, Published 6/1/2015, RGPH4: Que Retenir des Effectifs de Population en 2013, Tableau 2 : Effectifs de population par département, commune et arrondissement au RGPH4, http://www.insae-bj.org/recensement-population.html , Accessed 7/21/2016.
Bhutan	2005	20	Office of the Census Commissioner, Royal Government of Bhutan, Population and Housing Census of Bhutan 2005, TABLE 3.8: Population by Age, Sex, Residence, Gewog/Town, Dzongkhag 2005, http://www.nsb.gov.bt/GIS/phcb/tables/PC/3.8%20%20POPULATION%20BY%20%20AGE,%20SEX,%20RESIDENCE,%20GEWO G.xls, Accessed 08/26/2011.

Bolivia (Plurinational State of)	2012	9	Instituto Nacional de Estadística (INE) Bolivia, Censo Nacional de Población y Vivienda 2012, Table: Es Mujer u Hombre, generated using REDATAM, http://datos.ine.gov.bo/binbol/RpWebEngine.exe/Portal?&BASE=CPV2012COM , Accessed 08/11/2014.
Bonaire, Saint Eustatius and Saba	2015, 2017	3	Statistics Netherlands, data on live births, deaths and population estimates. www.cbs.nl
Bosnia and Herzegovina	2013	284	BH Popis 2013, Popis stanovništva u Bosni i Hercegovini 2013, Stanovništvo Prema Starosti Po Petogodistima i Spolu, http://www.popis2013.ba/ , Accessed 7/20/2016.
Botswana	2000-2015	20	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Brazil	2000-2010	1980	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/DO20.V7.0 .
Bulgaria	2000-2016	6	EUROSTAT: https://ec.europa.eu/eurostat/data/database
Burkina Faso	2006	13	L'Institut national de la statistique et de la démographie (INSD) Burkina Faso, Published 10/01/2009, Recensement General de la Population et de l'Habitation (RGPH) de 2006, Analyse des Resultats Definitifs (Theme 2: Etat et Structure de la Population), Annexes du Chapitre 4: Structure Par Sexe et Age, http://www.insd.bf/n/content/enquetes_recensements/rgph-bf/themes_en_demographie/Theme2-Etat_et_structure_de_la_population.pdf , Accessed 8/24/2011.
Burundi	2008	133	Le ministre de l'Interieur de Burundi, Troisieme Recensement General de la Population et de l'Habitat de 2008, Table: Repartition de la Population par Province et Commune selon le Sexe, Published 04/05/2010, www.paris21.org/sites/default/files/BURUNDI-population-2008.PDF , Accessed 08/04/2011. Institute nationale de la statistique et des etudes economiques (INSEE), Population des communes par age et sex, Received 2/20/2015.
Cambodia	2000-2015	189	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Cameroon	2005	58	Bureau Central des Recensements et des Etudes de Population, 3rd RPGH 2005, Rapport de Presentation des Resultats Definitifs, http://www.statistics-cameroon.org/downloads/Rapport_de_presentation_3_RGPH.pdf , Accessed 07/06/2011.
Cape Verde	2010	44	National Institute of Statistics Cape Verde, Resultados definitivos do RGPH 2010, Published 03/30/2011, http://www.ine.cv/actualise/destaques/files/CD/PDF/CARACTER%3%8DSTICAS%20POP%20RGPH%202010%20[Modo%20de%20Compatibilidade].pdf , Accessed 07/06/2011.
