India Data Insights

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Quality of Water Resources

Data Guide – March 2022

Introduction

Sustainable Development Goal 6 is: Access to Clean Water and Sanitation. Ensuring access to clean and safe water for all is therefore a universal development goal.

Some of the targets (by the year 2030) under Goal 6 are:

- 6.1: Achieve universal and equitable access to safe and affordable drinking water for all
- 6.3: Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
- 6.4 Substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

This report covers:

- Trends in ground water recharge
- Ground water utilization
- State of groundwater
- Contaminations in groundwater
- Quality of rural piped water supply

India’s Water Quality & Usage at a glance

2/3rd of India’s annual ground water recharge is dependent on rainfall

Punjab (0.45 MCM), Haryana (0.22 MCM) receive the most GW Recharge per sq. Km

90% of ground water extracted in 2020 was used for **Irrigation**

Number of blocks categorized as **Safe** has **decreased** by 7 percentage point **and semi-critical** blocks has **increased** by **6** percentage points, in the last two decades

Punjab (79%) Delhi (65%) Rajasthan(63%) are leading in number of over-exploited blocks for ground water (2020)

Nitrate, **Fluoride** and **Iron** are the most common contaminations found in ground water (2019)

5-6 types of ground water contaminations are found in Punjab, Haryana and Rajasthan

~80% of **Kerala’s tested** drinking water sources are bacteriologically contaminated.
50% of water sources tested in **Tripura and Rajasthan** are chemically contaminated (2022)

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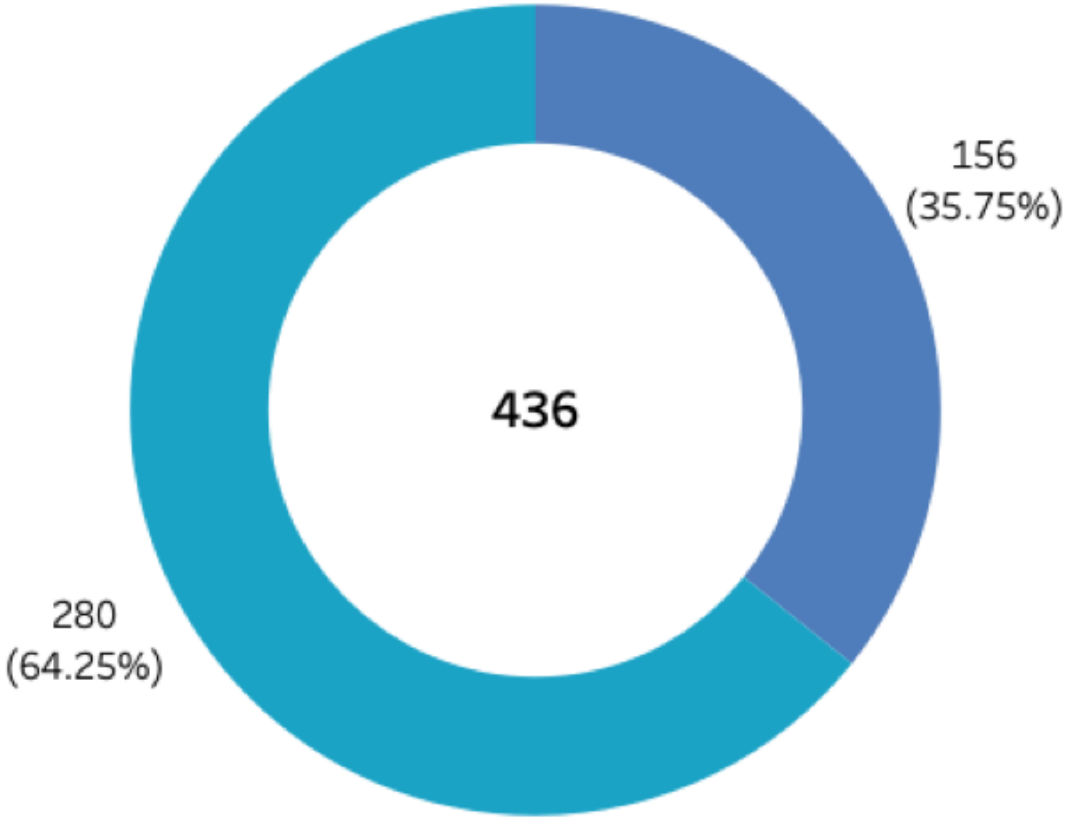
Key Insights

- Two-third of India's annual ground water recharge is via rainfall
- Overall annual ground water recharge has been approximately the same in last two decades.
- Recharge from rainfall has decreased by 12 BCM in the last decade.
- States in the northern belt, such as Punjab, Haryana, Uttar Pradesh and West Bengal received the most annual ground water recharge per sq. km in 2020.
- Annual ground water recharge is found high in the districts of eastern coastline of India.

