Environment

Terrain

Elevation
Elevation is the average elevation of the area. This indicator is constructed by averaging information from 1-km resolution global topographic grids.

Units of measurement: Meters

Country: India

Source: Shuttle Radar Topography Mission (SRTM) v.2.1 based on data collected in 2000 and released in late 2005 by the Oak Ridge National Laboratory's Distributed Active Archive Center (ORNL DAAC), http://webmap.ornl.gov/wcsdown/wcsdown.jsp?dg_id=10008_1.

Time period:

- Spatial database 2001: Based on SRTM v.2.1 2005
- Spatial database 2011: Based on SRTM v.2.1 2005

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Level 1, Level 2, Level 3
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Surface roughness

Surface roughness is the standard deviation of the elevation of the area. Elevation is constructed by averaging information from 1-km resolution global topographic grids.

Units of measurement: Meters

Country: India

Source: Shuttle Radar Topography Mission (SRTM) v.2.1 based on data collected in 2000 and released in late 2005 by the Oak Ridge National Laboratory's Distributed Active Archive Center (ORNL DAAC), http://webmap.ornl.gov/wcsdown/wcsdown.jsp?dg_id=10008_1.

Time period:

- Spatial database 2001: Based on SRTM v.2.1 2005
- Spatial database 2011: Based on SRTM v.2.1 2005

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Level 1, Level 2, Level 3
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Land area with limited or no constraints

Land area with limited or no constraints is the land area with limited or no constrains to agriculture activity as a share of the total area. Limited or no constraints means no constraints, very few constraints, or few constraints to agriculture activity. Constraint classifications reflect data from soil quality assessments, which include the following factors: depth, fertility, drainage, texture, and miscellaneous land areas not adequate for agriculture. Soil types with no constraints, very few constraints, or few constraints are 100 cm deep or higher and have high fertility, good drainage, and medium/fine texture.

Units of measurement: Percent

Country: India

Source: Van Velthuizen, Harrij, Barbara Huddleston, Günther Fisher, Mirella Salvatore, Ergin Otaman, Freddy O. Natchergaele, Marina Zanetti, Mario Bloise, Antonello Antonicelli, Judith Bel, Anna de Liddo, Paola de Salvo, and Gianluca Franceschini. 2007. "Mapping Biophysical Factors that Influence Agriculture Production and Rural Vulnerability." Environment and Natural Resources Series No. 11, Food and Agriculture Organization of the United Nations, Rome, Italy.

Time period:

- Spatial database 2001: Not applicable
- Spatial database 2011: Based on Van Velthuizen, et. al., 2007

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2011: Not applicable
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Land area equipped for irrigation

Land area equipped for irrigation is the land area equipped for irrigation of crops as a share of the total area. This includes areas equipped for full-control irrigation, equipped lowland areas, and areas for spate irrigation. It does not include non-equipped cultivated wetlands and inland valley bottoms or non-equipped flood recession cropping areas. The indicator is available for all types of irrigation (both ground water irrigation and surface water irrigation). Groundwater irrigation refers to water for irrigation drawn from aquifers using wells and water for irrigation drawn from springs. Surface water irrigation refers to water for irrigation extracted directly from rivers, lakes, ponds, reservoirs, or wetlands.

- Irrigation breakdowns: Total, groundwater, surface water

Units of measurement: Percent

Country: India

Source: Siebert, Stefan, Verena Henrich, Karen Frenken, and Jacob Burke. 2013. "Global Map of Irrigation Areas (GMIA) v. 5." Rheinische Friedrich-Wilhelms University, Bonn, Germany/Food and Agriculture Organization of the United Nations, Rome, Italy.

Time period:

- Spatial database 2001: Not applicable
- Spatial database 2011: Based on Siebert, et. al., 2013

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Not applicable
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Land area actually irrigated

Land area actually irrigated is the land area actually irrigated at least once in a given year as a share of the total area. This indicator refers only to physical areas, meaning that irrigated land that is cultivated twice a year is counted once.

Units of measurement: Percent

Country: India

Source: Siebert, Stefan, Verena Henrich, Karen Frenken, and Jacob Burke. 2013. "Global Map of Irrigation Areas (GMIA) v. 5." Rheinische Friedrich-Wilhelms University, Bonn, Germany/Food and Agriculture Organization of the United Nations, Rome, Italy.

