Demand for Grants 2025-26 Analysis
Jal Shakti

The responsibility of managing water resources in India is shared between the Union government and state governments. At the Union level, the Ministry of Jal Shakti is responsible for the development, and management of water as a national resource.[1] It ensures that water is made available for diverse water needs, such as domestic use, sanitation, irrigation, and industrial use.[1] It also ensures the conservation of rivers and other water bodies.

The Ministry has two Departments.[1] The Department of Water Resources, River Development, and Ganga Rejuvenation (DoWR) frames policies and implements programmes for the assessment, development, and regulation of water resources.[2] It frames laws related to water resources, and addresses inter-state and inter-boundary water issues. It is also responsible for the rejuvenation of the river Ganga and its tributaries, and for addressing issues such as water quality and pollution. The Department of Drinking Water and Sanitation (DDWS) is responsible for providing safe drinking water and sanitation facilities to rural India.[3]

This note analyses the expenditure by the Ministry of Jal Shakti and related schemes. It also discusses key issues related to water governance in India.

Overview of Finances

Table 1: Budget allocation to the Ministry of Jal Shakti (in Rs crore)

Department	2023-24 Actual	2024-25 RE	2025-26 BE	% change from 24-25 RE to 25-26 BE
Drinking Water and Sanitation	76,570	29,917	74,226	148%
Of which				
JJM	69,992	22,694	67,000	195%
SBM-G	6,546	7,192	7,192	0%
Water Resources	18,539	21,641	25,277	17%
Of which				
PMKSY	6,088	6,621	8,260	25%
River Interlinking	1,922	3,000	3,400	13%
Namami Gange	1,391	2,000	2,400	20%
ABY	1,739	600	1,780	197%
Total	**95,109**	**51,558**	**99,503**	**93%**

Note: BE is budget estimate and RE is revised estimate. Other schemes include allocation towards the Dam Rehabilitation and Improvement Programme and the Flood Management and Border Areas Programme.
Sources: Demands for Grants 2025-26, Ministry of Jal Shakti; PRS.

In 2025-26, the Ministry of Jal Shakti has been allocated Rs 99,503 crore, marginally higher than the budget allocation in 2024-25 (Rs 98,714 crore). The revised estimate for expenditure in 2024-25 is 48% lower than the budget allocation. This is due to reduced allocation to the Jal Jeevan Mission at the revised stage.

Over the last ten years, 76% of the budget allocation to the Ministry has gone to the DDWS. Until 2021-22, the gap between allocations to the two departments remained less than Rs 50 crore. In 2021-22, allocation for DDWS almost tripled over the previous year, largely driven by increased allocation to the Jal Jeevan Mission.

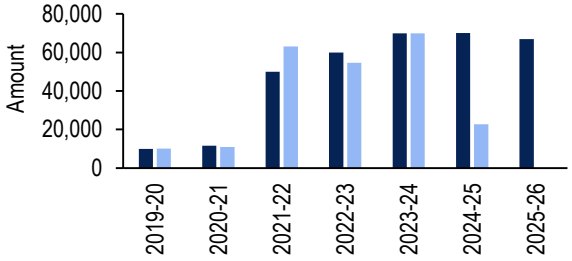
Department of Drinking Water and Sanitation

The Department of Drinking Water and Sanitation implements two key centrally sponsored schemes, the Jal Jeevan Mission and the Swachh Bharat Mission – Grameen (SBM-G).[3] These schemes aim to provide water supply and sanitation to rural India.

Jal Jeevan Mission

The Jal Jeevan Mission (JJM) was launched in 2019, to provide assured tap water supply to all 19 crore rural households and public institutions by 2024.[3] JJM also aims to address water quality by focusing on grey water management.

Figure 1: Revised estimate is 32% of budget allocation in 2024-25 (in Rs crore)



Note: Revised estimate taken as actual for 2024-25.
Source: Budget documents for various years; PRS.

JJM has been allocated Rs 67,000 crore in 2025-26, a 195% increase over the revised estimate for 2024-25, but 5% lower than the budget estimate of 2024-25. In 2024-25, the revised estimate of expenditure on the scheme is Rs 22,694 crore, as opposed to a budget allocation of Rs 70,163 crore. This is the lowest expenditure on the scheme in any year since 2020-21.

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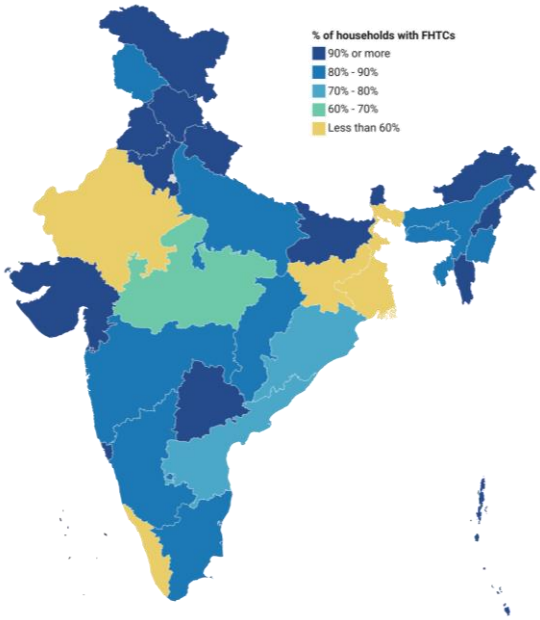
Target of covering all households by 2024 not met

JJM aimed to provide all 19 crore rural households in India with functional household tap water connections (FHTCs) by 2024.[3,4] As on January 21, 2025, 15 crore households (80% of all households) have FHTCs.[4] The scheme was extended until 2028 in February 2025.[5]

In 2022, a functionality assessment of JJM villages and households was conducted.[6] As per the report, 62% households have fully functional tap connections.[6] Full functionality is achieved if there are working tap connections with regular supply of water in adequate quantities, which also meets certain quality standards.

Figure 2: 80% of households have FHTCs as on January 21, 2025



Source: JJM Dashboard, accessed on January 21, 2025; PRS.

Variance in state achievements

As of January 2025, all rural households in eight states and three Union Territories have FHTCs.[4] Less than 60% households have been covered in four states - Jharkhand, Kerala, Rajasthan, and West Bengal. In Kerala, FHTC coverage is 54%.[4] Land acquisition and pending clearances from various government agencies have been reported as the main reasons for delays in project completion under JJM in Kerala.[7]

After all households in a village are provided FHTCs, the village is marked as 'Har Ghar Jal'.[8] Gram Panchayats can then pass a resolution self-certifying the 'Har Ghar Jal' status. Of the 2.5 lakh villages that reported 100% tap connectivity, 61% (1.5 lakh) have self-certified their 'Har Ghar Jal' status.[4]

The Functionality Assessment Report (2022) also noted disparities between achievements by states in ensuring quantity, regularity, and quality water supply.[6] JJM guidelines require that at least 55 litres of water per person per day be supplied.[6] Water supply is considered regular if it is available daily, or as per a schedule for all 12 months. In Kerala, Sikkim, and Tripura, water supply to more than 40% of households did not meet quality standards.[6] These standards are based on 15 parameters, including pH, hardness, alkalinity, presence of chloride, ammonia, nitrates, iron, and coliform bacteria (see Table 7 in Annexure).