Share of Ground Water Recharge by Sources - India (2020)



Recharge from other Sources Recharge from Rainfall

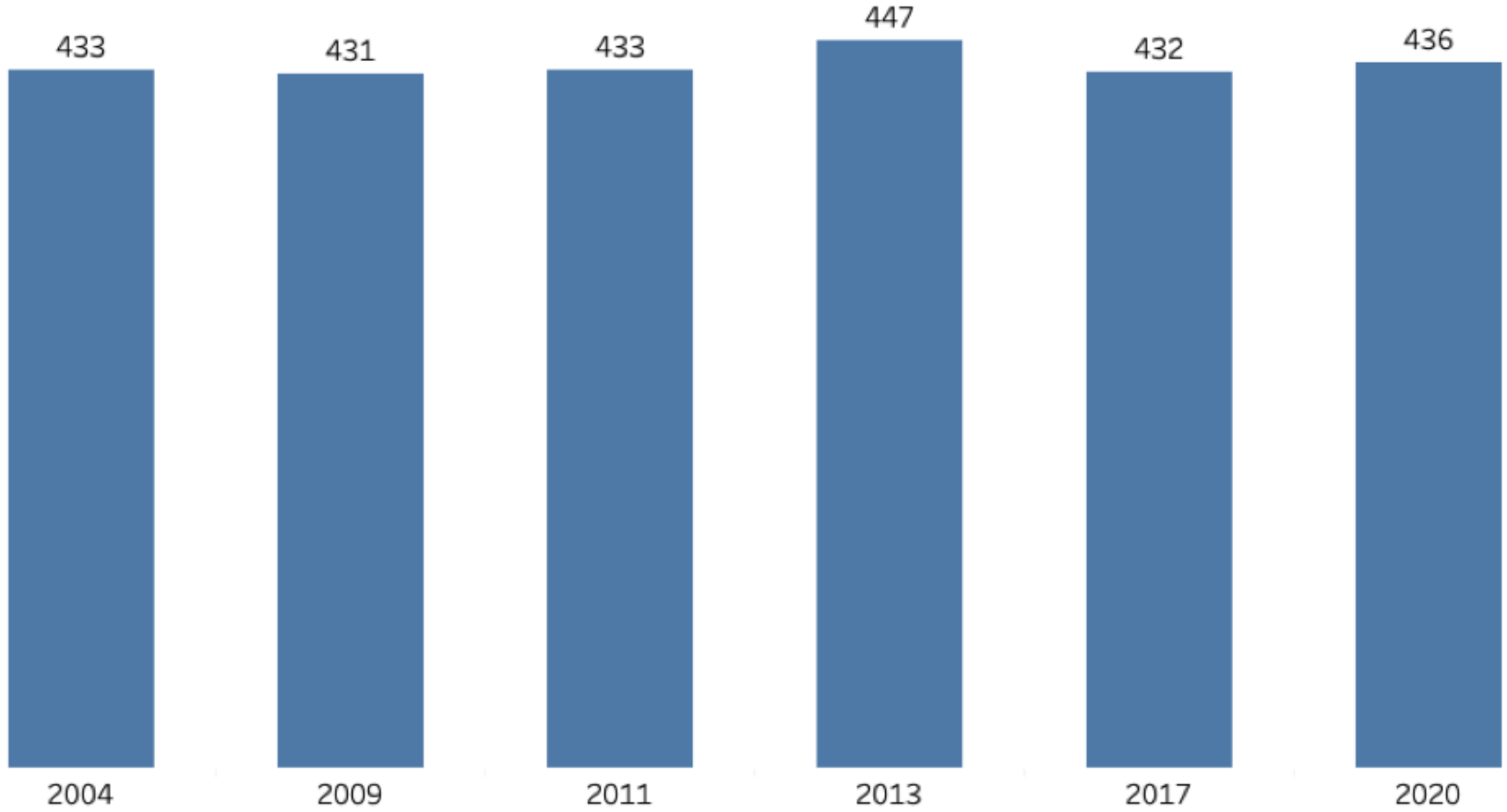
In 2020, India's total ground water recharge is about 436 BCM.

