

# Composite Water Management Index 2.0

A National Tool for Water Management



सत्यमेव जयते

**NITI Aayog**

(National Institution for Transforming India)

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# NITI Aayog launched the Composite Water Index Report (CWMI) in July 2018, and is launching the 2<sup>nd</sup> edition this year

1. **First edition of CWMI Report** brought India's water challenges into spotlight to encourage effective water management among states through the principle of *competitive and cooperative federalism*

☞ It generated strong interest from key stakeholders in India's water ecosystem, and initiated discussions around how can states better manage their water resources

2. **NITI Aayog is publishing the 2<sup>nd</sup> edition of the Report to keep the momentum on management of water**

The 2<sup>nd</sup> edition includes:

- ☞ Analyses of states' performance on the Index across FY 15-16, FY 16-17, and FY 17-18
- ☞ Water brought to centre stage with the formation of Jal Shakti Ministry and with the launch of Jal Shakti Abhiyan

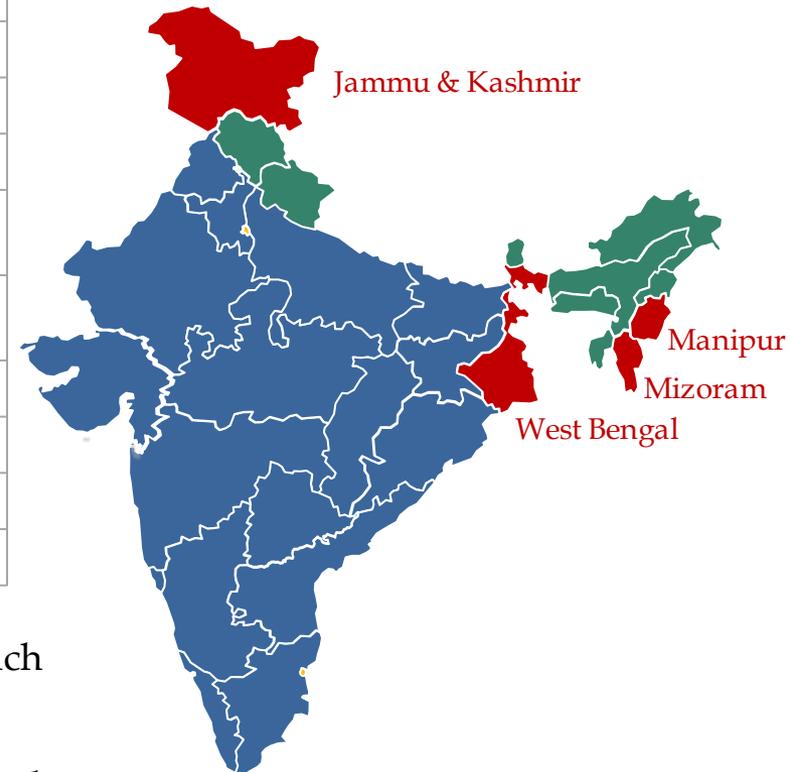


# The Index comprises of 9 themes, and covers 25 states and 2 UTs

## CWMI themes and weights

	Sectors	Weights
1	Source augmentation and restoration of waterbodies	5
2	Source augmentation (Groundwater)	15
3	Major and medium irrigation – Supply side management	15
4	Watershed development – Supply side management	10
5	Participatory irrigation practices – Demand side management	10
6	Sustainable on-farm water use practices – Demand side management	10
7	Rural drinking Water	10
8	Urban water supply & sanitation	10
9	Policy and governance	15
	<b>Total</b>	<b>100</b>

## Classification of states to account for different hydrological conditions and geographical area



- Non-Himalayan states
- North-Eastern & Himalayan states
- Union Territories
- No data available

- ❧ The nine themes are further sub-divided into 28 indicators which account for equal weightages within respective themes
- ❧ Groundwater augmentation, major and medium irrigation, and policy & governance remain themes with highest weightages – given the growing groundwater crisis, India’s low irrigation utilization, and the importance of effective policy frameworks