Table 2: Results of the functionality assessment (2022) (number of states/Union Territories)

% Households	Adequate Quantity	Regular Supply	Potable water
Less than 50%	1	-	1
50%-75%	6	9	2
75%-90%	11	17	12
90% or more	15	7	18

Note: Data is not available for Lakshadweep.
Source: Functionality Assessment of Tap-Water Connections 2022; PRS.

Water Quality

The responsibility for ensuring water supply and water quality lies with state departments.[9] The Standing Committee on Water Resources (2024) noted that there were challenges in providing good quality drinking water.[9] Some of these include a lack of regular water quality testing, unhygienic areas around public water supply infrastructure, and insufficient testing labs.[9] In 2024-25, 66 lakh samples were tested, of which 3.3 lakh (5%) lakh were found contaminated.[10] Remedial action was taken on 59% of the contaminated samples.[10] The Standing Committee recommended that states separate the responsibilities of water supply and water quality monitoring.[9] This would increase trust, transparency, and accountability.

States unable to contribute share towards JJM

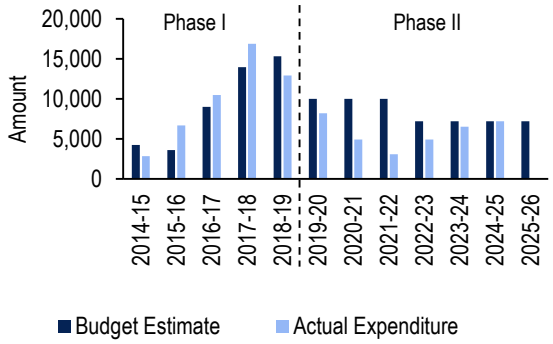
JJM is a centrally sponsored scheme. Funding for the scheme is divided between Centre and States in the proportion 90:10 for Himalayan and North-Eastern states and 50:50 for other states. In 2024-25, only 31% of the central share allocated has been released (as of February 2025).[11] Funds are released to states in multiple tranches.[12] At the beginning of the year, up to 25% of the central allocation to the state is released. Funds are transferred again only after the state's matching share is released, and at least 75% of the released funds are utilised. The Standing Committee on Water Resources (2023) noted several issues which delayed the release of states' share, and subsequent fund utilisation.[13] These include uneven terrain, scattered rural habitations, adverse climates, and delays in obtaining statutory clearances.[13] The Committee (2024) noted that cost overruns have also created additional financial burden on states, which delayed the release of the states' share.[9] (See Table 8 and Table 9 in the Annexure for details on central and state share release under JJM for 2023-24 and 2024-25)

Since 2020-21, the central government has been extending 50-year interest-free loans to states for capital expenditure.[14] In 2022-23, one lakh crore rupees was provided under this scheme.[9] Of this, Rs 4,000 crore was earmarked for works under JJM.[9] Rs 1.5 lakh crore has been allocated as special assistance to states for capital investment in 2025-26. A part of this amount will be allocated to states based on the Finance Commission's tax-sharing formula.[15] To avail funds, states must comply with central guidelines on fund release procedure, and naming and branding.[15]

Swachh Bharat Mission - Grameen

In 2014, the Swachh Bharat Mission-Grameen (SBM-G) was launched to end open defecation by providing all rural households access to toilets.[16] The scope of the scheme was expanded in 2019, to improve cleanliness in rural areas through solid and liquid waste management. The Department of Drinking Water and Sanitation declared that SBM-G Phase I met its target of ending open defecation in October 2019.[16] Phase II of the scheme aims to make all villages ODF (open defecation free) Plus Model villages.[16] A village is considered an ODF Plus Model village if it is ODF, visually clean, and has arrangements for solid and liquid waste management.[17]

Figure 3: Budget allocation towards SBM-G has remained constant since 2022-23 (in Rs crore)



Note: Revised estimate taken as actual expenditure for 2024-25.
Source: Budget documents of various years; PRS.

In 2025-26, the budget estimate for expenditure on SBM-G is Rs 7,192 crore, the same as the budget estimate and the revised estimate for 2024-25. In 2019-20, the estimated budget allocation towards this scheme was 35% less than in the previous year. It decreased again, by 28% between 2021-22 and 2022-23. Actual expenditure on the scheme has been less than the budget allocation in every year since 2018-19.

Status of implementation of SBM-G

According to the National Family Health Survey 5, 19% of households (26% rural and 6% urban) practised open defecation between 2019 and 2021.[18] All villages were declared ODF in 2019. Phase I of the SBM-G scheme focused on safe technology choices for sanitation.[9] Retrofitting single pit toilets into twin pits was encouraged, for better faecal sludge management.[9] The Standing Committee on Water Resources (2023-24) noted that in 14 states and Union Territories, including Haryana, Karnataka, Meghalaya, Nagaland, Rajasthan, and Uttarakhand, the majority of toilets continue to be single-pit.[9]

Phase II: The target of SBM-G Phase II is to transform all villages from ODF to ODF Plus Model villages by 2024-25.[19] After achieving ODF status, villages must aim to achieve ODF Plus status. There are three progressive stages of ODF Plus villages – Aspiring, Rising, and Model.[20] A model village has arrangements for solid and liquid waste management, has minimal litter and stagnant wastewater, no plastic dumps, and displays messages encouraging sanitation and cleanliness.[20]

Of the 5.86 lakh villages covered under SBM-G, 5.63 lakh (96%) are ODF Plus villages as on January 30, 2025.[21] 4.94 lakh villages have solid waste management arrangements and 5.19 lakh have liquid waste management arrangements.[21] These include compost pits, community soak pits, sewers, closed drains, faecal sludge management systems, etc.[22]

After meeting the ODF Plus criteria, villages can declare themselves to be ODF Plus at a Gram Sabha meeting.[20] Third-party verification of this declaration is required to be done within 90 days of the first declaration.[20] This may be done by district/block officials or non-government volunteers.[22] 44% of SBM-G villages have had their ODF Plus Model certification verified, as on January 30, 2025.[21]

Table 3: Almost three-fourths of SBM-G villages have self-certified ODF Plus Model status (as on January 30, 2025)

	Number of villages	% of SBM-G villages
ODF Plus	5,62,801	96%
ODF Plus Model	4.29.487	73%
ODF Plus Model Verified	2,60,489	44%

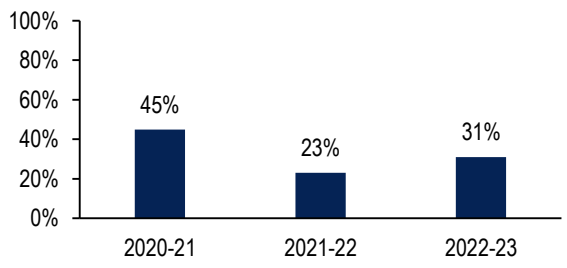
Source: SBM-G Dashboard accessed on January 30, 2025; PRS

Plastic waste management is a key objective under SBM-G Phase II.[22] Gram Panchayats are required to arrange door to door plastic waste collection, segregation, and recycling. Plastic that cannot be recycled has to be sent to block level Plastic Waste Management Unit. Financial assistance of up to Rs 16 lakh per block is given to set up a plastic waste management unit (PWMUs).[22] As of December 2024, there were 978 PWMUs operational in the country.[23] However, there are no operational PWMUs in 13 states and Union Territories, including Assam, Gujarat, Haryana, and Rajasthan.[23]

Release of Funds

SBM-G is a centrally sponsored scheme with fund sharing pattern between Centre and states as follows: (i) 90:10 for north-eastern states, Himachal Pradesh, Uttarakhand and Jammu and Kashmir, (ii) 100% for remaining Union Territories, and (iii) 60:40 for other states.[22] From 2020-21 to 2022-23, less than 50% of funds allocated by the Centre to states/UTs for SBM-G has been released.[24]

Figure 4: Less than 50% of allocated funds released between 2020-21 and 2022-23



Source: Unstarred Question 260, Rajya Sabha, July 31, 2023; PRS.