Central African Republic	2000, 2006, 2010	17	Division of Statistics and Economic Studies (Central African Republic), Ministry of Economy, Planning and International Cooperation (Central African Republic), United Nations Children's Fund (UNICEF). Central African Republic Multiple Indicator Cluster Survey 2000. New York, United States: United Nations Children's Fund (UNICEF); United Nations Children's Fund (UNICEF). Central African Republic Multiple Indicator Cluster Survey 2006. New York, United States: United Nations Children's Fund (UNICEF). Central African Institute of Statistics, Economic and Social Studies (ICASEES) (Central African Republic), ICF International. Central African Republic Multiple Indicator Cluster Survey 2010-2011. Fairfax, United States: ICF International, 2013. Datasets downloaded from www.mics.unicef.org/surveys between Feb and Dec. 2017
Chad	2004, 2014	8	ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
China	2010	2872	University of Michigan China Data Center, CD: China 2010 County Population Census Data with GIS Maps
Colombia	2005	33	Departamento Administrativo Nacional de Estadística (DANE), Population Estimates 1985-2004 and National Population Projections, Departmental and municipal population by gender 2005-2020 five year age groups, http://www.dane.gov.co/index.php/eng , Accessed 7/14/2015.
Comoros	2000-2020	1	UNPD
Congo	2007	12	Centre National de la Statistique et des Etudes Economiques (CNSEE), 2007 Census of Population and Housing (RGPH-07), Structure of the Population, http://www.cnsee.org/index.php?option=com_content&view=article&id=137%3AArgphstructure8congo&catid=43%3AAnalyse-rgph&showall=1 , Accessed 2/26/2013.
Congo (Democratic Republic of the)	2007, 2013-2014	11	ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Cook Islands	2000-2020	1	USCB http://www.census.gov/population/international/data/idb/informationGateway.php
Costa Rica	2000-2011	55	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/DO20.V7.0 .
Côte d'Ivoire	2005 2012	11	ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Cuba	2012	16	Oficina Nacional de Estadística e Información (ONE), Censo de Población y Viviendas 2012, Table 2: Población Total por Sexo y Relación de Masculinidad según Provincias y Municipios, http://www.one.cu/resumenadelantadocenso2012.htm , Accessed 12/10/2013.
Djibouti	2000-2020	1	UNPD

Dominica	2011	13	Central Statistical Office, 2011 Population and Housing Census Preliminary Results, Tables: 3 and 4, Published 09/01/2011, http://www.dominica.gov.dm/cms/files/2011_census_report.pdf , Accessed 05/05/2014.
Dominican Republic	2000-2015	227	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Ecuador	2010	1024	Instituto Nacional de Estadística y Censos (INEC) Ecuador, Censo de Población y Vivienda 2010, using REDATAM, http://redatam.inec.gob.ec/ , Accessed 06/11/2012.
Egypt	2006	290	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/D020.V7.0 .
El Salvador	2007	262	Census http://www.digestyc.gob.sv/
Equatorial Guinea	2000	7	Ministry of Planning, Economic Development and Public Investment (Equatorial Guinea), United Nations Children's Fund (UNICEF). Equatorial Guinea Multiple Indicator Cluster Survey 2000. New York, United States: United Nations Children's Fund (UNICEF). Datasets downloaded from www.mics.unicef.org/surveys between Feb and Dec. 2017
Eritrea	2000-2020	1	UNPD
Ethiopia	2000-2020	757	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Falkland Islands (Malvinas)	2012	6	Falkland Islands Government, Census 2012, Table: Age and Gender by Location 2012, Received 11/16/2012.
Fiji	2007	10	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/D020.V7.0 .
French Guiana	2009	22	Institut National de la Statistique et des Etudes Economiques, INSEE Statistiques locales, POP1B : Population par sexe et âge, generated by Jane Mills, using http://www.statistiques-locales.insee.fr/cartographie/ESL_CT_cartethematique.asp?nivgeo=COM&submit=Ok , Accessed 8/8/2013.
Gabon	2012	13	ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Gambia	2006, 2013	8	ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Georgia	2014	12	National Statistics Office of Georgia (GEOSTAT)
Ghana	2000-2015	110	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Grenada	2010	7	Census "UN Urban and Rural Population by Age and Sex (URPAS) 2010 estimates, generated using URPAS, http://esa.un.org/unpd/popdev/urpas/urpas2014.aspx , Accessed 03/27/2015. "
Guadeloupe	2009	32	Institut National de la Statistique et des Etudes Economiques, INSEE Statistiques locales, POP1B : Population par sexe et âge, generated using INSEE, http://www.statistiques-locales.insee.fr/cartographie/ESL_CT_cartethematique.asp?nivgeo=COM&submit=Ok , Accessed 8/8/2013.