# Overall analysis: Promisingly, 80% states have improved their Index scores in the last three years

## Key findings

- ~80% of the **states** (19 out of 24) have **shown improvement** in their water management scores over the last 3 years, with average change in scores being +5.2 points
- Haryana's** score improved by ~26.21 points (largest improvement), due to higher scores on four themes—restoration of water bodies, watershed development, on-farm water use, and policy and governance
- Amongst the 9 themes, states have displayed **maximum improvement on the Policy and Governance**, with the theme median score rising by ~30% over the last three years
- Data discipline is also improving**, and incidents of states not reporting data have reduced by ~70% compared to last year\*
- Improved data reporting practices** have also contributed to improvement in states' Index scores, Haryana being the prime example
- High performing states have **retained top positions**

\* Does not include data reporting statistics for Arunachal Pradesh, Delhi and Puducherry's since they have been assessed on the indicator for the first time in FY 17-18

# *Indicator analysis: Improvement in Source Augmentation and Restoration of Water Bodies across states*

## **Indicator 1: Restoration of irrigation potential from identified water bodies**

Measures the area irrigated by restored water bodies as a proportion of the total area that can be irrigated by restoring all identified water bodies, including rivers, ponds, tanks, etc.

### **1-year change in indicator average score**



6.31 percentage points (13%)

*FY 16-17 score: 47.93%*

*FY 17-18 score: 54.24%*

### **Best-performing state**

Madhya Pradesh, Telangana, Tamil Nadu

*Score achieved: 100%*

### **Highest Improvement**

Uttarakhand

*1-year change in score: 89 percentage points*

**Indicator 3:** Measures the percentage of over-exploited units that have been mapped for recharging

**Indicator 4:** Measures over-exploited units covered with recharge infrastructure

## 1-year change in indicator average score

### Indicator 3

 1.13 percentage points (3%)  
FY 16-17 score: 37.39%  
FY 17-18 score: 38.52%

### Indicator 4

 3.66 percentage points (27%)  
FY 16-17 score: 13.53%  
FY 17-18 score: 17.19%

## Best-performing state

Andhra Pradesh, Gujarat, Tamil Nadu, Himachal Pradesh  
Score achieved: 100%

Andhra Pradesh  
Score achieved: 99%

## Highest Improvement

Madhya Pradesh  
1-year change in score: 46 percentage points

Tamil Nadu  
1-year change in score: 50 percentage points

# Indicator analysis: Mapping major and medium irrigation infrastructure

**Indicator 7:** Measures the % of (MMI) assets that have been assessed and identified for the IPC-IPU gap in a state

**Indicator 9:** Measures the % of the suitable length of canals and distribution networks that the states have lined

## 1-year change in indicator average score

**Indicator 7**  
↑ 11.03 percentage points (23%)  
FY 16-17 score: 48.43%  
FY 17-18 score: 59.46%

**Indicator 9**  
↑ 9.73 percentage points (23%)  
FY 16-17 score: 42.11%  
FY 17-18 score: 51.84%

### Best-performing state

Andhra Pradesh, Madhya Pradesh,  
Jharkhand, Punjab, Telangana, Goa,  
Tripura, Assam  
Score achieved: 100%

Uttar Pradesh  
Score achieved: 95%

### Highest Improvement

Bihar  
1-year change in score: 70 percentage  
points

Uttar Pradesh  
1-year change in score: 95 percentage  
points

## Indicator 22: Urban Population supplied with drinking water

Measures urban drinking water access as the percentage of urban population being supplied with drinking water

### 1-year change in indicator average score

↑ 10.99 percentage points (17%)

*FY 16-17 score: 63.67%*

*FY 17-18 score: 74.66%*

### Best-performing state

Madhya Pradesh, Gujarat, Goa,  
Himachal Pradesh, Uttarakhand

*Score achieved: 100%*

### Highest Improvement

Chhattisgarh

*1-year change in score: 14 percentage points*

# Indicator analysis: Higher investments in urban water and sanitation projects

## Indicator 23: Capacity installed to treat urban wastewater

Measures the ability of states to treat urban wastewater by examining the percentage of total urban wastewater that can be treated with the currently installed capacity