Major source is recharge through rainfall.

Almost **2/3rd** of the ground water recharge **(64.25%)** is through **rainfall** and rest (35.75%) is through other sources.

Notes: Water Recharge is in BCM - Billion Cubic Meters

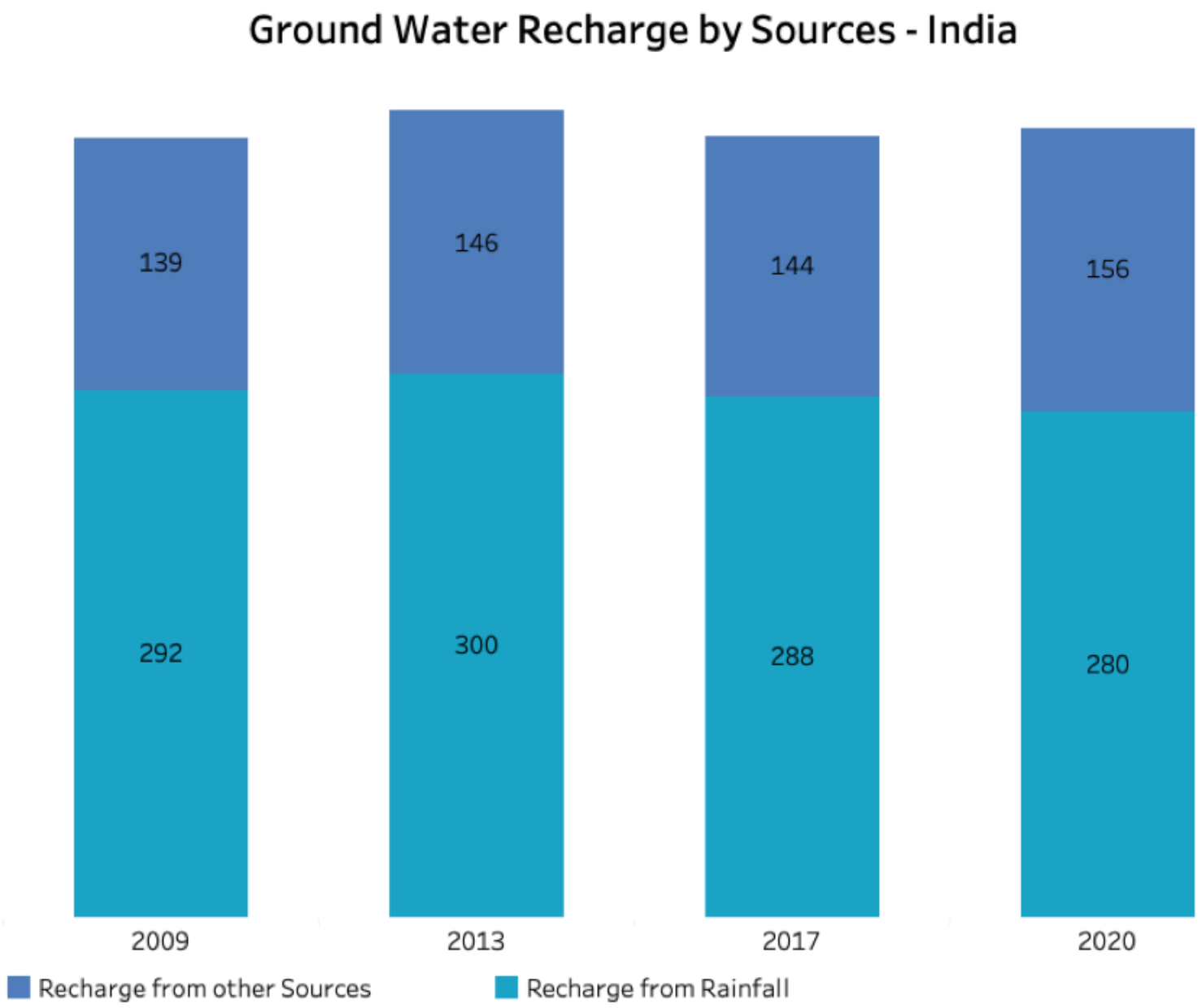
Total Annual Ground Water Recharge - India



Notes: Water Recharge is in BCM - Billion Cubic Meters

In the last two decades, ground water recharge in India has remained almost the same with some minor fluctuations.

