

# SDG Indicator 6.5.1: Survey

Degree of integrated water resources management (IWRM) implementation

Reporting year: 2023

<b>Country</b>	<b>India</b>
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You are invited to insert here the logo(s) of the government authority (ies)



responsible for coordinating

the survey completion process

## Submission Form

Date of submission	09-04-2024
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## National SDG 6.5.1 Focal Point information

Name, Job title	<b>Basin Planning &amp; Management Organization</b>
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Organisation	<b>Central Water Commission (CWC), Ministry of Jal Shakti, Government of India &amp; Focal Point SDG 6.5.1 IWRM</b>
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Are you the national Focal Point for any other SDG indicator (apart from 6.5.1)? **If yes, please insert 'X' for all that apply:**

6.1.1  6.2.1  6.3.1  6.3.2  6.4.1  6.4.2  6.5.2  6.6.1  6.a.1  6.b.1  Other SDG indicator(s) (please specify here):

## SDG 6.5.1 in-country data collection and reporting process overview

Were other institutions/stakeholders involved and consulted in the reporting process for this indicator?

**Yes, the other institutions/stakeholders were involved and consulted in the reporting process**

If yes, please indicate the mode(s) of consultation (please provide further details in Annex C):

Phone calls  Email exchanges  In-person meetings  Dedicated stakeholder workshop(s)  Other (please specify): **Hybrid Mode**

## Contact person regarding further questions/clarifications relating to this submission

SDG 6.5.1 Focal Point listed above  **Mr. Ashok Kumar Kharya, Chief Engineer, Basin Planning & Management Organization**

## Part 1 – Introduction

This is the official survey for country reporting on Sustainable Development Goal (SDG) indicator 6.5.1: “Degree of integrated water resources management (IWRM) implementation”. The indicator is measured on a scale of 0 – 100, calculated based on scores from approximately 30 questions in this survey, covering different aspects of IWRM. Indicator 6.5.1 measures progress towards target 6.5: “By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate”. The target supports the equitable and efficient use of water resources, which is essential for social and economic development, as well as environmental sustainability. The actions to achieve target 6.5 directly underpin the other water-related targets within SDG-6: “Ensure availability and sustainable management of water and sanitation for all”. Further guidance on completing this survey is provided in the SDG indicator 6.5.1 [Monitoring Guide](#). Both this Survey and the Monitoring Guide are available in six UN languages (Arabic, Chinese, English, French, Russian and Spanish), and Portuguese, available on the [IWRM Data Portal](#).

### About the survey

The primary purpose of the survey is global monitoring and reporting on indicator 6.5.1. It has been designed to also be useful as a simple diagnostic tool for countries to identify strengths and weaknesses of different aspects of IWRM implementation.

The survey contains four sections, each covering a key dimension of IWRM (see definition in Annex A: Glossary):

- 1. Enabling environment:** Policies, laws and plans to support IWRM implementation.
- 2. Institutions and participation:** The range and roles of political, social, economic and administrative institutions and other stakeholder groups that help to support implementation.
- 3. Management instruments:** The tools and activities that enable decision-makers and users to make rational and informed choices between alternative actions.
- 4. Financing:** Budgeting and financing for water resources development and management.

Each section has two sub-sections covering the “National” and “Other” levels. “Other” levels include sub-national, basin, local and transboundary (see Annex A - Glossary). For most “other level” questions, the score should reflect the situation in most of the basins/aquifers/jurisdictions, unless specified otherwise. For the transboundary level questions, the score should reflect the situation in the ‘most important’ transboundary basins / aquifers, which should ideally be coordinated with reporting under [SDG indicator 6.5.2 on transboundary cooperation](#). It is recognised that water resources management in federal countries may be more complex due to responsibilities at different administrative levels. You may further explain any specific circumstances relating to the level of decentralization of water resources management and responsibility in your country (e.g. federal countries and other large countries) in the free text responses (see next section).

## How to complete the survey

**Scoring:** For each question, enter a score between 0 and 100, in increments of 10. It is not possible to omit questions<sup>1</sup>. The score selection is guided by descriptive text for six thresholds, which are specific to each question. If a country judges the degree of implementation to be between two thresholds, the increment of 10 between the two thresholds may be selected. The potential scores that may be given for each question are: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100.

The thresholds for each question are defined sequentially. This means that the criteria for all lower levels of implementation must be met for a country to respond that it has reached a specific level of implementation for each question. **Bold** text in the thresholds helps the reader differentiate between thresholds.

**The thresholds are indicative and are meant to guide countries in choosing the most appropriate responses, i.e. selected responses should be a reasonable match, but do not have to be a perfect match, as each country is unique.**

Instructions on how to calculate the overall indicator 6.5.1 score are provided in section 5.

**Narrative responses:** for each question, there are two free-text fields: “Status and progress” and “Way forward”. The type of information that countries may find useful to consider includes:

**Status and progress:** e.g. refer to relevant activities/initiatives/laws/policies/plans/strategies or similar; comment on the degree of implementation as it relates to the threshold descriptions; barriers/enablers; and reflect on progress (e.g. between reporting rounds: baseline in 2017, 2<sup>nd</sup> round in 2020, and current round in 2023). Where possible, provide a brief explanation of why the score is different to the previous round, including reflecting on recent rates of implementation of relevant activities.

**Way forward:** e.g. already planned or recommended activities to advance implementation of that aspect of IWRM, including identifying barriers and enablers. Include draft interim target-setting for each question where appropriate (e.g. consider actions or recommendations for making progress). Any actions or recommendations provided in this field are neither binding nor comprehensive, but may be used as inputs to country planning processes.

Specific additional guidance is provided in each field for each question. Experience from previous reporting shows that the free-text responses to each question are important, as they: increase the robustness, transparency and objectivity of the indicator scores; facilitate stakeholder consensus on each question score; help countries track progress between reporting periods; and help countries to analyse what is required to reach the next threshold.

In each field, enter the narrative response by replacing “xxx”. It is recommended that the guidance text is left in the free-text fields during the stakeholder consultation process, but that this guidance text is deleted before final submission.

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<sup>1</sup>If the country judges the question to be ‘not applicable’, you can enter ‘n/a’. However, the survey has been designed to be relevant to all countries, and an ‘n/a’ response is unlikely.

**Climate change considerations:** For five questions (1.1c, 2.1b, 2.1e, 3.1e, and 4.1b), there is an additional free text field to provide information on how relevant aspects of water resources management and climate change adaptation/mitigation are coordinated. Recognising that climate change cuts across all aspects of water resources management, considerations of climate change are also encouraged in the free text fields of all questions.

### Progress and differences since previous reporting rounds

172 countries established a baseline for indicator 6.5.1 in 2017/18, with 171 countries reporting in the second round in 2020. This is the third round of data collection. Where available, countries should refer to the previous survey responses, available here: <http://iwrmdataportal.unepdhi.org/country-reports>. Countries are encouraged to consider progress, or lack of progress, since previous rounds, in the 'Status and progress' fields, and give reasoning for differences in scores. Countries are welcome to use and update free text responses used in previous surveys. For Word versions of previous surveys, please contact the **IWRM Help Desk: [iwrmsdg651@un.org](mailto:iwrmsdg651@un.org)**.

The current survey version is highly comparable, though not identical, to previous versions. Some minor amendments have been made following a review process, and noteworthy changes are described in footnotes for relevant questions. A summary of changes is provided in the SDG indicator [6.5.1 Monitoring Guide](#).

### Data collection and submission

A broad stakeholder engagement process is encouraged to complete the survey. This helps to increase stakeholder participation and ownership of water management and decision-making processes, and makes the completed survey a more robust and useful diagnostic tool for further discussions and planning. SDG 6.5.1 Focal Points are asked to fill in the Reporting Process Form in Annex C to increase transparency and stakeholder confidence in the results at all levels. The extent and mode of stakeholder engagement is up to each country, and further guidance is provided in the [Monitoring Guide](#). Coordination with Focal Points for other SDG indicators is encouraged where feasible and relevant.<sup>2</sup>

The Focal Point is responsible for the Quality Assurance and formal submission of the completed survey to the UN Environment Programme (UNEP), as described in section 6 of the [Monitoring Guide](#).

Upon request, the SDG 6.5.1 IWRM Help Desk, hosted by UNEP ([iwrmsdg651@un.org](mailto:iwrmsdg651@un.org)) will provide support to Focal Points and colleagues on matters such as interpretation of questions and thresholds, the appropriate level of stakeholder engagement in countries, and submitting the final indicator scores.

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<sup>2</sup>Monitoring of 6.5.1 is being done as part of the UN-Water initiative on integrated monitoring of SDG 6 ([IMI-SDG6](#)). Support is provided in collaboration with UN-Water members and partners. For a list of questions that relate to other SDG indicators (mainly in section 3), please see Annex 3 of the Monitoring Guide.

## Part 2 – The survey

### 1 Enabling environment

This section covers the enabling environment, which is about creating the conditions that help to support the implementation of IWRM. It includes the most typical policy, legal and planning tools for IWRM<sup>3</sup>. Please refer to the glossary for any terms that may require further explanation. **Please take note of all footnotes as they contain important information and clarification of terms used in the questions and thresholds.**

Enter your score, **in increments of 10**, from 0-100, or “n/a” (not applicable), in the yellow cell immediately below each question. Enter free text in the “Status and progress” and “Way forward” fields below each question. Suggestions for the type of information that may be useful are provided. You may also provide further information you think is relevant, or links to further documentation.

1. Enabling Environment		Degree of implementation (0 – 100)					
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>1.1 What is the status of policies, laws and plans to support Integrated Water Resources Management (IWRM) at the national level?</b>							
a. National water resources <b>policy</b> , or similar.	Development <b>not started</b> or not progressing.	<b>Exists</b> , but not based on IWRM.	Based on IWRM, <b>approved</b> by government and starting to be used by authorities to guide work.	Based on IWRM, being <b>used</b> by the majority of relevant authorities to guide work.	Policy objectives consistently <b>achieved</b> .	Objectives consistently achieved, and periodically <b>reviewed</b> and revised.	
Score	<b>80</b>	<p>Status and progress:</p> <ul style="list-style-type: none"> <li>India has National Water Policy which is periodically reviewed and revised for meeting the upcoming issues and challenges in water sector. The First National Water Policy was adopted in September, 1987 and subsequently reviewed in 2002 and later in 2012. The National Water Policy-2012 (<a href="https://nwm.gov.in/sites/default/files/national%20water%20policy%202012_0.pdf">https://nwm.gov.in/sites/default/files/national%20water%20policy%202012_0.pdf</a>) exists as per IWRM principles. In view of the latest challenges in water sector, revision of NWP-2012 has been envisaged by Department of Water Resources, River Development &amp; Ganga Rejuvenation, Ministry of Jal Shakti, Government of India and a Committee with high level Experts and Consultants has been constituted to draft the revised National Water Policy. <a href="https://pib.gov.in/PressReleasePage.aspx?PRID=1607166">https://pib.gov.in/PressReleasePage.aspx?PRID=1607166</a></li> <li>National Water Policy 2012 states that planning, development and management of water resources need to be governed by common integrated perspective considering local, regional, State and national context, having an environmentally sound basis, keeping in view the human, social and economic needs. The National Water Polices have been instrumental in formulation of various State Water Policies, plans and legislations. It is further mentioned that equitable access to water for all and its fair pricing, for drinking and other uses; such as sanitation, agriculture and industrial, should be arrived at through independent statutory Water Regulatory Authority set-up by each State after wide ranging consultation with all stakeholders. State Governments like Maharashtra, Arunachal Pradesh, Uttar Pradesh, Madhya Pradesh, Gujarat etc. have constituted Water Resources Regulatory Authorities.</li> </ul>					

<sup>3</sup>For examples of good practices of policies, laws and plans, please see the tools, case studies, and resources in the Global Water Partnership (GWP) [IWRM ToolBox](#).