Fund release from the central government is contingent on states releasing their share, and the funds being utilised.[12] State governments are also required to guarantee that funds for sanitation activities are being devolved to local bodies as per the recommendations of the 15th Finance Commission.[25] In 2022-23, no funds were released to four states - Haryana, Maharashtra, Odisha and Telangana.[24] In 2022-23, 10 states had delayed releasing the state's share of funds.[9] Delays ranged from 67 to 165 days. Insufficient resources, procedural delays, and the need to re-appropriate funds in the state budget were cited as reasons for the delay.[9]

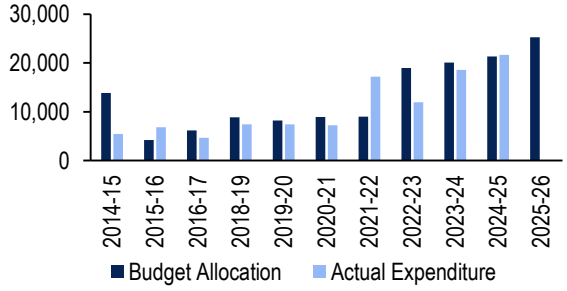
Once the central share of funds is released to the state's account, it must be transferred to the nodal account for the scheme within 30 days.[26] In February 2023, the Ministry of Finance decided to charge interest at 7% if states delayed transferring funds to the nodal account.[26] The Standing Committee on Water Resources (2024) noted that levying interest would create deterrence if delays were deliberate, but could exacerbate genuine resource constraints.[9] It recommended that incentives be designed for states to ensure timely fund release.[9]

Department of Water Resources, River Development and Ganga Rejuvenation

The Department of Water Resources, River Development and Ganga Rejuvenation is responsible for water resource management, flood and irrigation management, groundwater development and rejuvenation of rivers in India.

In 2025-26, the DoWR has been allocated Rs 25,277 crore, 17% higher than the revised estimates of 2024-25. In 2021-22, actual expenditure was almost double the budget estimate. This is because of additional expenditure on river inter-linking project and the PM Krishi Sinchai Yojana at the revised stage.

Figure 5: Allocation towards the DoWR saw a significant increase in 2022-23 (in Rs crore)



Note: Revised estimate taken as actual for 2024-25.
Source: Union Budget documents for various years; PRS.

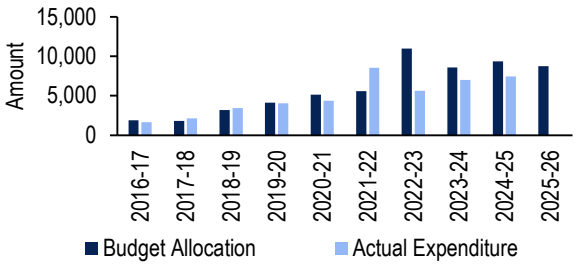
Pradhan Mantri Krishi Sinchai Yojana (PMKSY)

A large part of India's agricultural land is rain-fed, i.e. depend on rainfall for water.[27] Two-thirds of India's agricultural land is also drought-prone.[27] As of 2019-20, 55% of the net sown area is under irrigation.[28]

PMKSY was launched in 2015-16 to increase cultivable area under assured irrigation, improve water availability on farms, and increase water use efficiency.[29] The Ministry of Jal Shakti implements two components of the scheme, the Accelerated Irrigation Benefit Programme (AIBP), and Har Khet Ko Pani (HKKP). Major and medium irrigation projects are taken up under AIBP, and minor irrigation under HKKP.[29]

Since 2016-17, a total of Rs 59,344 crore has been allocated towards PMKSY. Actual expenditure has been 87% of this amount. In 2021-22, actual expenditure was 1.5 times the budgeted amount. In this year, 10 new projects were included under AIBP.[29] Since then, expenditure has been 50%-80% of the budget estimate.

Figure 6: Budget allocation towards PMKSY has increased since 2016-17, almost doubling in 2022-23 over 2021-22 (in Rs crore)

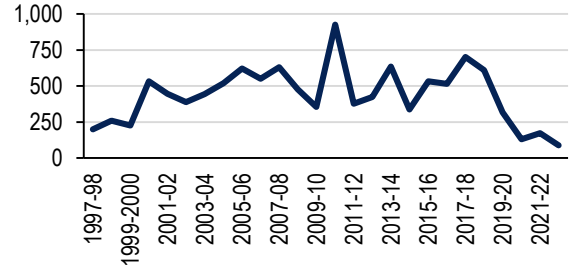


Note: Revised estimate taken as actual for 2024-25. The flood management programme, irrigation census, and special package for Maharashtra have been separated from PMKSY in the budget documents for 2025-26. To maintain consistency with older data, actual expenditure for 2023-24, and all figures for 2024-25 and 2025-26 have been adjusted to include these programmes. Excluding them, PMKSY has been allocated Rs. 8,260 crore for 2025-26.
Source: Budget documents of various years

Irrigation potential targets not met under PMKSY

AIBP: The Ministry of Agriculture has estimated India's ultimate irrigation potential (land that can be irrigated using available water resources) at 23.5 million hectares.[28] Prior to the launch of AIBP in 1996-97, 37% (8.8 million hectares) of irrigation potential had been created.[28] AIBP's irrigation potential target was 15 million hectares. Up to March 2023, 48% of this target (7.2 million hectares) has been met.[28] Since AIBP's inclusion under PMKSY in 2016-17, 63% of projects have been completed (62 out of 99).[43]

Figure 7: Incremental irrigation potential created under AIBP (in thousand hectares)



Source: Agricultural Statistics at a Glance-2023; PRS.

In 2018, a CAG audit of AIBP found delays in project completion ranging from one to 18 years.[30] These delays were caused by shortfalls in land acquisition, delays in obtaining statutory clearance, and changes in the scope of work.[30] This also led to a cost overrun (almost thrice the original cost for 84 projects), while targeted benefits were not realised.[30]

Har Khet Ko Pani: Under HKKP, total irrigation potential of 6.9 lakh hectares has been created between 2016 and 2023, and 55% of projects (5,893 out of 10,642) have been completed.[31]

Table 4: 55% of projects under HKKP are complete (as of December 2023)

Sub-Component	Total Projects	Projects Completed	% Completed
SMI	7,359	4,012	55%
RRR	3,270	1,869	57%
Groundwater development	13	12	92%
Total	**10,642**	**5,893**	**55%**

Note: SMI – Surface Minor Irrigation, RRR - Repair, Renovation, and Restoration of Water Bodies.
Source: Starred Question No. 162, Rajya Sabha, December 18, 2023; PRS.