Guatemala	2010	22	Instituto Nacional de Estadística (INE) Guatemala, 2010 Population Estimates, Table: Estimaciones de la Población Total por Municipio. Periodo 2008-2020. (al 30 de junio), http://www.oj.gob.gt/estadistica/files/poblacion-total-por-municipio1.pdf , Accessed 07/22/2011.
Guinea	2005, 2012	7	ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Guinea-Bissau	2009	9	Instituto Nacional de Estatística Guinea-Bissau, Censo 2009, População por região, sector e localidades por sexo, http://www.stat-guineebissau.com/publicacao/publicacao.htm , Accessed 12/11/2014.
Guyana	2000-2015	10	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Haiti	2000-2015	703	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Honduras	2013	18	Instituto Nacional de Estadística (INE), Censo de Población y Vivienda 2013, using READTAM, http://www.redatam.org/binhd/RpWebEngine.exe/Portal , Accessed 1/22/2016.
India	2000-2020	710	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Indonesia	2000-2015	33	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017

Iran (Islamic Republic of)	2011	380	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/D020.V7.0 .
Iraq	2000, 2006, 2011	18	Central Statistical Organization (Iraq), United Nations Children's Fund (UNICEF). Iraq Multiple Indicator Cluster Survey 2000. New York, United States: United Nations Children's Fund (UNICEF). United Nations Children's Fund (UNICEF), Central Organization for Statistics and Information Technology (Iraq), Kurdistan Regional Statistics Office. Iraq Multiple Indicator Cluster Survey 2006. New York, United States: United Nations Children's Fund (UNICEF). Central Organization for Statistics and Information Technology (Iraq), Kurdistan Regional Statistics Office, Ministry of Health (Iraq), United Nations Children's Fund (UNICEF). Iraq Multiple Indicator Cluster Survey 2011. New York, United States: United Nations Children's Fund (UNICEF), 2013. Datasets downloaded from www.mics.unicef.org/surveys between Feb and Dec. 2017
Jamaica	2011	14	Statistical Institute of Jamaica, Population and Housing Census 2011, Urban Population By Five Year Age Groups, By Sex, By Parish, Rural Population By Five Year Age Groups, By Sex, By Parish, Total Population By Five Year Age Groups, By Sex, By Parish, http://statinja.gov.jm/Census/PopCensus/Popcensus2011Index.aspx , Accessed 9/29/2015.
Jordan	2004	12	Jordan Department of Statistics, Population and Housing Census 2004, Table 3.1: Distribution of Population by Category, Sex, Nationality, Administrative Statistical Divisions and Urban - Rural, http://www.dos.gov.jo/dos_home_e/main/population/census2004/group3/table_31.pdf , Accessed 07/11/2011.
Kazakhstan	2009	14	Ministry of National Economy of the Republic of Kazakhstan Committee on Statistics, Published 01/01/2011, Results of national population census of Republic of Kazakhstan 2009 Volume I, Page 53-54, Population by gender, http://stat.gov.kz/faces/wcnav_externalId/p_perepis?_afLoop=21388957611815954#%40%3F_afLoop%3D21388957611815954%26_adf.ctrl.state%3Df1s1nk9mu_143 , Accessed 6/11/2015.
Kenya	2000-2020	205	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Kiribati	2000-2020	1	UNPD
Korea (Democratic People's Republic of)	2008	10	UN Statistics Division, Published 1/1/2009, Democratic People's Republic of Korea (DPRK) 2008 Population Census National Report, Table 4. Population by 5-year Age Group and by Sex, by Province and by Urban-Rural, http://unstats.un.org/unsd/demographic/sources/census/2010_PHC/North_Korea/Final%20national%20census%20report.pdf , Accessed 7/11/2011
Kosovo	2011	37	Kosovo Agency of Statistics, Population and housing census of Kosovo 2011, Urban Rural population age and sex at the municipality level, Received 11/24/2015.
