

Balkans COVID-19 Mapping and Response Analysis

METHODOLOGY AND DATA SOURCES

Introduction to the project

The project monitors the spread of the COVID-19 pandemic in the countries of Southeast Europe, namely Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Kosovo, Montenegro, North Macedonia, Romania, Serbia, Slovenia and Turkey.

The information are at present contained on the interactive map and the info posters. The **interactive map** tracks information about the COVID-19 at two levels. At the *country level*, two info buttons contain the following information for each of the states monitored: *info button 1* comprises country-level aggregate data about the total population, the total number of persons tested, persons infected, deaths, recovered patients, hospitalised patients, patients in intensive care and those intubated; *info button 2* includes also detailed evolution of the key statistics of the pandemic in the country of reference as well as information about the overall capacity of the health system in each of the countries monitored based on the global health rankings and more recently acquired resources; *info button 3* lists measures adopted by the respective government since the start of the crisis; and, more specifically, outlines general measures, social distancing, mobility and travel measures, economic measures and health system measures. At the *sub-national regional units level*, the interactive map offers information about the two key indicators, i.e. the cumulative confirmed cases and the deaths, for the respective sub-national unit. Each unit is colour-coded based on our calculations for the local spread of the epidemic (see more below).

The **info posters** offer aggregate data that consider the entire region as a whole and the various countries in comparative perspective. As our monitoring and scrutiny progresses our team will be introducing additional layers of qualitative and quantitative comparative analysis.

Working definitions

Total population: Total number of inhabitants per country or administrative unit using as reference source official census statistics (see more below)

Cumulative confirmed cases: The number of all the cases of patients classified by official government sources as COVID-19 infected since the start of the crisis.

Cumulative confirmed cases of COVID-19/population ratio: The value deriving from the ratio of number of cumulative confirmed cases divided by the total population of the reference unit.

Deaths: Total number of persons classified by official government sources of reference country as having deceased as a result of COVID-19 infection on the day of the latest update.

Persons tested: Total number of persons tested for COVID-19 infection on the day of the latest update according to official data provided by government sources.

Infected persons: Total number of persons tested positive for COVID-19 on the day of the latest update according to official data provided by government sources.

Recovered: Total number of COVID-19 patients fully recovered on the day of the latest update according to official data provided by government sources.

Hospitalised: Total number of COVID-19 patients in hospitals on the day of the latest update according to official data provided by government sources.

In intensive care: Total number of COVID-19 patients in intensive care units (ICU) on the day of the latest update according to official data provided by government sources.

Intubated: Total number of COVID-19 patients intubated on the day of the latest update according to official data provided by government sources.

[Administrative division of countries monitored](#)

The interactive map is based on the administrative divisions corresponding to the European Union's classification at the NUTS 3 level.¹ This classification is officially used for statistical purposes and corresponds to the following sub-national administrative and/or statistical units: **Greece** (νομοί), **Romania** (județe), **Slovenia** (statistične regije), **Croatia** (zupanije), **Bulgaria** (области/oblasti), **Albania** (qarku), **North Macedonia** (статистички региони/statisticki regioni), **Serbia** (okruzi) and **Turkey** (illeri).

The project team has diverged from the above rule in three country cases. In the NUTS 3 **Montenegro** is classified as a single unit. For the purpose of our monitoring and in order to offer to readers more information, the country has been divided into three regions, as per Montenegro's 2011 Regional

¹ <https://ec.europa.eu/eurostat/web/nuts/background>

Development Law. This division is also being used for statistical purposes in the country.

In the case of Kosovo and Bosnia and Herzegovina (BiH), there has not yet been an official agreement for defining the correspondence of sub-national administrative divisions with the NUTS 3 classification. Hence, in the case of **Kosovo** the rajon/okruzi were selected since they constitute the subsequent level administrative division of the country, above municipal administrations. Finally, in **Bosnia and Herzegovina** the following choices have been made: a) in the Federation of BiH we selected the ten cantons, the official and primary administrative division of that Bosnian entity since 1996; b) in the case of Republika Srpska, which has no official administrative division of a cantonal type, we have selected the administrative division foreseen by the Spatial Plan of Republika Srpska (2015–2025); and c) in the case of Brčko District we consider this autonomous region as a single unit.

Population data

For the population data the main data source has been Eurostat,² with the exception of the following: Serbia and Kosovo, for which we have used data from the 2011 population censuses, the Attica region in Greece for which we have used the 2011 population census, and Republika Srpska, for which we have used the 2013 population census.³

Colour coding on the interactive map

The colour coding on the interactive map classifies the sub-national units according to the ratio 'cumulative confirmed cases of COVID-19/population'. The data have been classified using the GIS software, based on the 'natural breaks scheme'. The natural breaks classification generates class breaks that, for a given number of classes, will minimize within-class variance and maximize between-class differences.