Atal Bhujal Yojana

Atal Bhujal Yojana (ABY) aims to improve the management of groundwater resources in seven water stressed states through community-led techniques.[43] It has a total outlay of Rs 6,000 crore, and was launched in 2020 for a period of six years. Of this, Rs 1,400 crore has been allocated towards Institutional Strengthening and Capacity Building.[32] Rs 4,600 crore has been allocated towards providing incentives to states for preparation of Water Security Plans, adoption of efficient water use practices, public disclosure of groundwater data, and improvement of rate of groundwater decline.[32]

60% of targets achieved

Between 2020 and 2025, 57% of the total outlay (Rs 3,421 crore out of Rs 6,000 crore) has been released to states, and 48% (Rs 2,864 crore) has been utilised by states under ABY.[43] Across states, expenditure has remained above 70% of released funds.[43]

Table 5: 57% of allocated funds released to states since 2020 (as of February 2025)

State	Released funds as % of allocated amount	Expenditure as % of released funds
Gujarat	70%	82%
Haryana	108%	71%
Karnataka	69%	87%
Madhya Pradesh	60%	90%
Maharashtra	55%	99%
Rajasthan	33%	91%
Uttar Pradesh	28%	79%
Total	**57%**	**85%**

Source: ABY Dashboard, accessed on February 3, 2025; PRS.

As of February 3, 2025, targets have been met, or exceeded in components such as equipment installation, preparation of water security plans, and adoption of practices to improve water-use efficiency.[43] However, progress on training (at the block, district, and state level), and improving the rate of groundwater decline have been slow (see Table 10 in Annexure).[43]

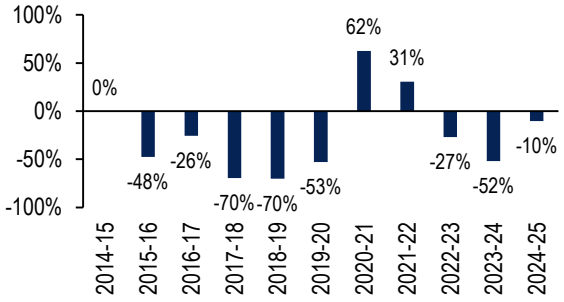
Expanding scope of the scheme

ABY is currently being implemented in more than 8,000 water stressed panchayats across 80 districts in seven states.[33] The Standing Committee (2023) had observed that about 37% of water stressed blocks in India were covered under the scheme.[33] It recommended that the scheme be expanded to include all other water stressed areas across the country (see page 7 for a discussion on ground water stress).[33]

Namami Gange Programme

The Namami Gange programme, launched in 2014, aims to conserve and rejuvenate the Ganga and its tributaries.[34] Its key pillars include river surface cleaning, afforestation, creating sewerage treatment infrastructure, river-front development, industrial effluent monitoring, and public awareness.[34] It is being implemented by the National Mission for Clean Ganga.

Figure 8: Funds underutilised in all but two years



Note: Revised estimate taken as actual for 2024-25 and 2014-15.
Source: Budget documents of various years; PRS.

Underspending

Funds allocated towards Namami Gange have been underutilised every year since 2014-15, except two years (2020-21 and 2021-22). 69% of the budgeted amount has been spent up to 2024-25. In 2015, the Clean Ganga Fund was established, to enable the public, non-resident Indians, corporates, and trusts to contribute towards Ganga conservation efforts.[35] The PAC (2024) had observed that this fund was lying largely unutilised.[36] As of March 31, 2024, the Fund had Rs 876 crore.[35] Of this, Rs 383 crores have been sanctioned for various projects.[35]

Issues in project management

The Public Accounts Committee (PAC) (2024) had noted several lapses in project management by the National Mission for Clean Ganga (NMCG).[36] Delays in the approval of detailed project reports, slow pace of implementation, and low fund utilisation were observed.[36] Poor record maintenance was also noted.[36] The Committee noted large expenditure on advertising and promotion, without proportional impact on the ground.[36] While the Clean Ganga Fund was set up to collect funds from non-resident Indians and corporates, 53% of the funds (as of March 2024) have come from public sector undertakings.[35] The Committee recommended that the NMCG find alternate means to generate funds.[36]

Water pollution

The PAC (2024) noted an improvement in water quality in the Ganga between 2018 and 2020.[37] In 2018, there were four polluted stretches (ranging between priority III and V).[37] In 2020, there were two stretches, both of priority V.[37] In 2022, the CPCB observed that dissolved oxygen levels (the higher the value, the healthier the river) and biochemical oxygen demand were found to be within acceptable limits for almost the entire stretch of the Ganga.[38]

The Committee also identified the main sources of pollution to be industrial pollution and sewage waste.[37] It noted that about 50% of wastewater released into the Ganga is industrial waste. More than 2,700 industries situated on the Ganga river bank are classified as Grossly Polluting Industries.[37] These industries are subjected to regular and surprise inspections.[39] Those found to not be in compliance with environmental norms are asked to close. The Committee found that more than 450 such industries were not complying with norms related to the discharge of pollutants into the river.[37]

Sewage Treatment Capacity targets not achieved

The National Mission for Clean Ganga targets a sewage treatment capacity of 7,000 million litres per day (MLD) around the Ganga by December 2026.[40] 200 projects have been sanctioned to create sewage treatment plants with a capacity of 6,217 MLD, and to lay a sewerage network of 5,282 km.[41] As of June 2024, 86% of the targeted sewage network has been laid, but only 52% of the targeted sewage treatment capacity has been achieved.[41]

The PAC (2024) estimated that by 2035, the 97 main towns along the Ganga would produce 3,603 million litres per day of sewage.[37] As of 2024, only about 2,100 million litres per day are treated, and the rest is released into the river, untreated.[37]

River Inter-linking

Thirty river-interlinking projects have been identified under the National Perspective Plan (1980).[42] The aim of these projects is to link water-deficit river basins with water-surplus basins. As of January 2025, implementation has started on only one project, the Ken-Betwa Link Project.[43] This project was approved in 2021, with an estimated cost of Rs 44,605 crore.[44] It is estimated to be completed by 2030. As of June 2024, Rs 9,105 crore (20% of estimated cost) has been spent on the project.[44]

The implementation of the river-interlinking projects is expected to increase India's irrigation potential by 35 million hectares, and generate 34,000 megawatts of hydropower.[45] Additional benefits in flood control, navigation, fisheries, and pollution control are also expected.[45] However, before a project begins, affected states must agree on water sharing, routing, and other issues.[46] Consensus building between states has been cited as one of the biggest challenges in initiating inter-linking projects.[42]

China's South-North Water Transfer Project[47,48,49]

China's north and north-western regions are arid and water-scarce. In 2002, the South-North Water Transfer Project was launched by the Chinese government. Three water routes, connecting four rivers were planned. Two of these routes are complete. This project is estimated to divert about 45 trillion litres of water per year from the Yangtze River Basin to north and north-western China by 2050. This is the largest inter-basin water transfer project in the world. The project is estimated to cost approximately $20 billion, and displace three lakh people.

