



Organisation for Economic Co-operation and Development

## POPULATION DATA SOURCES FOR SDG INDICATOR CALCULATIONS

This paper presents an overview of the population data sources currently used of SDG indicators calculations. It also highlights the differences between the different data sources, and investigates the potential implications for SDG indicators calculations.

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## **1. Population data sources currently used for SDG indicator calculations**

1. For all indicators based on population data, the UIS uses official estimates from the United Nations Population Division (UNPD), which may differ from the national population estimates collected through the DEM/Eurostat population data. At several sessions of the INES Working Party [EDU/EDPC/INES/WP(2018)19], the majority of countries expressed their preference to use DEM/Eurostat estimates instead of UNPD population estimates, as these better reflect their national estimates.
2. In 2018, the UIS accepted to use DEM/Eurostat population data for countries for which (i) the discrepancy between UNPD and DEM/Eurostat data was particularly large, and (ii) DEM/Eurostat data was available for the years 2000 onwards. As of now these, countries include Brazil, France, Ireland, Latvia, Lithuania and the United States.
3. Following recurring demands from countries to use national population estimates (rather than UNPD data), the Committee for the Coordination of Statistical Activities formed a Task Force in 2019, to determine the most appropriate population data source for SDG indicator calculation. The results of their work are expected to be available for the 2021 SDG data release.

## **2. Comparison of population data sources**

1. In 2019, the OECD conducted a comparison of the population data from DEM/Eurostat, UNPD and UNSD. This section summarises the outcomes of this analysis.

### **Sources of differences across data sources**

2. Part of the differences between the three data sources relate to reference dates and estimation methods. Regarding reference dates, DEM/Eurostat data refer to December 31<sup>st</sup>, while UNSD and UNPD data correspond to June 30<sup>th</sup>. In terms of methods, DEM/Eurostat and UNSD data correspond to population estimates that countries report yearly. In contrast, UNPD currently produces population estimates based on five-year age groups. Values between the 5-year intervals are then interpolated, which can make it difficult to accurately reproduce data for intermediary years, especially when the trends fluctuate.

### **Extent of the differences across data sources**

#### ***Differences in the overall population***

3. As shown in Table 1, while population data from DEM/Eurostat and UNSD tend to be similar for most countries, the differences between DEM/Eurostat and UNPD data can be significant. The difference between DEM/Eurostat and UNPD data is particularly striking in countries such as France, Israel and Mexico (with a difference of at least 2%), and in Greece, Norway, Turkey and the United Kingdom (with a difference of 1-2%). In other countries, the difference is smaller. A quarter of countries with available data exhibit a difference of 0.50-1.00%, another quarter a difference of 0.25%-0.50%, and the remaining countries exhibit a difference of 0-0.25%.

**Table 1. Comparison of population data from DEM/Eurostat, UNPD and UNSD (2017)**

2017	DEM / Eurostat	UNPD	UNSD
Australia	24,598,933	24,584,619	24,597,528
Austria	8,772,865	8,819,902	8,785,216
Belgium	11,351,727	11,419,752	11,363,443
Brazil	206,882,729	207,833,825	-
Canada	36,447,341	36,732,091	36,540,268
Chile	18,419,192	18,470,435	18,373,917
Colombia	49,291,609	48,909,844	-
Costa Rica	4,947,490	4,949,955	4,946,700
Denmark	5,748,769	5,732,277	5,760,694
Estonia	1,315,635	1,319,389	1,316,510
Finland	5,503,297	5,511,372	5,491,080
France	66,804,121	64,842,513	64,855,346
Germany	82,521,653	82,658,409	82,589,328
Greece	10,768,193	10,589,449	10,768,193
Hungary	9,797,561	9,729,822	9,792,764
Israel	8,628,589	8,243,849	8,713,268
Italy	60,589,445	60,673,694	60,563,077
Japan	126,932,772	127,502,728	126,746,000
Korea	51,446,201	51,096,408	51,361,911
Latvia	1,950,116	1,951,097	1,950,116
Lithuania	2,847,904	2,845,419	2,838,154
Luxembourg	590,667	591,914	590,667
Mexico	122,273,473	124,777,326	123,518,268
Netherlands	17,081,507	17,021,343	17,081,507
New Zealand	5,258,317	5,296,324	5,267,643
Norway	4,793,920	4,702,029	4,793,900
Poland	37,972,964	37,953,176	37,967,641
Portugal	10,309,573	10,288,527	10,304,937
Slovak Republic	5,435,343	5,447,903	5,437,287
Slovenia	2,065,895	2,076,395	2,066,028
Spain	46,528,024	46,647,425	46,549,045
Sweden	9,995,153	9,904,895	10,026,425
Switzerland	8,419,550	8,455,797	8,467,985
Turkey	79,814,871	81,118,451	-
United Kingdom	65,844,142	66,727,463	65,924,824
United States	324,076,293	325,084,758	-