We identify four classification categories that correspond to different colour codes on the interactive map:

- Over 600 confirmed cases per million inhabitants
- Between 250 and 600 confirmed cases per million inhabitants
- Between 100 and 249 confirmed cases per million inhabitants
- Less than 100 confirmed cases per million inhabitants

² <https://ec.europa.eu/eurostat/web/rural-development/data>

³ <http://www.popis.gov.ba/popis2013/mapa/?lang=eng>

We are committed to adapting the tracker to keep pace with the evolution of the epidemic, hence color classifications are reviewed and if needed updated every week to account for the overall rise in cases and deaths in the region.

Update 26 April: Currently, the four-color classifications are:

- Over 1600 confirmed cases per million inhabitants
- Between 700 and 1600 confirmed cases per million inhabitants
- Between 250 and 700 confirmed cases per million inhabitants
- Less than 250 confirmed cases per million inhabitants

Update: 1 June 2020

From June 1st, 2020, the interactive map is updated on a weekly basis. The colour coding on the map classifies the twelve South East European countries according to the ratio “cumulative confirmed deaths of Covid-19/population”. The data have been classified using the GIS software, based on the ‘natural breaks scheme’. The natural breaks classification generates class breaks that, for a given number of classes, will minimize within-class variance and maximize between-class differences.

We identify four classification categories that correspond to different colour codes on the interactive map:

- Over 53 confirmed deaths per million inhabitants
- Between 35-53 confirmed deaths per million inhabitants
- Between 20-34 confirmed deaths per million inhabitants
- Less than 20 confirmed deaths per million inhabitants

The set of orange bullet points includes statistical data (cumulative confirmed cases of COVID-19, cases per day, cumulative confirmed deaths, deaths per day, total persons tested, tests per day, total recoveries, recoveries per day) on a national level from April 1st, 2020 to May 31st, 2020, as well as the governments’ responses to Coronavirus timeline. For the latest statistical data on cases, deaths, and tests click on each country. This information will be updated every week.

Country data sources

The data presented in the interactive map are being collected on a daily basis as reported from national authorities in each country. The following are the primary data sources in each country:

Albania

- The Ministry of Health of the Republic of Albania - <https://shendetesia.gov.al/>

Bosnia and Herzegovina

- The official website on COVID-19 in the Federation of Bosnia and Herzegovina - <https://covid-19.ba/>
- The official website of the Government of Republika Srpska on COVID-19 - <https://koronavirusrpskoj.com/>
- The Daily reports on COVID-19 of the Government of Brčko District - <http://www.vlada.bdcentral.net/Content/Read/dnevni-izvjestaji>

Bulgaria

- The Ministry of Health of the Republic of Bulgaria - <https://www.mh.government.bg/bg/>
- The COVID-19 official governmental website - <https://coronavirus.bg/bg/>

Croatia

- The COVID-19 official governmental website - <https://www.koronavirus.hr/en>
- Croatian Institute for Public Health - <https://www.hzjz.hr/>

Greece

- The Ministry of Health - <https://www.moh.gov.gr/>
- The National Organization of Public Health – <https://eody.gov.gr/>
- The COVID-19 official governmental website - <https://covid19.gov.gr/>

Kosovo

- The COVID-19 official governmental website – <https://kosova.health/>
- The Health National Institute of Kosovo (official page on FB) – https://www.facebook.com/IKSHPK/?epa=SEARCH_BOX

Montenegro

- The COVID-19 official governmental website - <https://www.coronainfocg.me/>
- The Montenegrin Institute for Public Health – <https://www.ijzcg.me/> (Twitter and Instagram Profile)
- The Government of Montenegro – <http://www.gov.me/en/homepage>

North Macedonia

- The COVID-19 official governmental website – <https://koronavirus.gov.mk/vesti#stat>
- The Institute of Public Health of the Republic of North Macedonia- <http://iph.mk/en/>

Romania

- The Ministry of Health – <http://www.ms.ro/>

- The COVID-19 official governmental website – <https://stiriofficiale.ro/informatii>

Serbia

- The COVID-19 official governmental website - <https://covid19.rs/homepage-english/> , <https://covid19.data.gov.rs/>
- The Ministry of Health – <https://www.zdravlje.gov.rs/>

Slovenia

- The National Institute of Public Health - <https://www.nijz.si/sl>
- The COVID-19 official governmental website - <https://www.gov.si/en/topics/coronavirus-disease-covid-19/>

Turkey

- The COVID-19 official governmental websites - <https://covid19.saglik.gov.tr/> , <https://corona.cbddo.gov.tr/>

General health statistics data sources

- WHO Coronavirus Disease situation reports - <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/>
- COVID-19 Health System Response Monitor - <https://www.covid19healthsystem.org/mainpage.aspx>
- COVID-19 Global Cases by the Centre for System Science and Engineering at Johns Hopkins - <https://coronavirus.jhu.edu/map.html>
- Global Health Security Index - <https://www.ghsindex.org/>

Methodology version: Latest update 1 June 2020

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