- Further, Central Water Commission (CWC) has been working in the field of IWRM by using state of the art technology and competency and by coordinating with all stakeholders. CWC has also prepared guidelines for Integrated Water Resources Management and Development in 2016. While formulating IWRM guidelines, due consideration has been given on important aspects like Participation and Coordination Mechanisms, Fostering Information Sharing and Exchange, Capacity Development, Legal Frameworks and Regulation, Water Allocation Plans, Adequate Investment, Financial Stability and Sustainable Cost-recovery, Natural Resources Present in the Basin, Comprehensive Monitoring and Evaluation of the River Basin etc. It aims to address various issues in different sectors viz. domestic, irrigation, flood control, navigation, hydropower, ecological etc.

**Way forward:**

Revision of the National Water Policy-2012 has been envisaged by the Ministry of Jal Shakti, GoI and a Committee of Experts, professionals, academicians etc. has been constituted to draft the revised NWP. The Committee is undertaking a process of wide-ranging consultation to ensure that the process of drafting the policy is as inclusive as possible and best possible policy emerges from this process of co-creation.

<b>b. National water resources law(s).</b>	Development <b>not started</b> or not progressing.	<b>Exists</b> , but not based on IWRM.	Based on IWRM, <b>approved</b> by government and starting to be applied by authorities.	Based on IWRM, <b>being applied</b> by the majority of relevant authorities.	Based on IWRM and all laws are being <b>applied</b> across the country.	Based on IWRM and all laws are <b>enforced</b> across the country, and all people and organizations are held accountable.
Score	<b>70</b>					

**Status and progress:**

There are several Acts at National Level for development and management of water resources such as River Boards Act-1956, Inter-State River Water Disputes Act-1956, Dam Safety Act, Bansagar Control Act, Betwa River Board Act, Brahmaputra Board Act, Water (Prevention & Control) Act, 1974 and the Environment (Protection) Act, 1986 to prevent and control pollution in water etc. (<https://jalshakti-dowr.gov.in/acts/>).

**Way forward:**

Evolution of Acts/laws is a continuous process and taken up as per requirement.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>c. National integrated water resources management (IWRM) plans, or similar.</b>	Development <b>not started</b> or not progressing.	<b>Being prepared</b> , but not approved by government.	<b>Approved</b> by government and starting to be implemented by authorities.	Being <b>implemented</b> by the majority of relevant authorities.	Plan objectives consistently <b>achieved</b> .	Objectives consistently achieved, and periodically <b>reviewed</b> and revised.
Score	<b>70</b>					

**Status and progress:**

- River Basin Plans have been developed from time to time for various basins like Ganga Basin Plan, Brahmaputra Master Plan, Tapi River Basin Management Plan, Brahmani-Baitarni IWRM Plan, Water Sharing and Management arrangements among the co-basin states of the Narmada, Cauvery, Godavari, Tungabhadra, Damodar, Betwa, Bansagar etc.
- Jal Jeevan Mission, is envisioned to provide safe and adequate drinking water through individual household tap connections by 2024 to all households in rural India. The programme will also implement source sustainability measures as mandatory elements, such as recharge and reuse through grey water management, water conservation, rain water harvesting. The Jal Jeevan Mission will be based on a community approach to water and will include extensive Information, Education and communication as a key component of the mission. The Jal Jeevan Mission will be based on a community approach to water and will include extensive Information, Education and communication as a key component of the mission. JJM looks to create a Jan Andolan for water, thereby making it everyone's priority.
- Significant progress has been made in the country since the launch of Jal Jeevan Mission, towards enhancing access to tap water to rural households. As on 07.12.2023, out of 19.24 Crore rural households in the country, approximately 13.76 Crore (71.51%) households are reported to have tap water supply in their homes.
- Ministry of Jal Shakti has taken up a nation-wide campaign "Jal Shakti Abhiyan: Catch the Rain" (JSA:CTR) focusing on saving and conserving rainwater with the theme "Source sustainability for drinking water" from 04 March 2023 to 30 November 2023 in the pre-monsoon and monsoon periods of 2023, covering both urban and rural areas of all the

districts in the country to nudge the states and all stakeholders to create Rain Water Harvesting Structures (RWHS) suitable to the climatic conditions and sub-soil strata, with people's active participation.

- AMRUT Mission 2.0 was launched in October, 2021 for a period of 5 years (2021-2026) with an outlay of INR 2,99,000 Crore (Including Centre share) is a step towards Self Reliant India and self-sustainable through circular economy of water. This is a major step toward IWRM in India up to grass-root level.
- Water Supply and Sanitation
  - It targets universal coverage of water supply by providing Tap connections in all the 4378 statutory towns and 100% coverage of households sewerage/septage management to 500 Indian cities.
  - Storm Water Drainage to reduce flooding.
  - Parking & Open Spaces and recreation centres for ladies & children with mandatory Rainwater Harvesting & Ground Water Recharge system for increasing greenery.
  - 20% water demand to be met through recycled water and rejuvenation of 24.20 lakh water bodies in the country (As per First Census Report in April, 2023) including natural and man-made water bodies like ponds, tanks, lakes and more and also data on encroachment of water bodies.

**Climate change considerations:** The water resources situation, its development, management and availability vary considerably from basin to basin. Many of the identified strategies/actions to achieve the goals of the National Water Mission are required to be taken by the State Governments/Union Territories. In this context, the State Specific Action Plans for Water Sector aligned with the State Action Plan on Climate Change are being formulated by the States under the National Action Plan for Climate Change (NAPCC) which would give the holistic roadmap to achieve the desired goals of Integrated Water Resource Management.

**Way forward:**

Formulation of River Basin Plans is exhaustive, consultative and iterative process which is taken up as per requirement.

1.2 What is the status of policies, laws and plans to support IWRM at other levels?							
		Degree of implementation (0 – 100)					
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>a. Sub-national<sup>4</sup> water resources policies or similar.</b>		Development <b>not started</b> or delayed in most sub-national jurisdictions.	<b>Existing</b> most jurisdictions, but not necessarily based on IWRM.	Based on IWRM, <b>approved</b> by the majority of authorities and starting to be used to guide work.	Based on IWRM, being <b>used</b> by the majority of relevant authorities to guide work.	Based on IWRM and policy objectives consistently <b>achieved</b> by a majority of authorities.	Based on IWRM and objectives consistently achieved by all authorities, and periodically <b>reviewed</b> and revised.
Score	<b>70</b>						
<b>Status and progress:</b> 16 States in the country (covering very large geographical area) have their respective State Water Policies in line with the National Water Policy formulated on the principles of IWRM and other than aforesaid 16 States also follow the principles of IWRM as well as NWP. Further, many States have Water and Land Management Institutes (WALMIs), which promote the advancement and scientific knowledge and provide capacity building of the various stakeholders in integrated manner. State Governments like Maharashtra, Arunachal Pradesh, Uttar Pradesh, Madhya Pradesh, Gujarat etc. have constituted Water Resources Regulatory Authorities.							
<b>Way forward:</b> Though, rest of States follow IWRM principles and NWP, still they are being sensitized and are in process of various stages for formulating and adopting Water Policies.							
<b>b. Basin/aquifer management plans<sup>5</sup> or similar, based on IWRM.</b>		Development <b>not started</b> or delayed in most basins/aquifers of national importance.	<b>Being prepared</b> for most basins/aquifers.	<b>Approved</b> in the majority of basins/aquifers and starting to be used by authorities.	Being <b>implemented</b> in the majority of basins/aquifers.	Plan objectives consistently <b>achieved</b> in majority of basins/aquifers.	Objectives consistently achieved in all basins/aquifers, and periodically <b>reviewed</b> and revised.
Score	<b>70</b>						
<b>Status and progress:</b> <ul style="list-style-type: none"> <li>Water is State Subject as per the Constitution of India. States have their own specific Acts/ laws related to management of Water Resources. Some of the states have already made institutional arrangements specific to their river basins/ sub-basins which have/ are in the process of preparing and managing their water resources as per IWRM.</li> <li>National Aquifer Mapping and Management (NAQUIM) Program is being implemented by the Central Ground Water Board (CGWB), Government of India in coordination with the State Ground Water Boards and related organisations throughout the country. Aquifer Maps and Aquifer Management Plans are prepared and shared with the State Governments and stakeholders even at grass-root levels. All the mappable area of 25 lakh Sq. Kms. has already been mapped under NAQUIM, till April, 2023. Many of the States/UTs have initiated action on the recommendations of the NAQUIM Program in their respective States/UTs. Water management plans have also been</li> </ul>							

<sup>4</sup>Sub-national includes jurisdictions not at national level, such as: states, provinces, prefectures, counties, councils, regions, or departments. In cases where there are no explicit sub-national policies, please answer this question by considering how national policies are being implemented at sub-national levels. Responses should consider the highest, non-national level(s) as appropriate to the country. In the status description, please explain which level(s) are included in the response.

<sup>5</sup> At the basin/aquifer level, please include only the most important river basins, lake basins and aquifers for water supply or other reasons. This question only refers to these basins/aquifers. These basins/aquifers are likely to cross administrative borders, including state/provincial borders for federal countries. The basins may also cross national borders, but this question refers to management of the portions of basins within each country. Question 1.2c refers specifically to transboundary arrangements for basins/aquifers shared by countries.



prepared by various agencies.

- Under NAQUIM-2, the Management Plans prepared are to be further narrowed down to Block level in the scale of 1:10,000 so that the Management Plans can be designed and implemented in an effective way.