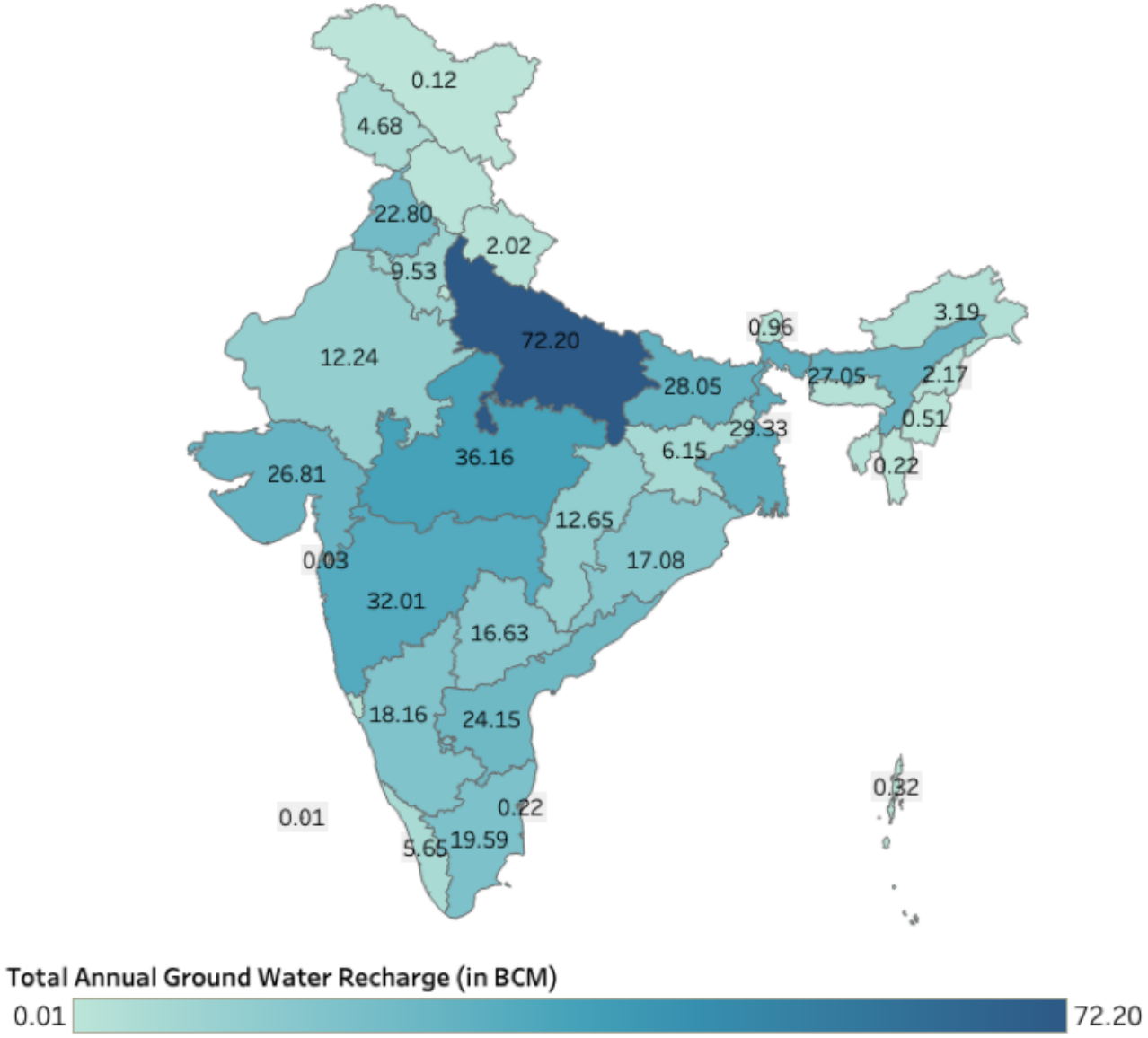
The highest GW recharge was observed in the year 2013 (447 BCM) and the lowest in the year 2009 (431 BCM).



Annual ground water recharge from rainfall has decreased by 12 BCM (~4%) in over a decade.

However, ground water recharge from other sources has increased by 17 BCM (~12%) during the same period.

State-wise Total Annual Ground Water Recharge (2020)



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In year 2020, Uttar Pradesh observed the highest GW recharge of 72.2 BCM, followed by Madhya Pradesh 36.16 BCM and Maharashtra 32.01 BCM.

The least annual GW recharge is in the UTs - Lakshadweep (0.01 BCM), Dadar Nagar Haveli(0.03 BCM)

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