Inter-basin water transfer supplements water available for domestic and agricultural use, and reduces pressure on groundwater reserves. However, studies have shown that both the 'donor' and 'recipient' basins have faced issues like soil salinization, introduction of invasive species, and changes to the chemical characteristics of water.

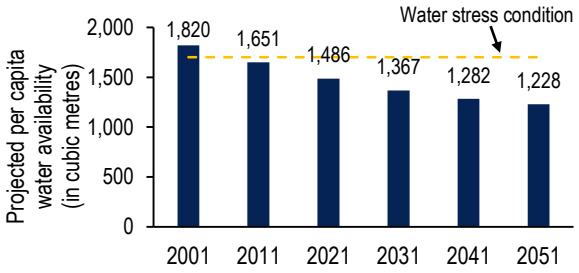
In 2016, the Expert Committee on Restructuring the Central Water Commission and the Central Ground Water Board (Mihir Shah Committee) highlighted several issues with river inter-linking.[50] India's rivers are heavily dependent on monsoons. Thus most rivers are 'water-surplus' during this time, and become 'water-deficit' during the dry season. This raises questions about when water can be transferred between river basins.[50] The growing demands for water in both basins will also have to be taken into account. Climate change is affecting rainfall, and could also impact the amount of water in river basins. Damming rivers for linking projects could also adversely impact sediment flow to downstream regions.[50] The cost of land submergence, and rehabilitation adds to the project cost.[50] For instance, the Ken-Betwa link alone is expected to submerge 8,650 hectares of land, of which 6,400 hectares is forest area.[51] About 8,550 people are estimated to be displaced.

Issues for Consideration

Water stress

The Central Water Commission (CWC) estimates show that in 2021, 1,486 cubic metres of water was available per person in India.[52] Annual per capita water availability less than 1,700 cubic meters indicates a water-stressed condition.[52]

Figure 9: India has been water-stressed since 2011

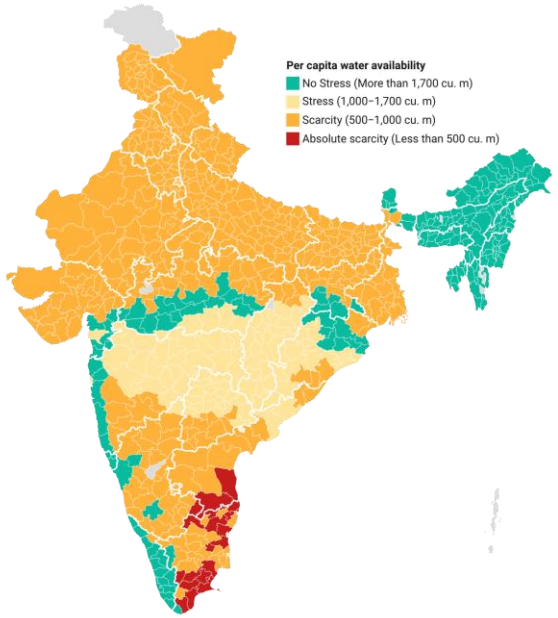


Source: Central Water Commission (2019); PRS.

India receives water from rivers, groundwater, and precipitation (rainfall and snowfall).[53] 61% of utilisable water is from surface water sources, and 39% from groundwater. In India, as of 2020, 90% of water is used for agriculture, 7% for domestic use, and 2% for industrial purposes.[54] For the last four decades,

groundwater has been the main source of water for irrigation.[50] The CWC has observed that while India is not a water-deficit country, severe neglect and lack of water resource monitoring have led some regions to experience persistent water stress.[52]

Figure 10: Projections for 2025 show that most of India is facing water scarcity

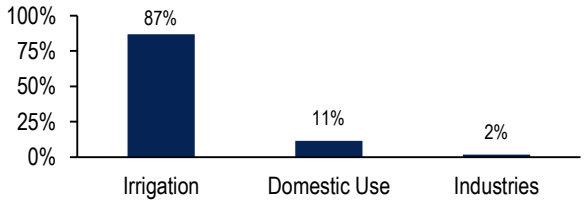


Note: Data was not available for areas marked grey.
Source: India Climate and Energy Dashboard, NITI Aayog, accessed on February 6, 2025; PRS.

Groundwater stress

80% of India's rural drinking water, 50% of urban drinking water, and two-thirds of water for irrigation comes from groundwater resources.[55] The Standing Committee on Water Resources (2023) has noted that there is a growing dependence on ground water due to its decentralised availability, changes in rainfall patterns, and increasing water demand.[55] This has led to a severe depletion of groundwater reserves.[55] The total annual extractable groundwater in India has been assessed as 406 billion cubic metres (BCM).[56] As of 2024, the annual groundwater extraction is 246 BCM. Average ground water extraction in India is 60% (see Table 11). In 1995, this figure was 32%.[56]

Figure 11: Almost 90% of extracted groundwater is used for irrigation



Source: Central Ground Water Board, Data for year 2023-24.

Since almost 90% of extracted groundwater is used for irrigation, it becomes important to examine water-use efficiency in agriculture. The Central Water Commission (2019) has noted that free electricity supply for agricultural use has led to indiscriminate water extraction, and subsequent wastage.[55] The use of water-intensive crops such as paddy and sugarcane has created this demand. Farming of these crops is incentivised by assured government procurement, and fertiliser subsidies.[55] Further, water-use efficiency in Indian agriculture is also low, as compared to other parts of the world.[55] For instance, water-use in sugarcane cultivation is 1,800-2,400 mm in India, as compared to 1,059-1,640 mm in Brazil.[55]

The DoWR suggested that states could review policies subsidising electricity to farmers, and adopt a suitable water pricing policy to conserve ground water.[57] The central government circulated a model Bill for groundwater management to states in 2005.[55] As of August 2023, 21 states and Union Territories had enacted legislation for groundwater management.[58] Punjab and Haryana have passed Bills, to prevent sowing and transplanting paddy before a notified date.[59,60] These legislations aim to reduce the demand for water during critical periods. The Haryana government also launched the 'Meri Pani Meri Virasat' scheme in 2020.[61] Under this scheme, farmers who replace their paddy crop with alternate crops (oilseeds, pulses, cotton, etc.) are given Rs 7,000 per acre.[61]

Water governance in India

In India, the responsibility to manage water resources is shared across three levels. The Union regulates and develops inter-state rivers and valleys, and states manage irrigation, water storage and water power.[62] Water supply for domestic and industrial purposes, and sanitation fall under the purview of local bodies.[63]

Water resources are also managed based on the provisions of legislations like the Water (Prevention and Control of Pollution) Act, 1974, the Environment (Protection) Act, 1986, the Inter-State River Water Disputes Act, 1956, and the Inland Waterways Act, 2016. Schemes like the JJM, SBM-G, and PMKSY have also been launched by the central government. These schemes focus on irrigation, drinking water, and sanitation, all subjects under the jurisdiction of states and local bodies.[63] Targets for these schemes are set by the central government. Funding for these schemes is shared by the centre and states, with central share release dependent on the release of state shares.[12]