Kyrgyzstan	2009	57	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/D020.V7.0 .
Lao People's Democratic Republic	2005	142	Lao Decide Info, Data Dissemination Division, Lao National Population and Housing Census 2005, Village age 2005, Received 5/8/2013.
Lebanon	2000-2020	1	UNPD
Lesotho	2000-2015	10	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Liberia	2008	15	Liberia Institute of Statistics and Geo-Information Services (LISGIS), 2008 Population and Housing Census Final Results, Table 6: Population by County, District and sex 2008, http://s3.amazonaws.com/zanran_storage/www.lisgis.org/ContentPages/46736144.pdf , Accessed 07/12/2011.
Libya	2000-2020	1	UNPD
Madagascar	2011, 2013, 2016	22	ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Malawi	2000-2020	32	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Malaysia	2000	13	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/D020.V7.0 .
Maldives	2000-2020	1	UNPD
Mali	2009	9	National Institute of Statistics (INSTAT) - Mali, 4ème Recensement General de la Population et de L'Habitat du Mali (RGPH 2009), Resultats Definitifs, Tome 0: Repertoire des Villages, Published 03/01/2013, http://www.instat-mali.org/contenu/rgph/repvii09_rgph.pdf , Accessed 02/25/2015.
Malta	2000-2016	1	EUROSTAT: https://ec.europa.eu/eurostat/data/database
Marshall Islands	2000-2020	1	USCB http://www.census.gov/population/international/data/idb/informationGateway.php
Martinique	2009	34	Institut National de la Statistique et des Etudes Economiques, INSEE Statistiques locales, POP1B : Population par sexe et âge, generated using INSEE, http://www.statistiques-locales.insee.fr/cartographie/ESL_CT_cartethematique.asp?nivgeo=COM&submit=Ok , Accessed 8/8/2013.
Mauritania	2007, 2011	12	National Office of Statistics (Mauritania), United Nations Children's Fund (UNICEF). Mauritania Multiple Indicator Cluster Survey 2007. New York, United States: United Nations Children's Fund (UNICEF). National Office of Statistics (Mauritania), United Nations Children's Fund (UNICEF). Mauritania Multiple Indicator Cluster Survey 2011. New York, United States: United Nations Children's Fund (UNICEF), 2015.

			Datasets downloaded from www.mics.unicef.org/surveys between Feb and Dec. 2017
Mauritius	2011	11	Statistics Mauritius, 2011 Housing and Population Census, Table D2 - Resident population by geographical location, age and sex, http://statsmauritius.gov.mu/English/Pages/The-2011-Housing-and-Population-Census.aspx , Accessed 02/28/2013.
Mayotte	2012	17	Institut National de la Statistique et des Etudes Economiques (INSEE), Recensement de la population de Mayotte 2012, Table IND2 - Population par commune de résidence et sexe, http://www.insee.fr/fr/themes/detail.asp?reg_id=27&ref_id=1169 , Accessed 04/07/2015.
Mexico	2000-2005-2010-2015	2331	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/D020.V7.0 .
Micronesia (Federated States of)	2000-2020	1	UNPD
Moldova (Republic of)	2004	42	National Bureau of Statistics of the Republic of Moldova, Population Census 2004, Table 2: Population by area, localities and sex, in territorial aspect, http://www.statistica.md/pageview.php?l=en&idc=295&id=2234 , Accessed 12/12/2012.
Mongolia	2000	21	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/D020.V7.0 .
Montenegro	2000-2016	1	EUROSTAT: https://ec.europa.eu/eurostat/data/database
Montserrat	2000-2020	1	USCB http://www.census.gov/population/international/data/idb/informationGateway.php
Morocco	2014	1658	Haut Commissariat au Plan, Recensement Général de la Population et de l'Habitat 2014, Démographie, http://rgphentableaux.hcp.ma/Default1/ , Accessed 8/2/2016.