**Way forward:**

Further intensification of the water plans up to village level is also under process through various schemes as well as agencies.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>c. Arrangements for transboundary water management.</b> <sup>6</sup>	Development <b>not started</b> or not progressing.	<b>Being prepared</b> or negotiated.	Arrangements are <b>adopted</b> .	Arrangements' provisions are <b>partly implemented</b> .	Arrangements' provisions are <b>mostly implemented</b> .	The arrangements' provisions are <b>fully implemented</b> .
Score	<b>100</b>					
<p><b>Status and progress:</b></p> <ul style="list-style-type: none"> <li>• Arrangements for Trans-boundary Water Management are fully implemented.</li> <li>• Trans-boundary cooperation on water resources is crucial for India and its neighbouring countries due to their shared river basins for management of water scarcity, prevention of conflicts, and promotion of sustainable development in the region. The various trans-boundary water cooperation agreements between India and its neighbours include: <ul style="list-style-type: none"> <li>➤ <b>Indus Water Treaty (Pakistan):</b> The Indus Waters Treaty (1960) governs the sharing of the Indus River's waters between India and Pakistan. The Treaty divided the six major rivers of the basin between the two countries.</li> <li>➤ <b>Ganges Water Sharing Treaty (Bangladesh):</b> The Joint Rivers Commission of India and Bangladesh was constituted in the year 1972 as a bilateral mechanism to address issues of mutual interest on common / border / Trans-boundary Rivers. It was established with a view to maintain liaison in order to ensure the most effective joint effort in maximizing the benefits from common river systems. The JRC is headed by Water Resources Ministers of both the countries. Further, the Ganges Water Sharing Treaty (1996) between India and Bangladesh aims to ensure an equitable distribution of the Ganges' waters.</li> <li>➤ <b>Mahakali Treaty (Nepal):</b> The Mahakali Treaty (1996) outlines water-sharing arrangements for the river's utilization and includes provisions for hydropower development and flood management.</li> </ul> </li> <li>• India has made efforts to engage with its neighbours through bilateral discussions, agreements, and regional forums to promote trans-boundary water cooperation. However, ongoing negotiations, mutual understanding, and continuous dialogue are essential to ensure sustainable water management and avoid conflicts in the region</li> <li>• One of the important areas of cooperation is sharing the flood data from Bhutan, from Nepal, to Bangladesh and to Pakistan on a regular basis under various bilateral agreements.</li> </ul>						
<p><b>Way forward:</b></p> <p>Bilateral arrangements with the neighbouring countries are reviewed periodically as per prescribed schedule.</p>						

<sup>6</sup> For 'transboundary' definition, see Annex A. All transboundary level questions should reflect the situation in most of the 'most important' transboundary basins/aquifers, which should be listed in the 'status and progress' field. An 'arrangement' should be a formal commitment, and may be referred to as a bilateral or multilateral agreement, treaty, convention, protocol, joint declaration, memorandum of understanding, or other arrangement between riparian countries on the management of a transboundary basin/aquifer. Arrangements may be interstate, intergovernmental, inter-ministerial, interagency or between regional authorities. They may also be entered into by sub-national entities.

<b>d. Sub-national water resources regulations</b> <sup>7</sup> (laws, decrees, ordinances or similar). <sup>8</sup>	Development <b>not started</b> or delayed in most sub-national jurisdictions.	<b>Exist</b> in most jurisdictions, but not necessarily based on IWRM.	Based on IWRM, <b>approved</b> in most jurisdictions, and starting to be applied by authorities in some jurisdictions.	Based on IWRM, <b>some regulations being applied</b> in the majority of jurisdictions.	Based on IWRM and <b>all regulations being applied</b> in the majority of jurisdictions.	Based on IWRM and all regulations being applied and <b>enforced</b> in all jurisdictions, and all people and organizations are held accountable.
Score	<b>70</b>					
<b>Status and progress:</b> Water is State Subject as per the Constitution of India. States have their own specific Acts/ laws related to management of Water Resources. Some of the states have already made institutional arrangements specific to their river basins/ sub-basins which have/ are in the process of preparing and managing their water resources as per IWRM. Several States have water regulatory authorities and all the States have several guidelines/regulations in respect of managing their water resources.						
<b>Way forward:</b> In view of climate change, suitable actions would be required for water resources management.						

<sup>7</sup>Sub-national includes jurisdictions not at national level, such as: states, provinces, prefectures, counties, councils, regions, or departments. In cases where there are no explicit sub-national regulations, please answer this question by considering how national regulations are being implemented at sub-national levels. Responses should consider the highest, non-national level(s) as appropriate to the country. In the status description, please explain which level(s) are included in the response.

<sup>8</sup> This question has replaced question 1.2d from the baseline survey instrument, which was for federal countries only.

## 2 Institutions and participation

This section is about the range and roles of political, social, economic and administrative institutions that support the implementation of IWRM. It includes institutional capacity and effectiveness, cross-sector coordination, stakeholder participation and gender mainstreaming. The 2030 Agenda stresses the importance of partnerships that will require public participation and creating synergies with the private sector.

**Please take note of all footnotes as they contain important information and clarification of terms used in the questions and thresholds.** Please refer to the glossary for any terms that may require further explanation.

Enter your score, **in increments of 10**, from 0-100, or “n/a” (not applicable), in the yellow cell immediately below each question. Enter free text in the “Status and progress” and “Way forward” fields below each question. This will help achieve agreement among different stakeholders in the country, as well as help monitor progress over time. Suggestions for the type of information that may be useful are provided. You may also provide further information you think is relevant, or links to further documentation.

2. Institutions and Participation							
		Degree of implementation (0 – 100)					
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
2.1 What is the status of institutions for IWRM implementation at the national level?							
a. National <b>government authorities</b> <sup>9</sup> for leading IWRM implementation.		No dedicated government authorities for water resources management.	Authorities <b>exist</b> , with clear mandate to lead water resources management.	Authorities have clear roles and responsibilities to lead IWRM implementation, and the capacity <sup>10</sup> to effectively lead IWRM plan <b>formulation</b> .	Authorities have the capacity to effectively lead IWRM plan <b>implementation</b> .	Authorities have the capacity to effectively lead periodic monitoring and <b>evaluation</b> of the IWRM plan(s).	Authorities have the capacity to effectively lead periodic IWRM plan <b>revision</b> .
Score	90						
<b>Status and progress:</b> <ul style="list-style-type: none"> <li>Two major ministries (Ministry of Water Resources, River Development and Ganga Rejuvenation and Ministry of Drinking Water and Sanitation) which were dealing with water at national level were brought under the one ministry namely Ministry of Jal Shakti in 2019. Other departments like National River Conservation Department and National Mission for Clean Ganga were also brought under the Ministry of Jal Shakti from Ministry of Environment, Forests and Climate Change. These are the major initiatives by the Government of India for IWRM at institutional level.</li> <li>The Government of India has set-up the National Water Resources Council (NWRC) under the Chairmanship of Prime Minister of India created an Apex Body to evolve National Policies for development and use of water resources keeping in view the National Perspective as well as States and Regional needs. Union Minister of Jal Shakti, Government of</li> </ul>							

<sup>9</sup>‘Government authorities’ could be a ministry or ministries, or other organizations/institutions/agencies/bodies with a mandate and funding from government.

<sup>10</sup>‘Capacity’ in this context is that the responsible authorities should have the required knowledge and technical skills, including planning, rule-making, project management, finance, budgeting, data collection and monitoring, risk/conflict management and evaluation. Beyond having the technical capacity, authorities should also have the financial capacity to actually be leading the implementation of these activities.

India acts as the Vice-Chairman of the Council and Members of the Councils consist of Ministers of State for Jal Shakti, concerned Union Ministers/Ministries of State, Chief Ministers of all States and Lieutenant Governors/Administrations of Union Territories (UTs). The NWRC deliberates and finalizes the National Water Policy and reviews it from time to time.

**Way forward:**

A lot of progress has already been made for integrating the organisations as per IWRM principles at National level. Further, it is a dynamic process and taken up as per need.

		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>b. Coordination between national government authorities representing different sectors<sup>11</sup> on water resources policy, planning and management.</b>		<b>No information</b> shared between different government sectors on water policy, planning and management.	<b>Information</b> on water resources, policy, planning and management is made available between different sectors.	<b>Communication:</b> Information, experiences and opinions on water resources, policy, planning and management are <b>shared between</b> different sectors.	<b>Consultation:</b> Opportunities for different sectors to <b>take part</b> in water resources policy, planning and management processes.	<b>Collaboration:</b> Formal <b>arrangements</b> between different government sectors with the objective of agreeing on collective decisions on important issues and activities relating to water resources planning and management.	<b>Co-decisions and co-production:</b> Coordination through jointly agreed upon processes and power is shared between different sectors on joint policy, planning and management activities.
Score	<b>80</b>						

**Status and progress:**

- As per Indian Constitution, the role of Central Government and State Governments in respect of water resources is well defined. The Government of India has set-up the National Water Resources Council (NWRC) under the Chairmanship of Prime Minister of India, with a view to create an apex body to evolve National Policies for Development and Use of Water Resources keeping in view the National perspective as well as State and regional needs.
- Union Minister of Jal Shakti acts as the Vice-Chairman of the Council. The members of the Council consist of Ministers of State for Jal Shakti, concerned Union Ministers/Ministers of States, Chief Ministers of all States and Lieutenant Governors/Administrators of the Union Territories (UTs).
- NWRC deliberates and finalizes the National Water Policy and reviews it from time to time.
- The Government of India constituted a National Water Board in 1990 under the chairmanship of Secretary, Ministry of Jal Shakti with Chief Secretaries of all States and UTs to review the progress achieved in implementation of the National Water Policy and to report the progress to the National Water Resources Council from time to time.
- The NITI Aayog (National Institution for Transforming India) serves as the apex public policy think tank of the Government of India, and the nodal agency tasked with catalyzing economic development, and fostering cooperative federalism through the involvement of State Governments of India in the economic policy-making process. The Governing Council of NITI Aayog comprises the Hon'ble Prime Minister of India; Chief Ministers of all the States and Union Territories with legislature; Lt Governors of other UTs; Ex-Officio Members; Vice Chairman, NITI Aayog; Full-Time Members, NITI Aayog; and Special Invitees. It is the premier body tasked with evolving a shared vision of national priorities and strategies, with the active involvement of States, in shaping the development narrative. The Governing Council, which embodies the objectives of cooperative federalism, presents a platform to discuss inter-sectoral, inter-departmental and federal issues to accelerate the implementation of the national development agenda.
- Inter-ministerial arrangements are existing for dealing specific related issues to undertake joint decisions/ directions.
- There is well established mechanism for inter-state dispute redressal co-ordinated and facilitated by the National Agencies. There are about 200 disputes resolved by such mechanisms.
- Committee of secretaries is responsible for the Government of India's administration of business transactions and the government of India's business allocation along with inter-ministerial coordination.
- The Zonal Councils are advisory bodies which provide a forum for resolving differences between Centre and States and amongst States through free and frank discussions and consultations. They are regional fora of cooperative endeavour for States linked with each other economically, politically and culturally. Being compact high level bodies, specially meant for looking after the interests of respective zones, they are capable of focusing attention on specific issues taking into account regional factors, while keeping

<sup>11</sup>Relates to coordination between the government authorities responsible for water management and those responsible for other sectors (such as agriculture, aquaculture, energy, climate, water supply and sanitation, tourism, municipal use, mining and industry, environment etc.) that are dependent on water, or impact on water (including surface water / groundwater considerations).