The Mihir Shah Committee noted that throughout the 20th century, the focus of water governance was to increase India's irrigation potential, which was crucial for food security.[50] Despite more than four lakh crore rupees being invested in large irrigation projects since Independence, there has been no focus on enduring outcomes, like sustainability.[50]

In the decades immediately following Independence, India's water needs were being meet by surface water.[50] However, this has shifted to groundwater in the last four decades. The Mihir Shah Committee also noted that India's progress on integrating surface planning and groundwater planning has been slow.[50] Water in all its forms is a single entity, with groundwater and surface water continuously interacting with each other.[64] The Committee noted that management and governance of water resources needs an integrated, holistic, and multidisciplinary approach.[50]

Restructuring the Central Water Commission (CWC) and Central Ground Water Board (CGWB)

The CWC and the CGWB are agencies implementing schemes for the development and management of water resources in India.[65,66] In 2016, the Mihir Shah Committee, constituted to restructure the CWC and CGWB, presented its report.[50] It observed that the CWC, established in 1945 and the CGWB, established in 1971, had continued unreformed for decades.[50] The two bodies also work in an isolated manner. It recommended that a National Water Commission be established as the apex body dealing with water policy, data, and governance in India.[50] A National Interdepartmental Steering Committee has been constituted to manage water resources, with representatives from state governments and central Ministries.[67] It is chaired by the Secretary, DoWR. In 2021, the Standing Committee had recommended that a timeline be fixed for the formation of the National Water Commission.[68]

Both the CWC and the CGWB largely employ engineers and hydrogeologists.[50] However, water management is an inter-disciplinary field, connecting geosciences, environmental sciences, and socio-economic sciences. The Committee recommended that professionals from these fields be included.[50] Training and capacity building programmes of these agencies should address water resource management holistically. This involves integrating ecological, environmental, and socio-economic dimensions of water management with technical training.[50] The Standing Committee (2022) had noted significant human resource shortages in the CGWB, and recommended that the vacancies be filled.[69] In 2020-21, 30% of posts were vacant.[70]

Both the Mihir Shah Committee and the Parliamentary Committee on Water Resources recommended that central agencies and state departments work together to conserve and manage groundwater.[50,57] The Standing Committee (2023) recommended that a body with representatives from states and various central Ministries/agencies be formed for this purpose.[57]

Pollution of water bodies

River pollution: The Central Pollution Control Board monitors and assesses the quality of river stretches across the country.[71] River stretches are classified into priority I to priority V, with priority I being the most polluted. In 2019-21, 817 out of 1,920 monitored river locations did not meet the required criteria for biological oxygen demand (more than 3 mg/litre). 311 river stretches (locations in a continuous sequence) were found to be polluted. This number was 351 in 2016-17.[71] However, in 2020 and 2021, due to the COVID-19 pandemic, fewer economic activities took place, and subsequently there was less release of effluents into rivers.

Groundwater contamination: Groundwater assessments in India have identified the presence of contaminants like fluoride, arsenic, nitrate, iron, and heavy metals beyond permissible limits.[56] Nitrate and phosphate pollution is mostly caused by human activity, and can be caused by excessive use of fertilisers, and domestic wastewater discharge.[72] The presence of arsenic, iron, uranium, etc., may be caused by geological factors. However, excessive extraction of groundwater can exacerbate these issues.[55]

Table 6: Presence of contaminants in groundwater across India

Contaminant	Number of districts affected	Number of States/UTs affected
Fluoride	263	20
Nitrate	443	23
Arsenic	118	20
Iron	356	25
Uranium	132	13

Source: Annual Ground Water Quality Report, 2024, Central Ground Water Board; 2025.

Implementation of laws to address pollution

Penalties to prevent and control water pollution have been provided in the Water (Prevention and Control of Pollution) Act, 1974, the Environment (Protection) Act, 1986, and the Water (Prevention and Control of Pollution) Cess Act, 1977.[73] These legislations penalise water pollution with fines ranging from Rs 10,000 to one lakh rupees, and imprisonment ranging from three months to seven years.[73] The Water Act was amended in 2024.[74] Imprisonment was removed as a punishment for discharging polluting matter into water bodies, and some other offences.[74] The penalty was increased from Rs 10,000 to Rs 15 lakh.[74] As per the National Crime Records Bureau, 78 cases were registered under the Air (Prevention and Control of Pollution) Act, 1981, and the Water Act, 1974.[75] In 2021, 55 cases were registered, whereas 589 cases were registered in 2020.[75]

Monitoring and data collection

The responsibility of monitoring water bodies and the quality of water is shared between the Department of Water Resources, the Central and State Pollution Control Boards, and the Central Ground Water Board. Under the National Water Quality Monitoring Programme (run by the Central and state Pollution Control Boards), there are 4,484 monitoring stations across the country, covering rivers, lakes, tanks, ponds, creeks, canals, drains, wells, and water treatment plants.[76] The CGWB also monitors groundwater levels and pollution through a network of 22,730 observation wells.[55] The Standing Committee on Water Resources (2023) had noted that both agencies had the same mandate.[55] It recommended that the CGWB primarily collect groundwater data, and share it with the CPCB.[55]

In 2016, the Mihir Shah Committee had also noted that several agencies were involved in data collection.[50] Physical data (eg. precipitation levels, water flow) and user data (eg. FHTCs under JJM) come under diverse categories like sanitation or irrigation, and are collected by different Ministries/agencies. The Standing Committee (2024) had noted that under JJM, some surveys were conducted without actually visiting households.[9] This led to faulty data reporting and exclusion of many households. Further, since water is a state subject, central government agencies must rely on states for regional or project level information.[50] Thus,

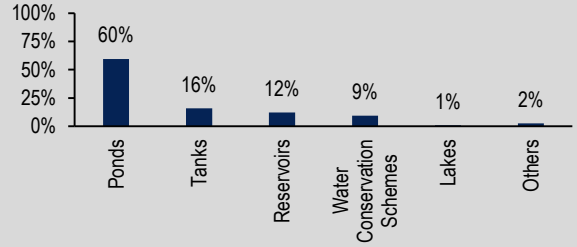
Ministries/agencies find it difficult to access data collected by other bodies.

The Committee recommended that the central government develop a framework to build an integrated and digitised National Water Resources Information System.[50] States must be given support, help to conduct ensure independent surveys, and ensure compliance with the framework.[50] In 2018, the India-Water Resource Information System was launched.[78] The Standing Committee on Water Resources (2023) noted a severe shortage of technical and non-technical staff in the field to implement the information system.[79] The Central Ground Water Board also created the India-Groundwater Resource Estimation System and the Aquifer Information and Management System.[80]

India's Water Bodies

A census of water bodies conducted by the Ministry of Jal Shakti identified more than 24 lakh water bodies in India.[77] 97% of these are in rural areas. 84% of water bodies are in use, the others remain unused due to siltation, construction, salinity, drying up, etc.[77] The most common use for water bodies is fishing, followed by irrigation, groundwater recharge, and domestic use.[77]

Figure 12: Ponds are the most common water body in India



Source: Water Body Census, 2023, Ministry of Jal Shakti; PRS.