Mozambique	2000-2020	148	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Myanmar	2014	15	Department of Population, Ministry of Immigration and Population- Myanmar, The 2014 Myanmar Population and Housing Census, Table A-5: Population by urban/rural, sex and 5-year age groups, http://www.dop.gov.mm/moip/index.php?route=census/state&path=21 , Accessed 10/2/2015.
Namibia	2000-2015	115	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Nauru	2000-2020	1	USCB http://www.census.gov/population/international/data/idb/informationGateway.php
Nepal	2011	75	Central Bureau of Statistics Nepal, National Population and Housing Census 2011, Table 2: Household and population by village development committee/municipality, http://cbs.gov.np/wp-content/uploads/2012/11/VDC_Municipality.pdf , Accessed 01/11/2013.
Nicaragua	2005	18	Instituto Nacional de Informacion de Desarrollo (INIDE), VIII Censo de Población y IV de Vivienda 2005, generated using REDATAM, http://www.inide.gob.ni/cgibin/RpWebEngine.exe/PortalAction?&MODE=MAIN&BASE=NICARAGUACPV05&MAIN=WebServerMain.inl , Accessed 06/19/2012.
Niger	2000-2020	64	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Nigeria	2000-2020	810	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Niue	2011	1	Statistics Niue, Niue Census of Population and Households 2011, Table 2.5: Distribution of Total Residential Population in households (including absentees) by sex and location, Published 01/01/2012, http://www.spc.int/prism/niue/index.php/population/cat_view/12-surveys/13-census/14-census-2011 , Accessed 06/03/2014.
Norfolk Island	2011	1	Census and Statistics - Norfolk Island, Norfolk Island Report on the 2011 Census on Population and Housing, Tables: B1.02. Age group by sex, B1.01. Total Population and Number of Households, by Census Year; also Rate of Annual Population Increase, Population Density and Average Household Size, Published 01/01/2012, http://unstats.un.org/unsd/demographic/sources/census/2010_PHC/Norfolk_Island/report.pdf , Accessed 01/20/2012.
Oman	2010	9	National Center for Statistics and Information (NCSI), Census 2010 Final Result, Published 11/08/2012, http://www.mone.gov.om/documents/Census_2010.pdf , Accessed 11/08/2012.
Pakistan	2010	396	United States Census Bureau, Dembase - Gridded Mapping, Table: 3rd administrative level (Tehsils) with 1998 census data and 2010 estimates, http://www.census.gov/population/international/data/mapping/dembase.html , Accessed 03/07/2013.
Palau	2000-2020	1	USCB http://www.census.gov/population/international/data/idb/informationGateway.php
Papua New Guinea	2000-2020	1	UNPD
Paraguay	2002	10	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/D020.V7.0 .
Peru	2007	194	Peru National Institute of Statistics and Information, Censo de Población y Vivienda 2007, table generated using REDATAM, http://inei.inei.gob.pe/ineiRedatamCpv2007.aspx?ResultadosCensalesori=C , Accessed 06/07/2012.
Philippines	2000	1201	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/D020.V7.0 .

Pitcairn	2008	1	The Government of the Pitcairn Islands, Public Union College, 2008 Census, Table: Pitcairn's Population, Published 08/08/2008, http://library.puc.edu/pitcairn/pitcairn/census.shtml , Accessed 04/08/2015.
Réunion	2009	24	Institut National de la Statistique et des Etudes Economiques, INSEE Statistiques locales, POP1B : Population par sexe et âge, generated using INSEE, http://www.statistiques-locales.insee.fr/carto/ESL_CT_cartethematique.asp?nivgeo=COM&submit=Ok , Accessed 8/8/2013.
Romania	2000-2016	8	EUROSTAT: https://ec.europa.eu/eurostat/data/database
Russian Federation	2000-2015	94	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Rwanda	2000-2015	475	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Saint Barthélemy	2000-2020	1	USCB http://www.census.gov/population/international/data/idb/informationGateway.php
Saint Helena, Ascension and Tristan da Cunha	2008-2014	9	Statistics Office of St Helena, 2008 Population Census of St Helena, 2014 Population Register of Tristan da Cunha, Received 03/03/2015.