<p>the national perspective in view.</p> <ul style="list-style-type: none"> <li>• There are other fora like the National Development Council, Inter State Council, Governor’s/Chief Minister’s Conferences and other periodical high level conferences which also work for the development under the auspices of the Union Government.</li> <li>• Pro-Active Governance and Timely Implementation (PRAGATI) is a multi-purpose and multi-modal platform for bringing e-transparency and e-accountability with real-time presence and exchange among the key stakeholders. This programme has proved effective in addressing and resolving issues by bringing down the inter-departmental communication gap and thus minimizing the time taken for implementation of projects and schemes.</li> </ul>							
<p><b>Climate change considerations:</b> The water resources situation, its development, management and availability vary considerably from basin to basin. Many of the identified strategies/actions to achieve the goals of the National Water Mission are required to be taken by the State Governments/Union Territories. In this context, the State Specific Action Plans for Water Sector aligned with the State Action Plan on Climate Change are being formulated by the States under the National Action Plan for Climate Change (NAPCC) which would give the holistic roadmap to achieve the desired goals of Integrated Water Resource Management.</p>							
<p><b>Way forward:</b> Inter-ministerial arrangements are made to deal with specific issues/ concerns as per requirements.</p>							
<p><b>c. Public participation</b><sup>12</sup> in water resources policy, planning and management at national level.</p>		<p>No information shared between government and the public on policy, planning and management of water resources.</p>	<p><b>Information on water resources, policy, planning and management</b> is made available to the public.</p>	<p><b>Communication:</b> Government authorities <b>request</b> information, experiences and opinions of the public in relation to policy, planning and management of water resources.</p>	<p><b>Consultation:</b> Government authorities regularly <b>use</b> information, experiences and opinions of the public in relation to policy, planning and management of water resources.</p>	<p><b>Collaboration: Mechanisms</b><sup>13</sup> established, and regularly used, for the public to take part in relevant water resources policy, planning and management processes.</p>	<p><b>Representation:</b> Formal representation of the public in government processes contributing to decision making on important issues and activities in relation to water resources.</p>
Score	80						
<p><b>Status and progress:</b> One of the key aspects of improving water and sanitation management in India is to support and strengthen the participation of local communities. Concerted efforts have been made to create a Jan Andolan (a mass movement) for Jal Andolan (water movement) involving people, social organizations and civil society. Various initiatives and programmes have been launched for accelerating water resources planning and management which are as under:</p> <ul style="list-style-type: none"> <li>• Jal Shakti Abhiyan (JSA)– Under JSA, 657 Districts out of 767 Districts of the country have set up Jal Shakti Kendras for facilitating &amp; sensitizing the citizens about rain water conservation measures in the districts. More than 1.30 lakh Kisan Melas/Training programs held, more around 377 District Scientific Water Conservation Plans have been prepared, and 13 million saplings planted since the launch of the Campaign in 2019. Till date over 10 million water related structures have been created through community participation and ownership.</li> <li>• Jal Jeevan Mission (JJM)–Following the bottom-up approach, JJM is being implemented as a decentralized, demand-driven community-managed programme. More than 5.24 lakh Paani Samitis/ Village Water and Sanitation Committees (VWSC) have been formed and over 5.12 lakh (0.51 million) Village Action Plan have been prepared under Jal Jeevan Mission to manage, operate, and maintain in-village water supply infrastructure.</li> </ul>							

<sup>12</sup>The public’ includes all interested parties who may be affected by any water resources issue or intervention. They include organizations, institutions, academia, civil society and individuals. They do not include government organizations. The private sector is addressed separately in the next question, and vulnerable groups are addressed separately in question 2.2c.

<sup>13</sup> Mechanisms can include policies, laws, strategies, plans, or other formal operational procedures for public participation.

- Atal Bhujal Yojana (ATAL JAL) aims to bring in behavioural changes in the community, from the prevailing attitude of consumption to conservation & smart water management. Communities at the Gram panchayat level are being assisted in collecting water related data and then preparing water budget and Water Security Plans (WSPs) at Gram Panchayat level and proposed supply side interventions such as check dams, farm ponds, recharge shafts and other artificial recharge / water conservation structures and demand side interventions such as micro-irrigation, crop diversification, use of pipelines etc.
- Amrit Sarovar- 'Jan Bhagidari' has been at the core of Amrit Sarovar Mission and involves people's participation at all levels by forming User group. These User Groups are fully involved during the entire process of development of Amrit Sarovar viz. feasibility assessment, execution and its utilisation. States/UTs are leveraging the participation of freedom fighters, eldest members of the panchayat, family members of freedom fighters and martyrs, Padma Awardees, etc. for the purposes like laying of foundation stone of the designated Amrit Sarovar sites, flag hoisting on important dates like 26th January and 15th August. Till date, rejuvenation of 66466 Amrit Sarovars have been completed.
- Namami Gange Programme was launched in June 2014 for a period up to 31st March, 2021 to rejuvenate river Ganga and its tributaries. Under Namami Gange Programme, a comprehensive set of interventions such as wastewater treatment, solid waste management, river front management (Ghats and Crematoria development), e-flow, afforestation, biodiversity conservation and Public Participation etc. have been taken up for rejuvenation of river Ganga and its tributaries. Various awareness activities through rallies, campaigns, exhibitions, shramdaan, cleanliness drives, competitions, plantation drives and development and distribution of resource materials have been organized and for wider publicity the mass mediums such as TV/Radio, print media advertisements, advertorials, and featured articles have been published.
- Ministry of Water Resources has issued guidelines for farmers participation in water management, primarily for areas under the Centrally Sponsored Command Area Development Programme. The guidelines covered all aspects like past experience in India and abroad, objectives of Participatory Irrigation Management (PIM), area of operation of farmers associations in different irrigation schemes, duties and responsibilities of the farmers, training and monitoring.
- Various States have Water Users Associations (WUAs) which actively participate in policy, planning and management of water resources. Pani Panchayats & Self Help Groups reflects public participation in decision making on important issues and activities in relation to use and management of water resources.

**Way forward:**

Various other initiatives are being taken up for awareness generation and public participation across the country.



		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>d. Private sector<sup>14</sup> participation</b> in water resources development, management and use.		<b>No information</b> shared between government and private sector about water resources development, management and use.	<b>Information</b> made available between government and private sector about water resources development, management and use.	<b>Communication</b> between government and private sector about water resources development, management and use.	<b>Consultation:</b> Government authorities regularly involve the private sector in water resources development, management and use activities.	<b>Collaboration: Mechanisms<sup>15</sup></b> are established, <del>and</del> regularly used, and rooted in the transparent and accountable involvement and partnership of the private sector.	<b>Representation:</b> Effective private sector involvement in water resources development, management and use is established in a transparent way and with proper accountability mechanisms <sup>16</sup> in place.
	Score	60					
<b>Status and progress:</b> Under Corporate Social Responsibility (CSR), various activities have been taken up by the Private Sector. Many joint venture projects and schemes have been executed/ implemented in collaboration with Private Sectors in water sector. All big industries are having programs with involvement of various agencies/stakeholders in water resources conservation and management.							
<b>Way forward:</b> Private sectors are also encouraged to undertake Water Resources Projects independently or through joint venture with Academic/Public Sector Organizations. There are limitations in large scale participation of private sector in water resources management. However, continuous efforts are being made to engage them wherever feasible.							

<sup>14</sup>Private sector includes for-profit businesses and groups. Private sector actors may include water users (from across sectors, e.g. agriculture, food and beverage, energy, manufacturing, mining, etc.); water and sanitation service operators; water-related technology providers; and the financial providers participating through investments in water initiatives (definition adapted from [Sustainable Water Partnership \(2017\)](#)). It does not include government, civil society or public academic institutions. While this question is mainly focused at the national level, please respond at the level that is most relevant in the country context. Please explain this, including differences between implementation at different levels, in the ‘Status and progress field.

<sup>15</sup> Mechanisms can include policies, laws, strategies, plans, or other formal operational procedures for private sector participation.

<sup>16</sup>See description of “accountability mechanisms” in Annex A: Glossary.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>e. Developing IWRM capacity.</b> <sup>17</sup>	No capacity development specific to water resources management.	<b>Occasional</b> water resources management capacity development, generally limited to <b>short-term</b> / ad-hoc activities.	<b>Some long-term</b> capacity development initiatives on IWRM are being implemented, but geographic and stakeholder coverage is <b>limited</b> .	<b>Long-term</b> capacity development initiatives on IWRM are being implemented and geographic and stakeholder coverage is <b>adequate</b> .	Long-term capacity development initiatives on IWRM are being implemented, with <b>effective</b> outcomes, and geographic and stakeholder coverage is <b>very good</b> .	Long-term capacity development initiatives on IWRM are being implemented with <b>highly effective</b> outcomes and geographic and stakeholder coverage is <b>excellent</b> .
Score	<b>80</b>					
<b>Status and progress:</b>						
<ul style="list-style-type: none"> <li>• River Basin Plans have been developed from time to time for various basins like Ganga Basin Plan, Brahmaputra Master Plan, Tapi River Basin Management Plan, Brahmani-Baitarni IWRM Plan, Water Sharing and Management arrangements among the co-basin states of the Narmada, Cauvery, Godavari, Tungbhadra, Damodar, Betwa, Bansagar basins etc.</li> <li>• The guidelines for IWRM formulated by CWC are being used by various authorities at National and sub-national level.</li> <li>• At National Level, National Water Academy, Pune conduct various capacity development programmes for IWRM. In addition, other institutes like Rajiv Gandhi National Ground Water Training &amp; Research Institute, Raipur and North Eastern Regional Institute of Water and Land Management (NERIWALM) are also instrumental in imparting various capacity development program. Effective collaboration is made with renowned academic institutes like IITs, NITs, IIMs etc. for formulating and imparting capacity development programs. Further, there are various training institutes in virtually all States of the country. There are also State level institutes generally named as Water and Land Management Institutes (WALMIS) which are involved in related capacity development.</li> </ul>						
<b>Climate change considerations:</b>						
The water resources situation, its development, management and availability vary considerably from basin to basin. Many of the identified strategies/actions to achieve the goals of the National Water Mission are required to be taken by the State Governments/Union Territories. In this context, the State Specific Action Plans for Water Sector aligned with the State Action Plan on Climate Change are being formulated by the States under the National Action Plan for Climate Change (NAPCC) which would give the holistic roadmap to achieve the desired goals of Integrated Water Resource Management.						
<b>Way forward:</b>						
The integration of activities of various institutions at National level is under process. Further, strengthening measures are also being adopted for training institutes and WALMIS.						

<sup>17</sup> IWRM capacity development: refers to the enhancement of skills, instruments, resources and incentives for people and institutions at all levels, to improve IWRM implementation. Capacity needs assessments are essential for effective and cost-effective capacity development. Capacity development programmes should consider gender balance and disadvantaged/minority groups in terms of participation and awareness. Capacity development is relevant for many groups, including: local and central government, water professionals in all areas - both public and private water organisations, civil society, and in regulatory organisations. In this instance, capacity development may also include primary, secondary and tertiary education, and academic research concerning IWRM.