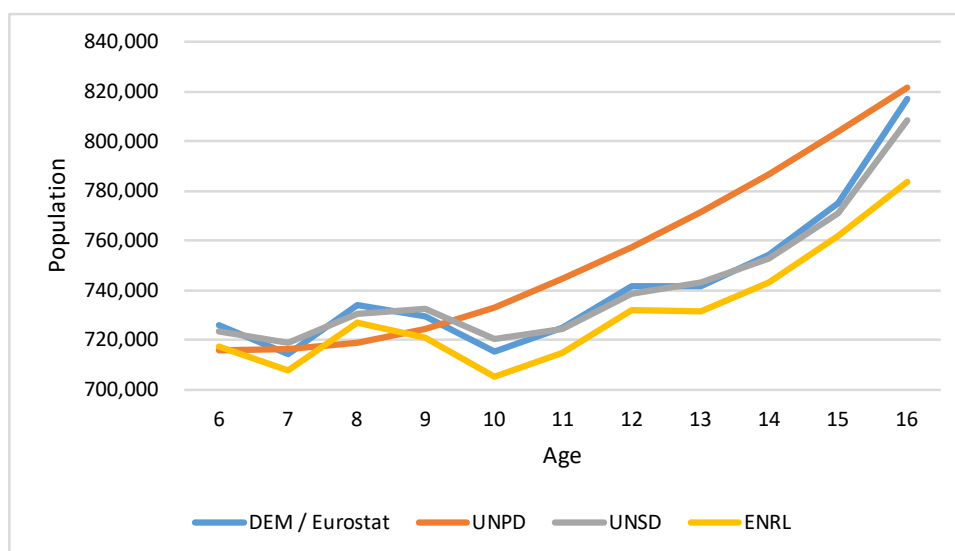
Note: The colour-coding of cells represents the difference between DEM/Eurostat and UNPD or UNSD data.

Yellow cells correspond to differences of 0.25-0.50% compared to DEM/Eurostat, orange cells to differences of 0.50%-1.00%, red cells to differences of 1.00%-2.00% and purple cells to differences of 2.00-100%. Green cells indicate values that are identical to those in DEM/Eurostat data.

Source: DEM/Eurostat, UNPD and UNSD population databases.

### **Differences by age groups**

4. In some countries, the discrepancies between DEM/Eurostat and UNPD data can be significant for individual ages, although the data may be similar for the overall population (total for all ages). As shown in Figure 1, in Germany, DEM/Eurostat and UNSD data are similar for all ages, and follow the same patterns as enrolment data. In contrast, UNPD data differs significantly from other sources for some ages (in particular ages 11 to 14). These differences may reflect the fact that UNPD data is based on estimations using five-year age groups.



Source: DEM/Eurostat, UNPD and UNSD population databases, UNESCO-UIS/OECD/EUROSTAT data collection on enrolment.

6. Table 2 provides further information on the discrepancies between DEM/Eurostat and UNPD data in Germany. As shown in the table, there is a difference of over 2.00% for the population of ages 8 and 10-15, and a difference of 1.00-2.00% for ages 5 and 6. In contrast, for other ages, DEM/Eurostat and UNPD data are similar.

**Table 2. Comparison of population data from DEM/Eurostat and UNPD, by age: Example of Germany (2017)**

Germany	Age	DEM / Eurostat	UNPD
	5	709,649	718,251
	6	725,990	715,946
	7	714,614	716,201
	8	733,904	718,717
	9	729,770	724,282
	10	715,498	733,142
	11	725,080	744,636
	12	741,434	757,423
	13	741,827	771,251
	14	754,356	786,676
	15	774,861	803,669
	16	817,175	821,527

Note: The colour-coding of cells represents the difference between DEM/Eurostat and UNPD data.

Orange cells to differences of 0.50%-1.00%, red cells to differences of 1.00%-2.00% and purple cells to differences of 2.00-100%.

Source: DEM/Eurostat and UNPD population databases.

7. Differences in population data between DEM/Eurostat and UNPD data can have a significant impact on SDG indicators, depending on the age groups used for the calculations. Table 3 takes the example of Germany, and highlights differences in population data for the age groups corresponding to SDG Indicators 4.1.3 (Gross intake ratio to the last grade of primary education) and 4.1.5 (Out-of-school

rate in primary education). As shown in the table, the population used to calculate Indicator 4.1.5 (children aged 6-9) is similar between DEM/Eurostat and UNPD (difference by less than 0.25%). In contrast, the population used for the calculation of Indicator 4.1.3 (children aged 9) differs more significantly across the two sources (by 0.50-1.00%).

8. Because of discrepancies across the two data sources, in some cases, countries for which UNPD data is used have required to set SDG indicators to missing, as the data did not seem to accurately reflect their national estimates.

**Table 3. Implications of differences in population data on SDG indicators calculation: Example of Germany (2017)**

Germany		DEM / Eurostat	UNPD
Impact on SDG calculations:			
4.1.5	6-9	2,904,278	2,875,146
4.1.3	9	729,770	724,282
4.1.5	<i>Rate of out of school children in primary education</i>		
4.1.3	<i>Gross intake ratio to the last grade of primary education</i>		

Note: The colour-coding of cells represents the difference between DEM/Eurostat and UNPD data. Orange cells to differences of 0.50%-1.00%.

Source: DEM/Eurostat and UNPD population databases.

### 3. Next steps

9. The UN Task force will continue working on identifying the most appropriate population data source for SDG indicators calculation. In the meantime, the UIS and OECD will continue using DEM/Eurostat data for Brazil, France, Ireland, Latvia, Lithuania and the United States.