Time period:

- Spatial database 2001: Not applicable
- Spatial database 2011: Based on Siebert, et. al, 2013

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Not applicable
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011
Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Natural Resources

Cropland area

Cropland area is the land area classified as cropland as a share of the total area. This indicator is constructed by aggregating 500-meter resolution grids of land classified as cropland. The cropland classification derives from the global land cover classification scheme, which includes 17 land cover classes: 11 natural vegetation classes, 3 developed land classes, and 3 non-vegetated land classes.

Units of measurement: Percent

Country: India

Source: MODIS Land Cover Type I product (MODIS). Information and images obtained from National Aeronautics and Space Administration (NASA) Land Processes Distributed Active Archive Center (LP DAAC), USGS/Earth Resources Observation and Science (EROS) Center, Sioux Falls, South Dakota, https://lpdaac.usgs.gov/data_access.

Time period:

- Spatial database 2001: Based on MODIS 2001
- Spatial database 2011: Based on MODIS 2011

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Level 1, Level 2, Level 3
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative Boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Forest area

Forest area is land area classified as forest as a share of the total area. This indicator is constructed by aggregating 500-meter resolution grids of forest land classes, including evergreen needleleaf, evergreen broadleaf, deciduous needleleaf, and deciduous broadleaf. These classes derive from the global land cover classification scheme, which includes 17 land cover classes: 11 natural vegetation classes, 3 developed land classes, and 3 non-vegetated land classes.

Units of measurement: Percent

Country: India

Source: MODIS Land Cover Type I product (MODIS). Information and images obtained from National Aeronautics and Space Administration (NASA) Land Processes Distributed Active Archive Center (LP DAAC), USGS/Earth Resources Observation and Science (EROS) Center, Sioux Falls, South Dakota, https://lpdaac.usgs.gov/data_access.

Time period:

- Spatial database 2001: Based on MODIS 2001
- Spatial database 2011: Based on MODIS 2011

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Level 1, Level 2, Level 3
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Protected land

Protected land is the area of protected land as a share of the total area. Protected land is defined as a geographic area that has been recognized, dedicated, and managed to achieve long-term conservation. This indicator is available for all levels, national level, and international level. National level protected areas are designated or proposed at the national or subnational level. International level protected areas are designated or proposed through international or regional conventions such as ASEAN, Heritage, Barcelona, OSPAR, HELCOM, Natura 2000, RAMSAR, and UNESCO World Heritage.

- Designation breakdowns: All, national, international

Units of measurement: Percent

Country: India

Source: International Union for Conservation of Nature (IUCN) and UNEP–WCMC (United Nations Environment Program–World Conservation Monitoring Centre). 2013. The World Database on Protected Areas (WDPA), February release, Cambridge, UK, www.protectedplanet.net.

Time period:

- Spatial database 2001: Not applicable
- Spatial database 2011: Based on WDPA 2013

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Not applicable
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Number of mineral facilities

Number of mineral facilities is the number of mineral facilities, including mines, plants, smelters, or refineries of aluminum, cement, coal, copper, diamond, gold, iron and steel, nickel, platinum-group metals, salt, silver, and others. This indicator is available for all types of facilities: government-owned facilities, private-owned facilities, and foreign-owned facilities. Government-owned facilities are more than 50 percent owned by the government. Private-owned facilities are more than 50 percent owned by private investors. A facility is considered foreign-owned if it is private and if foreign investors own at least 10 percent of the facility's shares.

- Ownership breakdown: All, government, private, foreign

Units of measurement: Number of facilities

Country: India

Source: Baker, Michael S., Yadira Soto-Viruet, Nurudeen Elias, and Eric Guzmán. 2010. "Mineral Facilities of Asia and the Pacific (MFAP)," U.S. Geological Survey Open-File Report, No. 1254, U.S. Geological Survey, Reston, Virginia, http://pubs.usgs.gov/of/2010/1254/.