2.2 What is the status of institutions for IWRM implementation at other levels?							
		Degree of implementation (0 – 100)					
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>a. Basin/aquifer level<sup>18</sup> organizations<sup>19</sup></b> for leading implementation of IWRM.		<b>No</b> dedicated basin authorities for water resources management.	Authorities <b>exist</b> , with clear mandate to lead water resources management.	Authorities have clear mandate to lead IWRM implementation, and the capacity <sup>20</sup> to effectively lead IWRM plan <b>formulation</b> .	Authorities have the capacity to effectively lead IWRM plan <b>implementation</b> .	Authorities have the capacity to effectively lead periodic monitoring and <b>evaluation</b> of the IWRM plan(s).	Authorities have the capacity to effectively lead periodic IWRM plan <b>revision</b> .
	Score	<b>70</b>					
<b>Status and progress:</b> Same as described in 1.2 (b)							
<b>Way forward:</b> Same as described in 1.2 (b)							
<b>b. Public participation<sup>21</sup></b> in water resources policy, planning and management at the <b>local level</b> . <sup>22</sup>		<b>No information</b> shared between government and the public on policy, planning and management at the local level.	<b>Information</b> on water resources, policy, planning and management is made available to the public at the local level.	<b>Communication:</b> Government authorities <b>request</b> information, experiences and opinions of the public.	<b>Consultation:</b> Government authorities regularly <b>use</b> local level information, experiences and opinions of the public.	<b>Collaboration: Mechanisms<sup>23</sup></b> established, and regularly used, for the public at the local level to take part in relevant policy, planning and management processes.	<b>Representation:</b> Formal representation of the public and local authority processes contributing to decision making on important issues and activities, as appropriate.
	Score	<b>70</b>					
<b>Status and progress:</b> One of the key aspects of improving water and sanitation management in India is to support and strengthen the participation of local communities. At local level people’s representative bodies such as Panchayati Raj Institutions, Water User Association, Municipal Bodies, District Boards etc. participate in the planning and implementation of various initiatives/ programmes in water sector. National Water Policy, 2012 has also emphasized for “ <i>Local governing bodies like Panchayats, Municipalities, Corporations, etc., and Water Users Associations, wherever applicable, should be involved in planning of the projects. The unique needs and aspirations of the Scheduled caste and Scheduled Tribes, women and other weaker</i> ”							

<sup>18</sup> At the basin/aquifer level, please include only the most important river basins, lake basins and aquifers for water supply or for other reasons. These basins/aquifers likely cross-administrative borders, including state/provincial borders for federal countries. The basins may also cross national borders, but this question refers to management of the portions of basins within each country. Question 2.2e refers specifically to transboundary management of basins/aquifers shared by countries.

<sup>19</sup> Could be organization, committee, inter-ministerial mechanism or other means of collaboration for managing water resources at the basin level.

<sup>20</sup> For the definition of ‘capacity’ in this context, see footnote 13. Beyond having the capacity, authorities must also actually be leading the implementation of these activities.

<sup>21</sup> ‘The public’ includes all interested parties who may be affected by any water resources issue or intervention. They include organizations, institutions, academia, civil society and individuals. They do not include government organizations. The private sector is dealt with separately in question 2.1d.

<sup>22</sup> Examples of ‘local level’ include municipal level (e.g. cities, towns and villages), community level, basin/tributary/aquifer/delta level, and water user associations.

<sup>23</sup> Mechanisms can include policies, laws, strategies, plans, or other formal operational procedures for public participation.

*sections of the society should be given due consideration*". Before taking up a water resources project, public hearings in the project affected area are conducted and views of affected people, experts, professionals etc. are obtained on the project report and incorporated suitably for implementation. Concerted efforts have been made to create a Jan Andolan (a mass movement) for Jal Andolan (a water movement) involving people, social organizations and civil society.

Various initiatives and programmes at National level which have been launched for accelerating water resources planning and management, which are as under:

- Jal Shakti Abhiyan (JSA)– Under JSA, 657 Districts out of 767 Districts of the country have set up Jal Shakti Kendras for facilitating & sensitizing the citizens about rain water conservation measures in the districts. More than 1.30 lakh Kisan Melas/Training programs held, more around 377 District Scientific Water Conservation Plans have been prepared, and 13 million saplings planted since the launch of the Campaign in 2019. Till date over 10 million water related structures have been created through community participation and ownership.
- Jal Jeevan Mission (JJM)–Following the bottom-up approach, JJM is being implemented as a decentralized, demand-driven community-managed programme. More than 5.24 lakh Paani Samitis/ Village Water and Sanitation Committees (VWSC) have been formed and over 5.12 lakh (0.51 million) Village Action Plan have been prepared under Jal Jeevan Mission to manage, operate, and maintain in-village water supply infrastructure.
- Atal Bhujal Yojana (ATAL JAL) aims to bring in behavioural changes in the community, from the prevailing attitude of consumption to conservation & smart water management. Communities at the Gram panchayat level are being assisted in collecting water related data and then preparing water budget and Water Security Plans (WSPs) at Gram Panchayat level and proposed supply side interventions such as check dams, farm ponds, recharge shafts and other artificial recharge / water conservation structures and demand side interventions such as micro-irrigation, crop diversification, use of pipelines etc.
- Amrit Sarovar- 'Jan Bhagidari' has been at the core of Amrit Sarovar Mission and involves people's participation at all levels by forming User group. These User Groups are fully involved during the entire process of development of Amrit Sarovar viz. feasibility assessment, execution and its utilisation. States/UTs are leveraging the participation of freedom fighters, eldest members of the panchayat, family members of freedom fighters and martyrs, Padma Awardees, etc. for the purposes like laying of foundation stone of the designated Amrit Sarovar sites, flag hoisting on important dates like 26th January and 15th August. Till date, rejuvenation of 66466 Amrit Sarovars have been completed.
- Namami Gange Programme was launched in June 2014 for a period up to 31st March, 2021 to rejuvenate river Ganga and its tributaries. Under Namami Gange Programme, a comprehensive set of interventions such as wastewater treatment, solid waste management, river front management (Ghats and Crematoria development), e-flow, afforestation, biodiversity conservation and Public Participation etc. have been taken up for rejuvenation of river Ganga and its tributaries. Various awareness activities through rallies, campaigns, exhibitions, shramdaan, cleanliness drives, competitions, plantation drives and development and distribution of resource materials have been organized and for wider publicity the mass mediums such as TV/Radio, print media advertisements, advertorials, and featured articles have been published.

In addition, various States have Water Users Associations (WUAs) which actively participate in policy, planning and management of water resources. Pani Panchayats & Self Help Groups reflects public participation in decision making on important issues and activities in relation to use and management water resources.

- Pani Bachao Paisa Kamao - A scheme named "Pani Bachao Paisa Kamao" has been launched by the Govt. of Punjab. Under this scheme, farmers will get monetary benefit for less use of tube well. The purpose of the scheme is to ensure that farmers use power with restraint to pump out ground water. Also, details regarding the usage of power and money transferred into account of farmer would be given on phone.
- Mera Pani, Meri Virasat - The Govt. of Haryana has launched a scheme named "Mera Pani, Meri Virasat" for replacement of paddy by maize/cotton/bajra/pulses in 1 lakh hectare in targeted blocks having water table more than 40 meters. In addition to this, paddy cultivation will be restricted in gram panchayat agriculture land with groundwater level less than 35 meters. Under the scheme, Govt. will provide Rs. 7,000 per acre to those farmers who will diversify more than 50% of their kharif season paddy area. Also, farmers will not be allowed to cultivate paddy in any new areas where paddy was not grown the preceding year. Also, all those farmers who are operating their tube well with 50 horse power electric motor will not be allowed to grow paddy.
- Gangajal Aapurti Yojana- The Gangajal Aapurti Yojana was launched by the Govt of Bihar in 2019. Under this scheme, the Har Ghar Gangajal programme has been launched in November 2022 to harvest the excess water in the Ganga during the monsoon flooding season. This water would be stored, treated and piped to Rajgir, Gaya, and Bodhgaya, regions of Bihar that have for long depended on tankers of drinking water from adjoining districts.

- Mission Kakatiya: Mission Kakatiya was launched by the Telangana Government in 2015 with an aim to revive over 46,000 minor irrigation tanks spread across the state. The program is named after the Kakatiya dynasty, which was known for its irrigation infrastructure in the region. The main objective of Mission Kakatiya is to increase the water storage capacity in the irrigation tanks and restore the ecological balance in the surrounding areas. The program aims to achieve this through desilting and removing encroachments around the tanks, repairing bunds and sluices, and improving the feeder channels.
- Jal Jeevan Hariyali Yojana -This Yojana has been started by the Government of Bihar with the aim of keeping the environment balanced and maintaining greenery in nature. This scheme was started in the year 2019 and in the last 2 years one Crore saplings have been planted. In the year 2022 also 43.62 lakh saplings are to be planted. Further, under this scheme, the government will provide subsidy of Rs 75,500 to the farmers of the state for the construction of ponds, ponds, construction of wells, irrigation of agriculture etc.
- Pani Panchayat (PP) Act, 2002 and Rule-2003 was enacted by the Government of Odisha to provide statutory backing to the WUAs with necessary amendments in 2006, 2008 and 2014 for better implementation and higher participation. The Act provides for farmers participation in the management of irrigation systems by way of forming Pani Panchayat constituted within a specified hydraulic boundary and funded by the government. Backed by Pani Panchayats Act (2002), participatory irrigation management is flourishing in Odisha. The decision of the Project Committee and Pani Panchayats to restrict paddy cultivation during Rabi season also proved to be effective in maximizing output. Currently there are about 37,000 Pani Panchayats functioning in Odisha alone. The formation of Water Users Associations in all categories of irrigation commands supplements this participatory approach.
- Jalyukt Shivar - Maharashtra government has launched the project "Jalyukt Shivar Abhiyaan" in a bid to make Maharashtra a drought-free state by 2019. The project involves deepening and widening of streams, construction of cement and earthen stop dams, work on nullahs and digging of farm ponds. The mobile app, developed by MRSAC, is being used to map these locations. The mapped location can be monitored through this web page. The user will be able to download the application, view instruction manual and view mapping locations along with photographs. District-wise, taluka-wise, work-wise statistics is also available both in tabular and graphics form. The project aims to make 5000 villages free of water scarcity every year.
- West Bengal Accelerated Development of Minor Irrigation Project (WBADMIP) Precision Agriculture for Development India Foundation (PADIF) is working with the West Bengal Accelerated Development of Minor Irrigation Project (WBADMIP or abbreviated as "ADMI") on a pilot to implement a mobile phone-based extension system for 10,000 farmers across West Bengal. This service, branded Krishi Katha, provides information on crop management, irrigation management and fisheries with the goal of strengthening the Department's extension machinery and augmenting farmer livelihoods. Participating farmers belong to Water User Associations (WUAs), with roughly 8 farmers per WUA on-boarded onto the service in the selected 10 districts. As part of this service, farmers receive a weekly two minute long voice message providing advice and recommendations based on crop and weather cycles.
- Gujarat –Sardar Sarovar project (Underground pipeline network)- In alignment with the objectives of PMKSY, in 2012 the Government of Gujarat formed a policy for the construction of sub-minor Underground Pipeline (UGPL) with effective participation of Water Users' Associations (WUAs); the policy was revised in August-2014. The intervention using UGPL has brought immense benefits to the farmers of Sardar Sarovar Project, which includes: a) Saving of precious land as only right of use is required. b) Saving of precious water due to less conveyance losses due to evaporation and seepage. c) Tail-enders getting the water first. d) Less maintenance requirement.
- Kerala – Community Based Micro irrigation - A Community Based Micro Irrigation Project is being implemented in Kerala. It focuses on assimilation of lift irrigation potential coupled with micro-irrigation techniques, and empower farmers, in cash crops, fruit tree crops and vegetables to enhance productivity.

