The Ganges, also known as Ganga, is one of the most sacred rivers to Hindus. Starting in western Himalayas in the Indian state of Uttarakhand, it flows south and east through the Gangetic Plain of North India, before emptying into the Bay of Bengal.

The Ganges River Basin

- **Length**: 2,600 km
- **Basin Area**: 1.00-1.11 million km²
- **Annual flow**: 318-422 billion m³
- **Flow through**: Bangladesh, China, India, Nepal

**Glaciers in the Ganges**

Glacier area shrinkage:

- **66%** of melt in upper reach
- **11%** from glacier melt
- **9%** from snow melt

**River Flow & Runoff Mix**

- **Base flow**: 14%
- **Rainfall-runoff**: 66%
- **Glacier melt**: 11%
- **Snow melt**: 9%

**Runoff mix in the upper Ganges**

Source: China Water Risk based on data from Center for Water Resources Research, Chinese Academy of Sciences. Rainfall, snowfall and runoff change are expressed in equivalent water height. All data are calculated from five ensemble model (BCC-CSM1.1, CanESM2, CCSM4, MIROC5, MPI-ESM-LR) in IPCC AR5.

**Climate Change: Past & Future Trend**

- **Temperature Change**: 0.87°C (1956-2005), 1.41°C (2006-2055)

**Hydrological Changes (mm/year)**

- **Snowfall**: 0.55
- **Rainfall**: 0.85
- **Runoff**: 0.10
- **Rainfall-runoff**: -0.24

Source: China Water Risk based on data from Center for Water Resources Research, Chinese Academy of Sciences. Rainfall, snowfall and runoff change are expressed in equivalent water height. All data are calculated from five ensemble model (BCC-CSM1.1, CanESM2, CCSM4, MIROC5, MPI-ESM-LR) in IPCC AR5.

**Key Country Exposure**

- **Bangladesh**: 6% GDP mix, 32% population, 3% water use per capita
- **India**: 3% GDP mix, 59% population, 19% water use per capita
- **Nepal**: 5% GDP mix, 5% population, 0.02% water use per capita
- **China**: 3% GDP mix, 91% population, 19% water use per capita

The Ganges River Basin matters for countries, people & the economy:

- **Total surface water resources**: 388 billion m³
- **Total population**: 614 million
- **Total 2015 GDP (constant 2010 price)**: US$790 billion

**Service & Agriculture Water Use Per Unit GDP (m³/USD)**

- **Services**: 56%
- **Agriculture**: 19%
- **Industry**: 25%

**Water Use mix**

- **Municipal**: 9%
- **Industry**: 10%
- **Agriculture**: 81%

**Glaciers in the Ganges**

- **Number**: 7,963-12,641
- **Size**: 7,913-12,641 km²

Source: China Water Risk based on calculation by CAS IGSR and hydrological models

DEFINITIONS (FAO AQUASTAT):

- River flow/runoffs: the amount of river water that flows in a given time
- Surface water produced internally: long-term average annual volume of surface water generated by direct runoff from endogenous precipitation (surface runoff) and groundwater contributions
- Total renewable surface water: the sum of the internal renewable surface water resources and the total external renewable surface water resources

**Total Renewable Surface Water**

- **Annual volume**: 318-422 billion m³
- **Source**: China Water Risk based on data from Center for Water Resources Research, Chinese Academy of Sciences.

**Glacier area shrinkage**

- **Total**: 34x
- **Size of Bangladesh**: 5,700 masl

Ice reserves:

- **794-1,345 km³**

**Notes**:

- The share of surface water resources refers to the ratio of surface water produced internally by the river in the respective country and the country’s total renewable surface water.

For references of all data, please refer to China Water Risk, “No Water, No Growth - Does Asia have enough water to develop?”, 2018

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This map uses UN urban population data. However, if we add rural population and other temporary residents living within the municipal boundary of cities, the total population can be larger.