Saint Lucia	2000-2020	1	UNPD
Saint Pierre and Miquelon	2000-2020	1	USCB http://www.census.gov/population/international/data/idb/informationGateway.php
Saint Vincent and the Grenadines	2012	2	The Census Office, Central Planning Division, Ministry of Finance and Economic Planning, St Vincent and the Grenadines, 2012 Population and Housing Census, Household Population by Age Group, Census Division and Sex, Received 2/10/2016.
Samoa	2000-2020	1	UNPD
Sao Tome and Principe	2012	7	Instituto Nacional de Estatística, Census of Population and Housing 2012, Published 05/13/2013, http://www.inec.st/nacionais_RGPH_2012.html , Accessed 02/19/2014.
Senegal	2002	34	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/D020.V7.0 .
Serbia	2011	161	Statistical Office of the Republic of Serbia, 2011 Census of Population, Households and Dwellings in the Republic of Serbia; Age and Sex, Table 2, Received 10/04/2013.
Sierra Leone	2004	14	Sierra Leone Statistics, 2004 Population and Housing Census, TABLE 1: Distribution of Chiefdoms, Wards, Sections, Enumeration Areas and Localities by Local Council, Published 12/04/2004, http://www.sierra-leone.org/Census/ssl_final_results.pdf , Accessed 11/11/2013.
Solomon Islands	2009	10	Solomon Islands National Statistics Office, 2009 Census of Population and Housing, Theme P3: Five-year age groups, generated using PopGIS2 platform from Secretariat of the Pacific Community, www.spc.int/prism/data/popgis2 , Accessed 01/26/2015.
Somalia	2006	3	Pan Arab Project for Family Health (PAPFAM), United Nations Children's Fund (UNICEF). Somalia Multiple Indicator Cluster Survey 2006. New York, United States: United Nations Children's Fund (UNICEF). Datasets downloaded from www.mics.unicef.org/surveys between Feb and Dec. 2017
South Africa	2000-2020	234	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
South Georgia and the South Sandwich Islands	-	-	No population
South Sudan	2008	68	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/D020.V7.0 .
Spratly Islands		-	No population
Sri Lanka	2012	331	Department of Census and Statistics, Sri Lanka Census of Population and Housing 2012, Population by GN and Sex, http://www.statistics.gov.lk/PopHouSat/CPH2011/index.php?fileName=Activities/TentativelistofPublications , Accessed 10/2/2015.
Sudan	2008	129	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/D020.V7.0 .
Suriname	2012	62	DevInfoWorldWide Suriname Census Info, Census 2012, http://www.devinfo.org/surinamecensus/libraries/asp/aspHome.aspx , Accessed 10/31/2014.
Swaziland	2007	4	Central Statistical Office, Princeton University Library, Published 08/01/2010, 2007 Population and Housing Census Priority Tables Report Volume 1, Table 3.1. Resident population, by sex according to Tinkhundla, Accessed 10/15/2015.
Syrian Arab Republic	2000-2020	1	UNPD
Taiwan, Province of China[a]	2010	22	Statistics Taiwan, Department of the Census, 2010 Population and Housing Census, Table 3: Age structure of the resident population, Received 05/02/2013.

Tajikistan	2010	5	State Statistical Committee - Tajikistan, 2010 Census, GeoHive, http://www.geohive.com/ .
Tanzania, United Republic of	2000-2020	175	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Thailand	2000-2015	926	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
The former Yugoslav Republic of Macedonia	2000-2016	1	EUROSTAT: https://ec.europa.eu/eurostat/data/database
Timor-Leste	2009	13	ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Togo	2010	6	Bureau Central du Recensement, Publication des Résultats Définitifs: Volume Spécial, Tableau : Répartition de la population résidente selon le groupe d'âges et le sexe, http://www.stat-togo.org/contenu/pdf/pb/pb-vol-special-rgph4-tg-2010.pdf , Accessed 10/17/2015.