**Way forward:**

Various other initiatives are being taken up for awareness generation and public participation across the country.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>c. Participation of vulnerable groups in water resources planning and management.</b> <sup>24</sup>	Participation of vulnerable groups <b>not explicitly addressed</b> in laws, policies, or plans.	Vulnerable groups <b>partially addressed</b> , but no explicit procedures in place. <sup>25</sup>	<b>Some procedures in place</b> , but limited budget and human capacity for implementation.	Transparent procedures in place, with <b>moderate participation</b> of vulnerable groups (moderate budget and human capacity).	<b>Regular participation</b> of vulnerable groups (sufficient budget and human capacity, and participation is monitored through accountability mechanisms <sup>26</sup> ).	<b>Meaningful<sup>27</sup> and regular participation</b> of vulnerable groups, as appropriate, and participation is monitored through accountability mechanisms.
Score	<b>80</b>					

**Status and progress:**

- Vulnerable Groups, such as weaker and backwards communities are given preferences in the Panchayats (Village Level Governance Body), Government Local Bodies, Municipalities, Legislative Assembly and Parliament. These elected functionaries have a greater role in decision making in respect of water resources planning and management as appropriate and participation is monitored through accountability mechanism.
- Further, National Water Policy, 2012 has also emphasized for “*Local governing bodies like Panchayats, Municipalities, Corporations, etc., and Water Users Associations, wherever applicable, should be involved in planning of the projects. The unique needs and aspirations of the Scheduled caste and Scheduled Tribes, women and other weaker sections of the society should be given due consideration*”.
- Water conservation and harvesting are the top priorities of the Government and one of the key aspects of improving water and sanitation management in India is to support and strengthen the participation of local communities involving people, social organizations, vulnerable groups and civil societies to join hands for water conservation and create “Jan-Andolan for Jal-Andolan” (People Movement for Water Movement) in 2019.
- The details of some initiatives/measures can be referred from Para 2.2 (b).

**Way forward:**

Various other initiatives are being taken up for awareness generation and participation of public including vulnerable groups across the country.

<sup>24</sup>Vulnerable groups: groups of people that face economic, political, or social exclusion or marginalisation. They can include, but are not limited to: indigenous groups, ethnic minorities, migrants (refugees, internally displaced people, asylum seekers), remote communities, subsistence farmers, people living in poverty, people living in slums and informal settlements. Also referred to as ‘marginalised’ or ‘disadvantaged’ groups. While women are often included in definitions of ‘vulnerable groups’, in this survey gender issues are addressed separately in question 2.2d. The score given for this question should reflect the situation for the majority of the vulnerable groups. This question has been added since the baseline to capture an element of stakeholder participation which is important in the context of ‘leave no-one behind’ – one of the key principles of Agenda 2030.

<sup>25</sup> ‘Procedures’ can include operational processes to, for example, raise awareness, reduce language barriers, and facilitate interaction with specific vulnerable groups.

<sup>26</sup>See description of “accountability mechanisms” in Annex A: Glossary.

<sup>27</sup>‘Meaningful’ implies voices of vulnerable groups are heard, contribute to decision-making, and influence outcomes. It follows the UN Statement of Common Understanding on Human Rights-Based Approaches to Development Cooperation which provides for “Participation and Inclusion: ... all peoples are entitled to active, free and meaningful participation in, contribution to, and enjoyment of civil, economic, social, cultural and political development in which human rights and fundamental freedoms can be realized.”

		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>d. Gender mainstreaming in water resources management.</b> <sup>28</sup>		No gender mainstreaming in water resources management.	Gender mainstreaming mechanisms and practices in water resources management <b>being developed</b>	Gender mainstreaming mechanisms <b>exist</b> (but limited implementation, budget or monitoring).	Gender mainstreaming objectives <sup>29</sup> <b>partly achieved</b> (activities implemented and partially monitored and funded).	Gender mainstreaming objectives <b>mostly achieved</b> (activities adequately monitored and funded).	Gender mainstreaming objectives <b>consistently achieved</b> and effectively address gender issues (activities and outcomes reviewed and revised and based on relevant accountability mechanisms <sup>30</sup> ).
	Score	<b>80</b>					

**Status and progress:**

Like Vulnerable Groups, Role of Women i.e. Gender mainstreaming objectives are consistently achieved and effectively address gender issues (Activities and outcomes reviewed and revised based on relevant accountability mechanism). Jal Jeevan Mission (JJM) is being implemented as a decentralized, demand-driven, community-managed program in villages with an active participation of people especially women and rural communities. More than 5.24 lakh Paani Samiti (Water Committee)/Village Water & Sanitation Committees have been formed and over 5.12 lakh Village Action Plans have been prepared under JJM. Local communities/Gram Panchayats are to manage, operate and maintain in-village water supply infrastructures, their water resources and grey water. Woman plays a significant role in this Mission. Lakhs of champion women contribute in success of the program, which also plays role of Swachhagrahi, Women Sarpanch (Women Village Head), Rani Mistri, Artist, Motivator and others are leading the campaign adding Swachhata (Cleanliness) and energy to it.

Further, National Water Policy, 2012 has also emphasized for “*Local governing bodies like Panchayats, Municipalities, Corporations, etc., and Water Users Associations, wherever applicable, should be involved in planning of the projects. The unique needs and aspirations of the Scheduled caste and Scheduled Tribes, women and other weaker sections of the society should be given due consideration*”

**Way forward:**

Various other initiatives are being taken up for awareness generation and participation of public including women for gender main streaming in water resource management across the country.

<sup>28</sup>Gender mainstreaming is about fully integrating gender perspectives in water planning, management, and decision-making, in a cross-cutting manner. Gender mainstreaming mechanisms can include frameworks, practices and tools aimed at achieving gender objectives related to women’s participation, voice and influence in water resources management. See “Gender mainstreaming” in [Annex A \(Glossary\)](#), which contains links to the [Gender Checklist](#) (to support discussion on this topic), and a report on gender mainstreaming in water resources management. Gender mainstreaming mechanisms may originate within the water sector or at a higher level, but if they are primarily addressed at a higher level, then there should be evidence of gender mainstreaming within the water sector to achieve scores in this question. Any differences between implementation at national, local or transboundary levels can be explained in the ‘Status and progress’ field.

<sup>29</sup>Gender mainstreaming objectives ultimately refer to equal participation and influence in water resources management at all levels. Ways of monitoring this include (please identify any of these or similar in the ‘Status and progress’ field): 1) Presence of Gender Focal Point responsible for gender policy and gender concerns in authorities that deal with water resources; 2) Gender parity in decision-making processes at all levels (e.g. in meetings or board members/committee members); 3) Presence of gender-specific objectives and commitments in strategies, plans and laws related water policy; 4) Presence and role of local women’s groups/organizations receiving technical and/or financial support from government/non-government organizations involved in water resources management activities; 5) Budget allocation, and procedures for collection and analysis of sex-disaggregated data of local populations, when planning for water-related programmes / projects, including infrastructure; 6) Presence of measures for improving gender parity and equity in human resources (HR) policies of authorities. Source: adapted from [UNESCO WWAP Toolkit on Sex-disaggregated Water Data, 2019](#).

<sup>30</sup>See description of “accountability mechanisms” in Annex A: Glossary.

		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>e. Organizational framework for transboundary water management.</b> <sup>31</sup>		No organizational framework(s) for transboundary water management.	Organizational framework(s) for transboundary water management <b>being developed.</b>	Organizational framework(s) for transboundary water management <b>established.</b>	Organizational framework(s)' mandate is <b>partly fulfilled.</b>	Organizational framework(s)' mandate is <b>mostly fulfilled.</b>	Organizational framework(s)' mandate is <b>fully fulfilled.</b>
Score	<b>80</b>						
<p><b>Status and progress:</b></p> <ul style="list-style-type: none"> <li>• Arrangements for Trans-boundary Water Management are fully implemented.</li> <li>• Trans-boundary cooperation on water resources is crucial for India and its neighbouring countries due to their shared river basins for management of water scarcity, prevention of conflicts, and promotion of sustainable development in the region. The various trans-boundary water cooperation agreements between India and its neighbours include: <ul style="list-style-type: none"> <li>➤ <b>Indus Water Treaty (Pakistan):</b> The Indus Waters Treaty (1960) governs the sharing of the Indus River's waters between India and Pakistan. The Treaty divided the six major rivers of the basin between the two countries.</li> <li>➤ <b>Ganges Water Sharing Treaty (Bangladesh):</b> The Joint Rivers Commission of India and Bangladesh was constituted in the year 1972 as a bilateral mechanism to address issues of mutual interest on common / border / Trans-boundary Rivers. It was established with a view to maintain liaison in order to ensure the most effective joint effort in maximizing the benefits from common river systems. The JRC is headed by Water Resources Ministers of both the countries. Further, the Ganges Water Sharing Treaty (1996) between India and Bangladesh aims to ensure an equitable distribution of the Ganges' waters.</li> <li>➤ <b>Mahakali Treaty (Nepal):</b> The Mahakali Treaty (1996) outlines water-sharing arrangements for the river's utilization and includes provisions for hydropower development and flood management.</li> </ul> </li> <li>• India has made efforts to engage with its neighbours through bilateral discussions, agreements, and regional forums to promote trans-boundary water cooperation. However, ongoing negotiations, mutual understanding, and continuous dialogue are essential to ensure sustainable water management and avoid conflicts in the region</li> <li>• One of the important areas of cooperation is sharing the flood data from Bhutan, from Nepal, from China, to Bangladesh and to Pakistan on a regular basis under various bilateral agreements.</li> </ul> <p><b>Way forward:</b></p> <ul style="list-style-type: none"> <li>• Bilateral arrangements with the neighbouring countries are to be reviewed periodically.</li> <li>• Ganga Water Treaty signed in 1996 between India and Bangladesh (for 30 years) is due for review in the year 2026.</li> </ul>							

<sup>31</sup>An organizational framework can include a joint body, mechanism, authority, committee, commission or other institutional arrangement. Refers to international basins/aquifers.



f. Sub-national <sup>32</sup> authorities for leading IWRM implementation. <sup>33</sup>	No dedicated sub-national authorities for water resources management.	Authorities <b>exist</b> , with clear mandate to lead water resources management.	Authorities have clear mandate to lead IWRM implementation, and the capacity <sup>34</sup> to effectively lead IWRM plan <b>formulation</b> .	Authorities have the capacity to effectively lead IWRM plan <b>implementation</b> .	Authorities have the capacity to effectively lead periodic monitoring and <b>evaluation</b> of the IWRM plan(s).	Sub-national authorities have the capacity to effectively lead periodic IWRM plan <b>revision</b> .
Score	70					
<p><b>Status and progress:</b></p> <ul style="list-style-type: none"> <li>Water is a State subject in India, in the State List at Entry 17 of List-II in the 7th Schedule of the Constitution (Article 246 refers). The development of water resources by any idea, module, plan etc., thus falls in the ambit of respective State Governments and as much the planning, execution, operation and maintenance of water resources Projects are to be carried out by the concerned State from their own resources as per their priorities. Most of the States have their own specific Acts/ laws related to management of Water Resources. Some of the states have already made institutional arrangements specific to their river basins/ sub-basins which have/ are in the process of preparing and managing their water resources as per IWRM.</li> <li>Most of the States/UTs in the Country i.e. 16 States have their respective State Water Policies in line with the National Water Policy formulated on the principles of IWRM and more than half the States have Water and Land Management Institutes (WALMIs), which promote the advancement and scientific knowledge and provide capacity building of the various stakeholders in integrated manner.</li> <li>State Governments like Maharashtra, Arunachal Pradesh, Uttar Pradesh, Madhya Pradesh, Gujarat etc. have constituted Water Resources Regulatory Authorities.</li> <li>Basin level organisations/ corporations have been created by various States to act on the principles of IWRM.</li> </ul>						
<p><b>Way forward:</b></p> <p>Remaining States/UTs in the country follow National Policies however, they are also in process of various stages of establishing State Water Regulatory Authorities to function on the principle of IWRM.</p>						

<sup>32</sup>Sub-national can include, but not limited to: provincial, state, county, local government areas, council. In this case, sub-national should not include basin/aquifer levels as this is dealt with in question 2.2a. Answer this question for the highest sub-national level(s) that are relevant in the country, and specify what these are.