Disaster Management

Flood Management

Out of India's 329 million hectares, about 49.82 (15%) hectares are prone to floods.[81,82] In 2024 alone, floods affected states including Andhra Pradesh, Bihar, Gujarat, Jharkhand, Karnataka, Maharashtra, Telangana, Uttar Pradesh, and West Bengal.[83] Floods are caused by factors including geography, heavy rainfall, snowmelt, and coastal storms.[82] Changing weather patterns due to climate change can also cause flash floods due to changes in the frequency and intensity of rainfall.[82] The severity of floods can be worsened by human activities like deforestation, rapid urbanisation, and poor agricultural practices.[82]

As per the Constitution, the management of floods and erosion falls under state jurisdiction.[84] The central government provides technical guidance and financial assistance.[84] The CWC is responsible for flood forecasting and warning.[85] The National Disaster Management Authority also lays down policies and guidelines for flood response and mitigation.[86] The Standing Committee on Water Resources (2022) recommended that a National Integrated Flood Management Group be set up.[87] This would comprise of central and state government ministers, and coordinate between all agencies responsible for flood management.[87]

The Mihir Shah Committee observed that the central focus of flood management in India has been on structural, or engineering solutions, like dams and embankments.[50] Further, poor maintenance and operation of these structures have caused flooding. The Committee recommended that non-structural measures like flood plain zoning, flood plain management, weather forecasting and warning, and disaster response and preparedness be prioritised.[50]

The flood forecasting network, under the CWC, covers 325 stations over 20 river systems where water levels are monitored.[85] Flood forecasts are issued to local authorities, state and central government, and agencies like the National Disaster Management Authority. In 2024, the PAC examined a CAG report auditing flood management programmes in India.[88] The PAC noted that a scientific assessment of flood prone areas, and flood forecasting has not been taken up in all states.[88] Telemetry stations (which collect automatic real time data) were non-functional in many cases.[88] Despite installing telemetry equipment, the CWC had also relied on manual data. This defeats the purpose of modernising, and delays flood forecasting, and dissemination of this information.[88] Timely information is necessary to mitigate flood impacts. The PAC also recommended that an Expert Committee comprised of environmentalists, geologists, and other scientists be constituted to prepare an action plan to enhance flood forecasting and management activities.[88]

The Flood Management and Border Areas Programme (FMBAP) was launched in 2017-18, for implementation up to 2020-21.[84] It has been extended till 2025-26 to take up works related to flood control, anti-erosion, and drainage development.[84] Up to August 2024, Rs 8,365 crore has been released as central assistance to states under this programme.[84] As of March 2024, 427 projects have been completed under this programme across states.[84] 35 projects, are ongoing, 16 of which are in Jammu and Kashmir.[84] The PAC (2024) observed a significant delay in implementing projects under the scheme.[88] It noted delays ranging from 10 months to 13 years in certain projects.[88] Further, as there are delays in approving detailed project reports, technical designs become obsolete by the time funds are released.[88] This scheme has been allocated Rs 450 crore for 2025-26.

Glacial Outburst

Climate change is increasing the melting rate of Himalayan glaciers.[89] This has created new glacial lakes, where water collects behind a moraine (an accumulation of ice, sand, pebbles, etc.).[90] A glacial outburst occurs when moraine dams break, and release water downstream. Floods caused by glacial outbursts release vast quantities of water in a short time.[90]

The Standing Committee on Water Resources (2023) has noted that there are many gaps in glacier monitoring and research.[91] No studies have been taken up to examine the loss of glacial volume in the Himalayas, changes in glacial lakes over time, or the

impact of atmospheric pollution on glaciers. The government informed the Committee that Rs 30 crore has been allocated towards glacial research from 2021-26.[91] The Committee also recommended that India have agreements with neighbouring Himalayan countries to share data on glacier changes.[91]

In August 2024, the Glacial Lake Outburst Flood Risk Mitigation Project was approved with a total outlay of Rs 150 crore.[92] The project aims to give four states (Arunachal Pradesh, Himachal Pradesh, Sikkim, and Uttarakhand) support for necessary glacial lake outburst flood mitigation measures.[92] Rs 135 crore will be sourced from the National Disaster Mitigation Fund, and states will be required to contribute the rest.[93] As of October 2024, Rs 10 crore has been allocated to Arunachal Pradesh and Sikkim under this scheme.[93]

Annexure

Table 7: Functionality of tap water connections in rural households (2021-22)

State/UT	% of households with FHTCs	% of households receiving adequate quantity of water	% of households with regular supply	% of households with potable water
A & N Islands	100%	48%	85%	90%
Andhra Pradesh	74%	92%	79%	90%
Arunachal Pradesh	100%	98%	85%	93%
Assam	81%	78%	73%	91%
Bihar	96%	97%	84%	94%
Chhattisgarh	80%	89%	85%	89%
D&NH and D&D	100%	89%	89%	100%
Goa	100%	97%	93%	90%
Gujarat	100%	87%	88%	89%
Haryana	100%	82%	83%	76%
Himachal Pradesh	100%	95%	87%	98%
Jammu & Kashmir	81%	84%	70%	86%
Jharkhand	55%	83%	70%	86%
Karnataka	83%	82%	84%	80%
Kerala	54%	97%	76%	53%
Ladakh	96%	78%	80%	97%
Lakshadweep	91%	-	-	-
Madhya Pradesh	67%	66%	67%	96%
Maharashtra	88%	68%	75%	81%
Manipur	80%	62%	57%	92%
Meghalaya	81%	94%	93%	87%
Mizoram	100%	66%	79%	94%
Nagaland	93%	68%	81%	93%
Odisha	76%	84%	69%	88%
Puducherry	100%	100%	99%	89%
Punjab	100%	96%	82%	94%
Rajasthan	55%	59%	66%	82%
Sikkim	91%	92%	89%	57%
Tamil Nadu	88%	94%	93%	97%
Telangana	100%	92%	93%	95%
Tripura	85%	96%	94%	44%
Uttar Pradesh	87%	88%	67%	91%
Uttarakhand	97%	93%	71%	92%
West Bengal	54%	97%	90%	76%

Note: Adequate quantity of water is defined as at least 55 litres per person per day. Water supply is regular if it is available daily, or as per a schedule for all 12 months of the year. Potability of water is determined by 15 parameters including pH, hardness, presence of chlorides, nitrates, coliform bacteria, etc.
Source: Functionality Assessment of Household Tap Connections – 2022; PRS.