Time period:

- Spatial database 2001: Not applicable
- Spatial database 2011: Based on Baker, et. al., 2010

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Not applicable
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011
Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Mineral potential production capacity

Mineral potential production capacity is the potential annual production capacity of mineral facilities. Mineral facilities include mines, plants, smelters, or refineries of aluminum, cement, coal, copper, diamond, gold, iron and steel, nickel, platinum-group metals, salt, silver, and others. This indicator is available for all types of facilities: government-owned facilities, private-owned facilities, and foreign-owned facilities. Government-owned facilities are more than 50 percent owned by government. Private-owned facilities are more than 50 percent owned by private investors. A facility is considered foreign-owned if it is private and if foreign investors own at least 10 percent of the facility's shares.

- Ownership breakdown: All, government, private, foreign

Units of measurement: Million metric tons per year

Country: India

Source: Baker, Michael S., Yadira Soto-Viruet, Nurudeen Elias, and Eric Guzmán. 2010. "Mineral Facilities of Asia and the Pacific (MFAP)," U.S. Geological Survey Open-File Report, No. 1254, U.S. Geological Survey, Reston, Virginia, http://pubs.usgs.gov/of/2010/1254/.

Time period:

- Spatial database 2001: Not applicable
- Spatial database 2011: Based on Baker, et. al., 2010

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Not applicable
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011
Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Climate

Monthly temperature

The *monthly temperature* indicator is an average of daily temperatures within a month, with daily temperature defined as the midpoint between the minimum and maximum temperatures.

- Monthly breakdowns: January to December

Units of measurement: Degrees Celsius (C^o)

Country: India

Source: Climatic Research Unit Database Version 3.22 (CRU). University of East Anglia Climatic Research Unit; Climatic Research Unit. Jones, P. D., and I. Harris. 2008. "Climatic Research Unit (CRU) Time-Series Datasets of Variations in Climate with Variations in Other Phenomena." NCAS British Atmospheric Data Centre, 2015, http://catalogue.ceda.ac.uk/uuid/3f8944800cc48e1cbc29a5ee12d8542d.

Time period:

- Spatial database 2001: Based on CRU v.3.22 2001
- Spatial database 2011: Based on CRU v.3.22 2011

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Level 1, Level 2, Level 3
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011
Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Decadal average of monthly temperature

Decadal average of monthly temperature is the average of monthly temperatures in the previous decade. For the year 2001, the value is an average of the years 1991–2001; for the year 2011, the value is an average of the years 2001–2011. Monthly temperature is an average of daily temperatures within a month, with daily temperature defined as the midpoint between the minimum and maximum temperatures.

- Monthly breakdowns: January to December

Units of measurement: Degrees Celsius (C^o)

Country: India

Source: Climatic Research Unit Database Version 3.22 (CRU). University of East Anglia Climatic Research Unit; Climatic Research Unit. Jones, P. D., and I. Harris. 2008. "Climatic Research Unit (CRU) Time-Series Datasets of Variations in Climate with Variations in Other Phenomena." NCAS British Atmospheric Data Centre, 2015, http://catalogue.ceda.ac.uk/uuid/3f8944800cc48e1cbc29a5ee12d8542d.

Time period:

- Spatial database 2001: Based on CRU v.3.22 1991–2001
- Spatial database 2011: Based on CRU v.3.22 2001–11

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Level 1, Level 2, Level 3
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Decadal variation of monthly temperature

Decadal variation of monthly temperature is the standard deviation of monthly temperatures in the previous decade. For the year 2001, the value is an average of the years 1991–2001; for the year 2011, the value is an average of the years 2001–2011. Monthly temperature is an average of daily temperatures within a month, with daily temperature defined as the midpoint between the minimum and maximum temperatures.

- Monthly breakdowns: January to December

Units of measurement: Degrees Celsius (C^o)

Country: India

Source: Climatic Research Unit Database Version 3.22 (CRU). University of East Anglia Climatic Research Unit; Climatic Research Unit. Jones, P. D., and I. Harris. 2008. "Climatic Research Unit (CRU) Time-Series Datasets of Variations in Climate with Variations in Other Phenomena." NCAS British Atmospheric Data Centre, 2015, http://catalogue.ceda.ac.uk/uuid/3f8944800cc48e1cbc29a5ee12d8542d.