### 1-year change in indicator average score

 4.05 percentage points (10%)

*FY 16-17 score: 38.76%*

*17-18 score: 42.81%*

### Best-performing state

Haryana, Himachal Pradesh

*Score achieved: 100%*

### Highest Improvement

Rajasthan

*1-year change in score: 35 percentage points*

## Indicator 24: Percentage of wastewater treated

Measures the actual proportion of urban wastewater treated by the states

### 1-year change in indicator average score

1.83 percentage points (5%)



*FY 16-17 score: 33.18%*

*FY 17-18 score: 35.01%*

### Best-performing state

Haryana

*Score achieved: 100%*

### Highest Improvement

Telangana

*1-year change in score: 16 percentage points*

# Indicator analysis: States implementing water pricing policies and governance mechanisms

## Indicator 27: Percentage of urban households charged for water

Percentage of households being provided water supply and charged for water in the urban areas

### 1-year change in indicator average score

 8.47 percentage points (23%)

*FY 16-17 score: 37.21%*

*FY 17-18 score: 45.68%*

### Best-performing state

Goa, Puducherry

*Score achieved: 100%*

### Highest Improvement

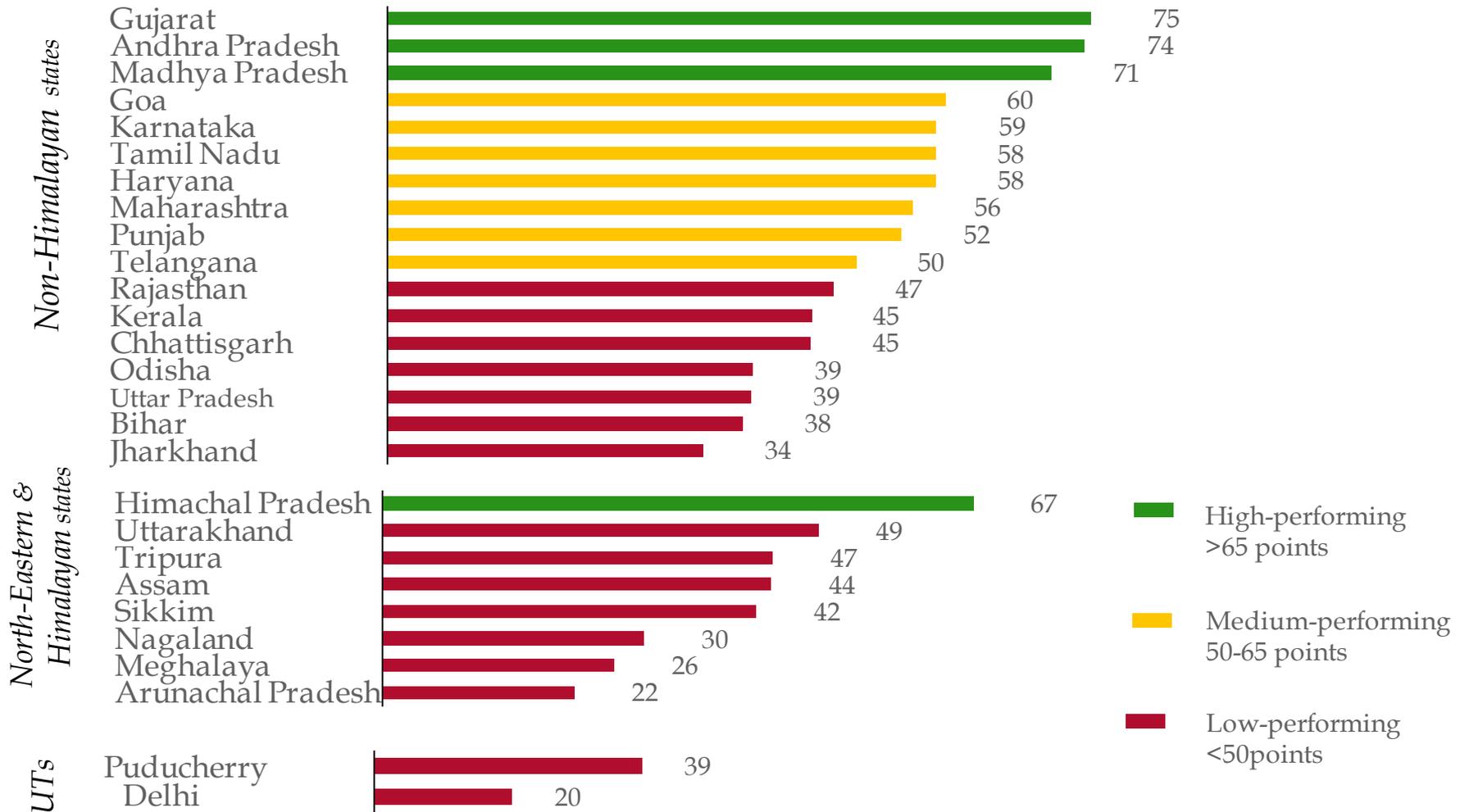
Haryana

*1-year change in score: 70 percentage points*

# Despite the improvement, most states need to show substantial improvements in water management practices

## State categorization based on CWMI scores

CWMI scores (FY 17-18)



# Ranking of the Non-Himalayan States over the years

## Non-Himalayan states

	FY 17-18	FY 16-17	FY 15-16	1-year trend
Gujarat	1	1	1	 No change
Andhra Pradesh	2	3	2	 1 position
Madhya Pradesh	3	2	3	 1 position
Goa	4	11	10	 7 positions
Karnataka	5	4	5	 1 position
Tamil Nadu	6	7	6	 1 position
Haryana	7	16	16	 9 positions
Maharashtra	8	5	4	 3 positions