<sup>33</sup> This question has replaced question 2.2f from the baseline survey, which was for federal countries only. This is in recognition of the fact that many countries have sub-national authorities for water resources management, even if they are not federal countries.

<sup>34</sup>For the definition of ‘capacity’ in this context, see footnote 13. Beyond having the capacity, authorities must also actually be leading the implementation of these activities.

### 3 Management instruments

This section includes the tools that enable decision-makers and users to make rational and informed choices between alternative actions. It includes management programmes, monitoring water resources and the pressures on them, knowledge sharing and capacity development. Many of the questions in this section relate to other SDG 6 targets and indicators (see 6.5.1 [Monitoring Guide](#)), and coordination between different SDG reporting processes is encouraged where feasible.

#### Terminology used in the questions:

- **Limited, Adequate, Very good, Excellent:** Are terms used describe the status, coverage and effectiveness of the management instruments assessed in this section. Respondents should apply their own judgement based on the ‘best-practice’ descriptions of management instruments in the glossary, the section introduction, and through footnotes. For example, ‘adequate’ may imply that the basic minimum criteria for that particular management instrument are met. Please provide qualifying information to the question score in the ‘Status description’ cell immediately below each question.
- **Management instruments:** Can also be referred to as management tools and techniques, which include regulations, financial incentives, monitoring, plans/programmes (e.g. for development, use and protection of water resources), as well as those specified in footnotes on questions and thresholds below.
- **Monitoring:** collecting, updating, and sharing timely, consistent and comparable water-related data and information, relevant for science and policy. Effective monitoring requires ongoing commitment and financing from government. Resources required include appropriate technical capacity such as laboratories, portable devices, online water use control and data acquisition systems. May include a combination of physical data collection, remote sensing, and modelling for filling data gaps.
- **Short-term / Long-term:** In the context of management instruments, short-term includes ad-hoc activities and projects, generally not implemented as part of an overarching programme with long-term goals. Long-term refers to activities that are undertaken as part of an ongoing programme that has more long-term goals/aims and implementation strategy.
- **Accountability mechanisms:** refer to mechanisms that increase Transparency, Accountability, and Participation, and strengthen Anti-corruption ([TAP-A](#). See also Annex A: Glossary). For each question in this section, it is suggested that TAPA-related mechanisms should “exist”, as relevant, to achieve a score of 80 or 90 (“High” threshold), and should be “effective” to achieve a score of 100 (“Very high” threshold).

**Please take note of all footnotes as they contain important information and clarification of terms used in the questions and thresholds.**

Enter your score, **in increments of 10**, from 0-100, or “n/a” (not applicable), in the yellow cell immediately below each question. Enter free text in the “Status and progress” and “Way forward” fields below each question as advised in the Introduction in Part 1. This will help achieve agreement among different stakeholders in the country, as well as help monitor progress over time. Suggestions for the type of information that may be useful are provided. You may also provide further information you think is relevant, or links to further documentation.

3. Management Instruments							
		Degree of implementation (0 – 100)					
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
3.1 What is the status of management instruments to support IWRM implementation at the national level?							
<b>a. National monitoring of water availability</b> <sup>35</sup> (includes surface and/or groundwater, as relevant to the country).	<b>No</b> national monitoring systems in place.	Monitoring systems established for a <b>limited</b> number of <b>short-term</b> / ad-hoc projects or similar.	<b>Long-term</b> national monitoring is carried out but with <b>limited</b> coverage and limited use by stakeholders.	<b>Long-term</b> national monitoring is carried out with <b>adequate</b> coverage but limited use by stakeholders.	Long-term national monitoring is carried out with <b>very good</b> coverage and adequate use by stakeholders.	Long-term national monitoring is carried out with <b>excellent</b> coverage and excellent use by stakeholders.	
	Score	<b>80</b>					
<b>Status and progress:</b> <ul style="list-style-type: none"> <li>Water resources potential of the Indian River basins has been estimated from time to time in the past and the latest study has been done using the remote sensing inputs and advanced technology in 2019. In addition, various river basin studies have been undertaken to support IWRM. River Basin Plans have been developed from time to time for various basins like Ganga Basin Plan, Brahmaputra Master Plan, Tapi River Basin Management Plan, Brahmani-Baitarni IWRM Plan, etc.</li> <li>Further, Central Ground Water Board publishes its report on Dynamic Assessment of Ground Water every year. National Aquifer Mapping and Management (NAQUIM) Program is being implemented by the Central Ground Water Board (CGWB), Government of India in coordination with the State Ground Water Boards and related organisations throughout the country. Aquifer Maps and Aquifer Management Plans are prepared and shared with the State Governments and stakeholders even at grass-root levels. Total mappable area of 25 lakh Sqm. Kms has already been mapped under NAQUIM, till April, 2023.</li> <li>Many of the States/UTs have initiated action on the recommendations of the NAQUIM Program in their respective States/UTs. Under NAQUIM-2, the Ground Water Management Plans prepared are to be further narrowed down to Block level in the scale of 1:10,000 so that the Management Plans can be designed and implemented in an effective way.</li> <li>National Water Informatics Centre (NWIC) has been set up by the Government of India on 28th March, 2018 to act as a central repository of updated water data and allied themes.</li> <li>NWIC is encouraging and supporting states to establish State Water Informatics Centres (SWIC) with the goal of optimising the use of water data within states and adding value to existing data through standardisation, increased interoperability, improved data validation and integration of latest technologies and GIS framework. The basic objective of establishing SWIC is to empower states with digital, validated, on-line water resources information system required for better planning and management of water resources at State level and simultaneously to feed the central system for basin and regional level policy planning and taking strategic decisions based on authentic data analytics.</li> <li>National Remote Sensing Centre (NRSC) provides key inputs (in form of space based data) for planning, monitoring and management of several irrigation projects, estimation of availability of surface water resources and various water balance components. Several projects were executed by NRSC on the performance evaluation of irrigation commands and irrigation potential utilization, assessment of irrigation infrastructure across the country, space inputs for feasibility studies for Inter Linking of rivers, reservoir sedimentation, seasonal snow and water bodies information, snow melt runoff etc. The strength of dynamic multi-sensor / satellite based information is providing scope for the development of water resources information systems at state / central level. These information systems are better focused for organization of water resources related database, collection and integration of field data, dissemination to the stake holders for analysis and preparation of water management plans.</li> <li>India Meteorological Department (IMD) is the National Meteorological Service of the country dealing with all matters relating to meteorology and allied subjects. E.g To take meteorological observations and to provide current and forecast meteorological information for optimum operation of weather-sensitive activities like agriculture, irrigation,</li> </ul>							

<sup>35</sup> See definition of monitoring in Terminology at the beginning of section 3.

etc. they also provide meteorological statistics required for agriculture, water resource management, and other nation-building activities.

**Way forward:**

Periodic Assessment of Water Resources Availability in India is to be carried out on regular basis.

<b>b. Sustainable and efficient water use management</b> <sup>36</sup> from the national level, (includes surface and/or groundwater, as relevant to the country).	<b>No</b> management instruments being implemented.	Use of management instruments is <b>limited</b> and only through <b>short-term</b> / ad-hoc projects or similar.	<b>Some</b> management instruments implemented on a more <b>long-term</b> basis, but with <b>limited</b> coverage across different water users and the country.	Management instruments are implemented on a <b>long-term</b> basis, with <b>adequate</b> coverage across different water users and the country.	Management instruments are implemented on a long-term basis, with <b>very good</b> coverage across different water users and the country, and are <b>effective</b> .	Management instruments are implemented on a long-term basis, with <b>excellent</b> coverage across different water users and the country, and are <b>highly effective</b> .

**Status and progress:**

Various initiatives and programmes have been launched for accelerating water resources planning and management which are as under:

- National Water Policy, 2012 has given comprehensive guidelines on water use efficiency in different aspects of water resources use and development. Emphasis has been laid on evolving benchmarks for water uses for different purposes, i.e., water footprints, and water auditing to promote and incentivize efficient use of water. It has envisaged an institutional arrangement for promotion, regulation and evolving mechanisms for efficient use of water at basin/sub-basin level.
- Sahi Fasal campaign was launched in 2019 to nudge farmers in the water stressed areas to grow crops which are not water intensive, but use water very efficiently; and are economically remunerative; are healthy and nutritious; suited to the agro-climatic-hydro characteristics of the area; and are environmentally friendly. Creating awareness among farmers on appropriate crops, micro-irrigation, soil moisture conservation etc; weaning them away from water intensive crops like paddy, sugarcane etc. to crops like corn, maize etc. which require less water; assisting policy makers to frame policies that make effective pricing of inputs (water and electricity); improve procurement and market for these alternate crops; create appropriate storage them etc. ultimately leading to increase in the income of farmers are the key elements of “Sahi Fasal”
- The Government is making all efforts to enhance water use efficiency at farm level through adoption of micro irrigation in all the States of the Country. The Department of Agriculture and Farmers Welfare (DA&FW) is implementing Per Drop More Crop component of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY-PDMC) from 2015-16 in all the States of the Country with the objective to enhance water use efficiency in the agriculture sector by promoting appropriate technological interventions like Drip & sprinkler irrigation technologies and encourage the farmers to use water saving and conservation techniques.
- The Department of Land Resources, Ministry of Rural Development is implementing the Integrated Watershed Development Programme (IWMP) from 2009-10 (now subsumed into Pradhan Mantri Krishi Sinchayee Yojana) with an objective to cover 55 million hectares of rain fed land by 2027. The IWMP is the second largest watershed programme in the world after China’s.
- Under Jal Shakti Abhiyan: Catch the Rain campaign for water security in the mountain regions of India participatory Springshed Management approach has been launched through Science based planning, designing and Monitoring & Evaluation, to strengthen the capacity of communities, sensitization and awareness of different stakeholders, sustain water security through community participation.
- Piped irrigation network is being promoted for conveyance of irrigation water, to avoid land acquisition and related issues. In order to facilitate its adoption by the States,

<sup>36</sup>Management instruments include demand management measures (e.g. technical measures, financial incentives, education and awareness raising to reduce water use and/or improve water-use efficiency, conservation, recycling and re-use), monitoring water use (including the ability to disaggregate by sector), mechanisms for allocating water between sectors (including environmental considerations). Coordination with SDG indicator 6.4.1 Focal Point and results is encouraged when answering this question.

guidelines on design of pressurized pipe irrigation system has been published by Central Water Commission in 2017. Further, while minimum 10% micro-irrigation is mandatorily required for command area development works being funded by Ministry of Jal Shakti.