Table 8: Financial progress under Jal Jeevan Mission for the year 2023-24 (in Rs crore)

State	Opening Balance (Central Share)	Central Allocation	Central Share Release	State Share Release	Total Expenditure	Unspent Amount (Central Share)
Andaman & Nicobar Islands	2	8	4	-	1	5
Andhra Pradesh	407	6,530	794	1,069	1,800	340
Arunachal Pradesh	311	1,057	771	153	1,195	25
Assam	2,447	10,352	6,204	957	8,737	781
Bihar	55	-	-	-	-	55
Chhattisgarh	274	4,486	2,886	3,072	5,266	521
Dadra & Nagar Haveli And Daman & Diu	-	-	-	-	-	-
Goa	1	11	11	17	23	0
Gujarat	1,089	2,983	2,237	3,219	5,054	948
Haryana	102	1,053	527	752	1,277	39
Himachal Pradesh	548	380	402	105	958	91
Jammu & Kashmir	904	9,611	3,267	406	3,875	661
Jharkhand	529	4,723	2,875	3,428	6,432	263
Karnataka	1,182	12,623	4,967	9,880	11,373	882
Kerala	901	1,342	671	1,481	2,914	106
Ladakh	281	477	131	-	347	65
Lakshadweep	9	40	20	-	-	29
Madhya Pradesh	1,060	10,298	5,420	6,465	12,779	91
Maharashtra	2,364	21,466	7,444	9,753	16,580	1,599
Manipur	164	111	-	21	138	45
Meghalaya	369	3,567	1,500	173	1,745	296
Mizoram	121	425	303	45	460	8
Nagaland	20	367	315	44	339	40
Odisha	817	2,109	2,109	2,814	4,870	484
Puducherry	5	15	1	1	7	0
Punjab	-	479	120	315	270	16
Rajasthan	3,433	3,020	250	4,376	6,803	784
Sikkim	79	635	252	32	349	12
Tamil Nadu	814	3,616	2,617	3,374	5,230	813
Telangana	26	-	-	-	-	26
Tripura	227	1,773	744	111	965	111
Uttar Pradesh	3,007	20,884	16,947	20,630	39,388	852
Uttarakhand	284	4,690	1,891	600	2,180	232
West Bengal	1,751	3,806	4,206	5,653	10,159	953
Total	**23,585**	**1,32,937**	**69,885**	**78,945**	**1,51,515**	**11,174**

Source: Jal Jeevan Mission Dashboard; PRS.

Table 9: Financial progress under Jal Jeevan Mission for the year 2024-25 (up to February 2025) (in Rs crore)

State	Opening Balance (Central Share)	Central Allocation	Central Share Release	State Share Release	Total Expenditure	Unspent Amount (Central Share)
Andaman & Nicobar Islands	5	3	-	-	-	5
Andhra Pradesh	340	2,521	-	775	756	47
Arunachal Pradesh	27	218	109	0	23	113
Assam	781	5,199	2,060	364	2,711	399
Bihar	55	-	-	-	-	55
Chhattisgarh	521	1,277	192	1,882	585	429
Dadra & Nagar Haveli And Daman & Diu	-	-	-	-	-	-
Goa	0	4	1	-	-	1
Gujarat	948	2,420	-	1,387	2,023	198
Haryana	39	462	-	237	207	20
Himachal Pradesh	91	917	137	20	170	74
Jammu & Kashmir	661	2,113	634	147	1,135	254
Jharkhand	263	2,114	-	295	397	149
Karnataka	882	3,804	571	6,082	4,070	750
Kerala	106	1,949	975	1,243	1,913	118
Ladakh	65	625	187	-	58	194
Lakshadweep	29	1	0	-	-	29
Madhya Pradesh	91	4,045	2,622	2,715	5,169	117
Maharashtra	1,599	5,353	1,606	2,678	4,262	1,196
Manipur	45	-	-	1	29	17
Meghalaya	297	654	291	56	504	137
Mizoram	8	45	14	10	19	9
Nagaland	40	40	12	5	51	6
Odisha	484	2,456	368	782	1,056	322
Puducherry	0	13	2	0	1	1
Punjab	16	645	50	279	49	63
Rajasthan	787	11,061	1,659	1,980	3,475	279
Sikkim	12	125	37	13	29	29
Tamil Nadu	813	2,439	732	2,801	2,557	269
Telangana	26	-	-	-	-	26
Tripura	111	737	316	46	379	92
Uttar Pradesh	852	12,622	6,311	9,392	15,736	182
Uttarakhand	233	1,017	508	-	296	445
West Bengal	953	5,050	2,525	3,968	6,261	531
Total	**11,180**	**69,927**	**21,919**	**37,158**	**53,921**	**6,558**

Source: Jal Jeevan Mission Dashboard; PRS.

Table 10: Some targets under ABY have been met, achievement is slow in others (as of February 2025)

	Item	Target	Achievement	% Achievement
Institutional Strengthening and	Trainings	2,13,126	1,10,679	52%
	Construction of Piezometers	5,549	6,401	115%
	Digital Water Level Recorder	6,192	6,095	98%
	Digital/Analog Water Level Indicators	7,410	7,406	100%
	Rain Gauge	7,158	7,143	100%
	Water Flow Meters	54,772	32,773	60%
	Water Quality Testing Kit	7,403	5,514	74%
Incentives	Public Disclosure of Groundwater Data	13,119	19,798	151%
	Water Security Plans	8,220	8,220	100%
	Financing of Water Security Plans	4,599	3,442	75%
	Adoption of practices for efficient water use	4,50,000	5,42,216	120%
	Improvement in rate of groundwater decline	229	47	21%

Source: ABY Dashboard, accessed on February 3, 2025; PRS.

Table 11: Stage of groundwater extraction in Indian states (as of 2024)

State/UT	Stage of Groundwater Extraction	State/UT	Stage of Groundwater Extraction	State/UT	Stage of Groundwater Extraction
Andaman and Nicobar Islands	2%	Jharkhand	31%	Odisha	48%
Andhra Pradesh	30%	Karnataka	68%	Puducherry	76%
Arunachal Pradesh	0.4%	Kerala	54%	Punjab	157%
Assam	13%	Ladakh	31%	Rajasthan	150%
Bihar	46%	Lakshadweep	61%	Sikkim	6%
Chhattisgarh	47%	Madhya Pradesh	58%	Tamil Nadu	74%
Dadra and Nagar Haveli and Daman and Diu	142%	Maharashtra	53%	Telangana	46%
Goa	23%	Manipur	8%	Tripura	9%
Gujarat	54%	Meghalaya	5%	Uttar Pradesh	70%
Haryana	136%	Mizoram	4%	Uttarakhand	54%
Himachal Pradesh	35%	Nagaland	5%	West Bengal	46%
Jammu and Kashmir	22%				

Source: National Compilation on Dynamic Ground Water Resources of India 2024, Central Ground Water Board; PRS.

Table 12: Polluted river stretches in India (2022)

State/UT	Polluted River Stretches	State/UT	Polluted River Stretches	State/UT	Polluted River Stretches
Andaman and Nicobar Islands	0	Jammu and Kashmir	8	Odisha	7
Andhra Pradesh	3	Jharkhand	9	Puducherry	3
Arunachal Pradesh	0	Karnataka	17	Punjab	5
Assam	10	Kerala	18	Rajasthan	14
Bihar	18	Ladakh	0	Sikkim	0
Chhattisgarh	6	Lakshadweep	0	Tamil Nadu	10
Dadra and Nagar Haveli and Daman and Diu	1	Madhya Pradesh	19	Telangana	9
Delhi	1	Maharashtra	55	Tripura	1
Goa	6	Manipur	13	Uttar Pradesh	17
Gujarat	13	Meghalaya	7	Uttarakhand	9
Haryana	3	Mizoram	3	West Bengal	13
Himachal Pradesh	9	Nagaland	4		

Source: Polluted River Stretches for Restoration of Water Quality – 2022, Central Pollution Control Board; PRS.

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