Punjab	9	6	7	 3 positions
Telangana	10	8	11	 2 positions
Rajasthan	11	10	13	 1 position
Kerala	12	12	12	 No change
Chhattisgarh	13	9	8	 4 positions
Odisha	14	13	9	 1 position
Uttar Pradesh	15	15	14	 No change
Bihar	16	14	15	 2 positions
Jharkhand	17	17	17	 No change

# Ranking of the Himalayan States over the years

## North-Eastern and Himalayan states

	FY 17-18	FY 16-17	FY 15-16	1-year trend
Himachal Pradesh	1	2	1	 1 position
Uttarakhand	2	6	4	 4 positions
Tripura	3	1	2	 2 positions
Assam	4	4	5	 No change
Sikkim	5	3	3	 2 positions
Nagaland	6	5	6	 1 position
Meghalaya	7	7	7	 No change
Arunachal Pradesh	8	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>

# *Despite the improvement, most states need to show substantial improvements in water management practices*

## **Key findings**

- ❧ **16 out of the 27** states still score less than 50 points on the Index (out of 100), and fall in the low-performing category.
  - These states collectively account for **~48%** of the **population**, **~40%** of **agricultural produce**, and **~35%** of **economic output** of India
- ❧ **Jharkhand, Uttar Pradesh, Odisha, Bihar, Nagaland, and Meghalaya** still score **less than 40 points**, and the average improvement in low-performing category over the last three years stands at 3.1 points, lower than 5.2-point average improvement observed across states
- ❧ Uttar Pradesh, Rajasthan, Kerala, and Delhi, **4 of the top 10 contributors to India's economic output**, have scores ranging from 20 points to 47 points
- ❧ **None of the top 10 agricultural producers** in India, except Gujarat and Madhya Pradesh, **score more than 60 points** on the CWMI
  - This is concerning given that assessment on almost half of the Index scores is directly linked to water management in agriculture



Thank You