Time period:

- Spatial database 2001: Based on CRU v.3.22 1991–2001
- Spatial database 2011: Based on CRU v.3.22 2001–11

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Level 1, Level 2, Level 3
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Temperature anomaly

Temperature anomaly is the deviation of the decadal average of monthly temperature from the historical monthly average temperature. The decadal average of monthly temperature refers to the average of monthly temperatures in the previous decade. The historical monthly average temperature refers to the average monthly temperature from 1960 to 1991. Monthly temperature is an average of daily temperatures within a month, with daily temperature defined as the midpoint between the minimum and maximum temperatures.

- Monthly breakdowns: January to December

Units of measurement: Degrees Celsius (C^o)

Country: India

Source: Climatic Research Unit Database Version 3.22 (CRU). University of East Anglia Climatic Research Unit; Climatic Research Unit. Jones, P. D., and I. Harris. 2008. "Climatic Research Unit (CRU) Time-Series Datasets of Variations in Climate with Variations in Other Phenomena." NCAS British Atmospheric Data Centre, 2015, http://catalogue.ceda.ac.uk/uuid/3f8944800cc48e1cbc29a5ee12d8542d.

Time period:

- Spatial database 2001: Based on CRU v.3.22 1991–2001
- Spatial database 2011: Based on CRU v.3.22 2001–11

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Level 1, Level 2, Level 3
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Precipitation

Precipitation is the amount of monthly precipitation.

- Monthly breakdowns: January to December

Units of measurement: Millimeters

Country: India

Source: Climatic Research Unit Database Version 3.22 (CRU). University of East Anglia Climatic Research Unit; Climatic Research Unit. Jones, P. D., and I. Harris. 2008. "Climatic Research Unit (CRU) Time-Series Datasets of Variations in Climate with Variations in Other Phenomena." NCAS British Atmospheric Data Centre, 2015, http://catalogue.ceda.ac.uk/uuid/3f8944800cc48e1cbc29a5ee12d8542d.

Time period:

- Spatial database 2001: Based on CRU v.3.22 2001
- Spatial database 2011: Based on CRU v.3.22 2011

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Level 1, Level 2, Level 3
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Decadal average of monthly precipitation

Decadal average of monthly precipitation is the average of monthly precipitation in the previous decade.

- Monthly breakdowns: January to December

Units of measurement: Millimeters

Country: India

Source: Climatic Research Unit Database Version 3.22 (CRU). University of East Anglia Climatic Research Unit; Climatic Research Unit. Jones, P. D., and I. Harris. 2008. "Climatic Research Unit (CRU) Time-Series Datasets of Variations in Climate with Variations in Other Phenomena." NCAS British Atmospheric Data Centre, 2015, http://catalogue.ceda.ac.uk/uuid/3f8944800cc48e1cbc29a5ee12d8542d.

Time period:

- Spatial database 2001: Based on CRU v.3.22 1991–2001
- Spatial database 2011: Based on CRU v.3.22 2001–11

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Level 1, Level 2, Level 3
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Decadal variation of monthly precipitation

Decadal variation of monthly precipitation is the standard deviation of monthly precipitation in the previous decade.

- Monthly breakdowns: January to December

Units of measurement: Millimeters

Country: India

Source: Climatic Research Unit Database Version 3.22 (CRU). University of East Anglia Climatic Research Unit; Climatic Research Unit. Jones, P. D., and I. Harris. 2008. "Climatic Research Unit (CRU) Time-Series Datasets of Variations in Climate with Variations in Other Phenomena." NCAS British Atmospheric Data Centre, 2015, http://catalogue.ceda.ac.uk/uuid/3f8944800cc48e1cbc29a5ee12d8542d.

Time period:

- Spatial database 2001: Based on CRU v.3.22 1991–2001
- Spatial database 2011: Based on CRU v.3.22 2001–11

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Level 1, Level 2, Level 3
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Precipitation anomaly

Precipitation anomaly is the deviation of the decadal average of monthly precipitation from the historical monthly average precipitation. The decadal average of monthly precipitation refers to the average of monthly precipitation in the previous decade. The historical monthly average precipitation refers to the average monthly precipitation from 1960 to 1991.

- Monthly breakdowns: January to December

Units of measurement: Millimeters

Country: India

Source: Climatic Research Unit Database Version 3.22 (CRU). University of East Anglia Climatic Research Unit; Climatic Research Unit. Jones, P. D., and I. Harris. 2008. "Climatic Research Unit (CRU) Time-Series Datasets of Variations in Climate with Variations in Other Phenomena." NCAS British Atmospheric Data Centre, 2015, http://catalogue.ceda.ac.uk/uuid/3f8944800cc48e1cbc29a5ee12d8542d.