Tokelau	2006 2011 2016	3	Tokelau Statistical Office, Government of Tokelau www.tokelau.org.nz
Tonga	2000-2020	1	UNPD
Tunisia	2014	24	Institut National de la Statistique, Recensement Général de la Population et de l'Habitat 2014, Table: Population by sex, milieu and governorates, http://www.ins.nat.tn/indexen.php , Accessed 01/05/2015.
Turkey	2000-2016	26	EUROSTAT: https://ec.europa.eu/eurostat/data/database
Turkmenistan	2006, 2015	6	Ministry of Foreign Affairs (Turkmenistan), Ministry of Health and Medical Industry (Turkmenistan), United Nations Children's Fund (UNICEF). Turkmenistan Multiple Indicator Cluster Survey 2006. New York, United States: United Nations Children's Fund (UNICEF), 2016. State Committee on Statistics of Turkmenistan, United Nations Children's Fund (UNICEF). Turkmenistan Multiple Indicator Cluster Survey 2015-2016. New York, United States: United Nations Children's Fund (UNICEF), 2017. Datasets downloaded from www.mics.unicef.org/surveys between Feb and Dec. 2017
Tuvalu	2000-2020	1	USCB http://www.census.gov/population/international/data/idb/informationGateway.php
Uganda	2002	161	Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2018. https://doi.org/10.18128/DO20.V7.0 .
Ukraine	2013	27	State Statistics Service of Ukraine, 2013 Official Estimates, Table: Permanent population (persons) by Year, Region, Age groups, Settlement type and Gender, generated using Databank of State Statistics Service of Ukraine, http://database.ukrcensus.gov.ua/MULT/Dialog/statfile_c.asp , Accessed 04/28/2015.
United States Virgin Islands	2010	6	United States Census Bureau, 2010 Census for the U.S. Virgin Islands, Table: cb11cn180_vi, http://2010.census.gov/news/press-kits/island-areas/island-areas.html , Accessed 05/24/2012.
Uzbekistan	2006	6	United Nations Children's Fund (UNICEF), State Committee of the Republic of Uzbekistan on Statistics. Uzbekistan Multiple Indicator Cluster Survey 2006. New York, United States: United Nations Children's Fund (UNICEF). Datasets downloaded from www.mics.unicef.org/surveys between Feb and Dec. 2017
Vanuatu	2009	6	Vanuatu National Statistics Office, 2009 National Population and Housing Census, Table P3: Functional age groups, generated using PopGIS2 platform from the Secretariat of the Pacific Community, www.spc.int/prism/data/popgis2 , Accessed 01/05/2015.
Venezuela (Bolivarian Republic of)	2011	337	Instituto Nacional de Estadística (INE) Venezuela, XIV Censo Nacional de Población y Vivienda 2011, generated using REDATAM, http://www.redatam.ine.gob.ve/Censo2011/index.html , Accessed 9/24/2013.
Viet Nam	2000-2020	63	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Wallis and Futuna	2000-2020	1	USCB http://www.census.gov/population/international/data/idb/informationGateway.php
Western Sahara	2014	8	Haut Commissariat au Plan, Recensement Général de la Population et de l'Habitat 2014, Démographie, http://rgphentableaux.hcp.ma/Default1/ , Accessed 8/2/2016.
Yemen	2004	21	Central Statistical Organisation of Yemen, Published 3/13/2007, Demographic characteristics of the population & economic characteristics of the population of all the provinces and districts of the Republic, Table 29, http://www.cso-yemen.org/content.php?lng=arabic&id=588 , Accessed 10/9/2015.
Zambia	2000-2015	150	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017
Zimbabwe	2000-2015	59	USCB http://www.census.gov/population/international/data/idb/informationGateway.php and ICF. 2000-2017. Demographic and Health Surveys (various) [Datasets]. Funded by USAID. Rockville, Maryland: ICF [Distributor]. ICF. The DHS Program Spatial Data Repository. Funded by USAID. spatialdata.dhsprogram.com . [Accessed Feb-Dec, 2017]. Datasets downloaded from www.dhsprogram.com between Feb and Dec. 2017