Time period:

- Spatial database 2001: Based on CRU v.3.22 1991–2001
- Spatial database 2011: Based on CRU v.3.22 2001–11

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Level 1, Level 2, Level 3
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Pollution

Carbon monoxide levels

Carbon monoxide levels refers to the annual average of monthly carbon monoxide concentration levels. This indicator is constructed by averaging information of 0.25-degree resolution grids.

Units of measurement: Parts per billion by volume (ppbv)

Country: India

Source: National Aeronautics and Space Administration (NASA) Earth Observations (NEO-CM), http://neo.sci.gsfc.nasa.gov/view.php?datasetId=MOP_CO_M.

Time period:

- Spatial database 2001: Based on NEO-CM 2002
- Spatial database 2011: Based on NEO-CM 2011

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Level 1, Level 2, Level 3
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Nitrogen dioxide levels

Nitrogen dioxide levels refers to the annual average of monthly nitrogen dioxide concentration levels. This indicator is constructed by averaging information of 0.25-degree resolution grids. Satellite sensors measure nitrogen dioxide in the ultraviolet-visible part of the electromagnetic spectrum. Nitrogen dioxide belongs to a family of highly reactive gases called nitrogen oxides; it plays an important role in the chemical formation of ozone.

Units of measurement: Billions of molecules per square millimeter

Country: India

Source: National Aeronautics and Space Administration (NASA) Earth Observations (NEO-ND), http://neo.sci.gsfc.nasa.gov/view.php?datasetId=AURA_NO2_M.

Time period:

- Spatial database 2001: Based on NEO-ND 2001
- Spatial database 2011: Based on NEO-ND 2011

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Level 1, Level 2, Level 3
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Aerosol particle radius

Aerosol particle radius is the annual average of monthly concentration of smaller aerosols as a share of the total concentration of all class-sizes of aerosols. This indicator is constructed by averaging information of 0.1-degree resolution grids. Aerosols are tiny solid and liquid particles suspended in the atmosphere. Some of them have a natural origin (dust, sea salt, volcanic ash), while others are produced by human activity. Manmade aerosols tend to be smaller than natural aerosols.

Units of measurement: Percent

Country: India

Source: National Aeronautics and Space Administration (NASA) Earth Observations (NEO-AR), http://neo.sci.gsfc.nasa.gov/view.php?datasetId=MYDAL2_M_AER_RA.

Time period:

- Spatial database 2001: Based on NEO-AR 2003
- Spatial database 2011: Based on NEO-AR 2011

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- 2001: Level 1, Level 2, Level 3
- 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia

Aerosol optical thickness

Aerosol optical thickness is the annual average of monthly aerosol optical thickness. This indicator is constructed by averaging information of 0.1-degree resolution grids. Aerosol optical thickness is the degree to which aerosols prevent the transmission of light by absorbing or scattering light. An optical thickness of less than 0.1 indicates a crystal-clear sky with maximum visibility, whereas a value of 1 indicates the presence of aerosols so dense that people would have difficulty seeing the sun. Aerosols are tiny solid and liquid particles suspended in the atmosphere. Some of them have a natural origin (dust, sea salt, volcanic ash), while others are produced by human activity.

Units of measurement: Thickness scale (0–1)

Country: India

Source: National Aeronautics and Space Administration (NASA) Earth Observations (NEO-AT), http://neo.sci.gsfc.nasa.gov/view.php?datasetId=MYDAL2_M_AER_OD.

Time period:

- Spatial database 2001: Based on NEO-AT 2003
- Spatial database 2011: Based on NEO-AT 2011

Rural/urban division:

- Spatial database 2001: Not applicable
- Spatial database 2011: Not applicable

Spatial levels of disaggregation:

- Spatial database 2001: Level 1, Level 2, Level 3
- Spatial database 2011: Level 1, Level 2, Level 3

Administrative boundaries: Based on Census of India–Administrative Atlas of India 2011

Geometry type: Polygon

Geographic coordinate system: GCS_WGS_1984

Creator: Spatial Data for South Asia