- Jal Shakti Abhiyan (JSA) - Under JSA, 657 Districts out of 767 Districts of the country have set up Jal Shakti Kendras for facilitating & sensitizing the citizens about rain water conservation measures in the districts. More than 1.30 lakh Kisan Melas/Training programs held, more around 377 District Scientific Water Conservation Plans have been prepared, and 13 million saplings planted since the launch of the Campaign in 2019. Till date over 10 million water related structures have been created through community participation and ownership.
- Jal Jeevan Mission (JJM)—Following the bottom-up approach, JJM is being implemented as a decentralized, demand-driven community-managed programme. More than 5.24 lakh Paani Samitis/ Village Water and Sanitation Committees (VWSC) have been formed and over 5.12 lakh (0.51 million) Village Action Plan have been prepared under Jal Jeevan Mission to manage, operate, and maintain in-village water supply infrastructure.
- Atal Bhujal Yojana (ATAL JAL) aims to bring in behavioural changes in the community, from the prevailing attitude of consumption to conservation & smart water management. Communities at the Gram panchayat level are being assisted in collecting water related data and then preparing water budget and Water Security Plans (WSPs) at Gram Panchayat level and proposed supply side interventions such as check dams, farm ponds, recharge shafts and other artificial recharge / water conservation structures and demand side interventions such as micro-irrigation, crop diversification, use of pipelines etc.
- Amrit Sarovar- 'Jan Bhagidari' has been at the core of Amrit Sarovar Mission and involves people's participation at all levels by forming User group. These User Groups are fully involved during the entire process of development of Amrit Sarovar viz. feasibility assessment, execution and its utilisation. States/Uts are leveraging the participation of freedom fighters, eldest members of the panchayat, family members of freedom fighters and martyrs, Padma Awardees, etc. For the purposes like laying of foundation stone of the designated Amrit Sarovar sites, flag hoisting on important dates like 26<sup>th</sup> January and 15<sup>th</sup> August. Till date, rejuvenation of 66466 Amrit Sarovars have been completed.
- Namami Gange Programme was launched in June 2014 for a period up to 31<sup>st</sup> March, 2021 to rejuvenate river Ganga and its tributaries. Under Namami Gange Programme, a comprehensive set of interventions such as wastewater treatment, solid waste management, river front management (Ghats and Crematoria development), e-flow, afforestation, biodiversity conservation and Public Participation etc. Have been taken up for rejuvenation of river Ganga and its tributaries. Various awareness activities through rallies, campaigns, exhibitions, shramdaan, cleanliness drives, competitions, plantation drives and development and distribution of resource materials have been organized and for wider publicity the mass mediums such as TV/Radio, print media advertisements, advertorials, featured articles have been published.
- Various States have Water Users Associations (WUAs) which actively participate in policy, planning and management of water resources. Pani Panchayats & Self Help Groups reflects public participation in decision making on important issues and activities in relation to use and management water resources.
- Central Ground Water Authority (CGWA) has been constituted under Section 3(3) of the "Environment (Protection) Act, 1986" for the purpose of regulation and control of ground water development and management in the Country. CGWA has advised States/Uts to take measures to promote/adopt artificial recharge to ground water / rain water harvesting. CGWA grants No Objection Certificates (NOCs) for ground water abstraction to Industries, Infrastructure units and Mining projects in feasible areas in certain States/Uts where regulation is not being done by the respective State/Uts.
- Master Plan for Artificial Recharge to Groundwater- 2020 has been prepared by CGWB in consultation with States/Uts which is a macro level plan indicating various structures for the different terrain conditions of the country including estimated cost. The Master Plan envisages construction of about 1.42 Crore Rain water harvesting and artificial recharge structures in the Country to harness 185 Billion Cubic Metre (BCM) of monsoon rainfall.
- Pradhan Mantri Krishi Sinchai Yojana (PMKSY) is a Centrally Sponsored Scheme which addresses convergence of investments in irrigation at the field level and targets to expand the cultivable area under assured irrigation. PMKSY aims to enhance physical access of water on farm and expand cultivable area under assured irrigation, improve on-farm water use efficiency, introduce sustainable water conservation practices, etc. The scheme further aims to increase ground water recharge, increased availability of drinking water, improvement of catchment of tank commands etc.
- Department of Agriculture & Farmers Welfare (DA&FW) is implementing Centrally Sponsored Scheme of Per Drop More Crop (PDMC) in the country from 2015-16. During the year 2015-16 to 2021-22, the PDMC was implemented as a component of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY). From the year 2022-23, the PDMC is being implemented under the Rashtriya Krishi Vikas Yojana (RKVY). PDMC focuses on enhancing water use efficiency at farm level through Micro Irrigation namely Drip and

Sprinkler Irrigation Systems. Out of the total micro-irrigation potential of 72 million hectares of the country, an area of 13.8 million hectares has been covered till date.

- The Ministry of Jal Shakti has set up the Bureau of Water Use Efficiency (BWUE) under the National Water Mission on 20.10.2022 to act as a facilitator for promotion of improving water use efficiency across various sectors namely irrigation, drinking water supply, power generation, industries, etc. In the country. The Bureau engages with various stakeholders in developing standards, implement, prepare case studies, make necessary regulatory directions to promote water use efficiency, assessment of water footprint and water auditing in agriculture sector, showcasing national/international best practices and evolving innovative mechanism to secure community participation.
- National Water Mission (NWM) has undertaken baseline studies for irrigation projects and benchmarking studies for industries on water use efficiency through reputed institutes. Further, the 'Sahi Fasal' campaign of NWM has created mass awareness about efficient use of water. Sahi Fasal promotes crops, which are suited to the agro-climatic zone keeping in view water availability.
- Department of Water Resources, River Development & Ganga Rejuvenation (DoWR, RD&GR) with technical assistance from the Asian Development Bank (ADB) has taken up a new initiative called 'Support for Irrigation Modernization Programme' (SIMP) for application of national and international best practices for modernizing Major & Medium Irrigation (MMI) projects in India to improve water use efficiency and crop water productivity.
- The 1<sup>st</sup>All India Annual States' Ministers Conference on Water 'Vision@2047' was organized in 2023 with an objective to deliberate on Water Vision for India for the next 25 years and to discuss way forward to optimally utilize water resources for holistic economic and human development in a sustainable manner.

**Way forward:**

Various other initiatives are being taken up for awareness generation and public participation across the country. In addition River Basin Authorities needs to be established.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>c. Pollution control</b> <sup>37</sup> from the national level.	<b>No</b> management instruments being implemented.	Use of management instruments is <b>limited</b> and only through <b>short-term</b> / ad-hoc projects or similar.	<b>Some</b> management instruments implemented on a more <b>long-term</b> basis, but with <b>limited</b> coverage across sectors and the country.	Management instruments are implemented on a <b>long-term</b> basis, with <b>adequate</b> coverage across sectors and the country.	Management instruments are implemented on a long-term basis, with <b>very good</b> coverage across sectors and the country, and are <b>effective</b> .	Management instruments are implemented on a long-term basis, with <b>excellent</b> coverage across sectors and the country, and are <b>highly effective</b> .
Score	<b>70</b>					

**Status and progress:**

- The National River Conservation Plan (NRCP), has been supplementing the efforts of the States/UTs by providing financial and technical assistance in abatement of pollution in identified stretches of rivers excluding river Ganga and its tributaries which is covered under Namami Gange Program, on cost sharing basis. etc. Till February 2023, NRCP has covered polluted stretches on 36 rivers in 80 towns spread over 16 States in the country with the project sanctioned cost of Rs. 6248.16 Crore (INR 62.5 billion), and inter-alia, a sewage treatment capacity of 2746 Million Litres per Day (MLD) has been created.
- Under National Water Quality Monitoring Programme (NWQMP), Central Pollution Control Board (CPCB), in association with State Pollution Control Boards (SPCBs) / Pollution Control Committees (PCCs), monitors water quality of lakes at 378 locations, ponds at 138 locations and tanks at 106 locations. Further, the bathing water quality of lakes, tanks and ponds are verified with the Primary Water Quality Criteria for Outdoor Bathing (PWQC) notified by the Ministry of Environment, Forest & Climate Change under the Environment (Protection) Rules, 1986.
- Under Namami Gange Programme, a comprehensive set of interventions such as wastewater treatment, solid waste management, river front management (Ghats and Crematoria development), e-flow, afforestation, biodiversity conservation and Public Participation etc. have been taken up for rejuvenation of river Ganga and its tributaries. Since untreated domestic/industrial wastewater is the main reason for pollution in the river, 192 sewerage infrastructure projects have been taken up for creation & rehabilitation of 6030 Million Litres per Day (MLD) of Sewage Treatment Plant (STP) capacity. Namami Gange Mission was recognized as one of the world's top 10 ecosystem restoration flagships at a function in the 15th Conference of Parties (COP15) to the Convention on Biodiversity (CBD) in Montreal, Canada on 14th December 2022, the World Restoration Day.
- Central Water Commission (CWC) monitors water quality at 764 key locations covering all the river basins of India. CWC is also maintaining a Three Tier Laboratory System for analysis of the parameters.
  - The Level- I Laboratories are located at 378 nos. of field water quality monitoring stations on major rivers of India where physical parameters such as temperature, colour, odour electrical conductivity, total dissolved solids, pH and dissolved oxygen of river water are monitored and observed.
  - The Level- II Laboratories – 18 nos. at selected Division Offices to analyze 25 nos. of physio-chemical characteristics and bacteriological parameters of river water.
  - The Level-III Laboratories- 5 nos. are functioning at Varanasi, New Delhi, Guwahati, Hyderabad and Coimbatore, where 41 parameters including heavy metals/toxic parameters are being analysed.

**Way forward:**

Various other initiatives are being taken up for controlling water pollution across the country.

<sup>37</sup>Includes regulations, water quality guidelines, water quality monitoring, economic tools (e.g. taxes and fees), water quality trading programmes, education, consideration of point and non-point (e.g. agricultural) pollution sources, construction and operation of wastewater treatment plants, watershed management. Coordination with SDG indicator 6.3.2 Focal Point and results is encouraged when answering this question.

<b>d. Management of water-related ecosystems and biodiversity</b> <sup>38</sup> from the national level.	<b>No</b> management instruments being implemented.	Use of management instruments is <b>limited</b> and only through <b>short-term</b> / ad-hoc projects or similar.	<b>Some</b> management instruments implemented on a more <b>long-term</b> basis, but with <b>limited</b> coverage across different ecosystem types and the country.	Management instruments are implemented on a <b>long-term</b> basis, with <b>adequate</b> coverage across different ecosystem types and the country. Environmental Water Requirements (EWR) analysed in some cases.	Management instruments are implemented on a long-term basis, with <b>very good</b> coverage across different ecosystem types and the country, and are <b>effective</b> . EWR analysed for most of country.	Management instruments are implemented on a long-term basis, with <b>excellent</b> coverage across different ecosystem types and the country, and are <b>highly effective</b> . EWR analysed for whole country.
Score	<b>70</b>					

**Status and progress:**

- CWC has formulated comprehensive Guidelines for preparing Operation and Maintenance Manual. The guidelines encompasses the sustainable management of water related ecosystem and biodiversity.
- Ministry of Jal Shakti, Government of India has released Water Bodies First-Census Report in April, 2023. The Census provides a comprehensive inventory of India's water resources, including natural and man-made water bodies like; ponds, tanks, lakes and more and also data on the encroachment of water bodies. As per the Census-2023, 24.20 lakh water bodies have been enumerated in the country, out of which 97.10% (23.50 lakh) are in the rural areas and only 2.90% (69,485) are in the urban areas.
- Ministry of Environment, Forest and Climate Change (MoEF& CC) has enacted Wildlife Protection Act to provide protection for wild animals, birds or ancillary or incidental thereto with a view to ensuring the ecological and environment security of the country. ([https://liddashboard.legislative.gov.in/sites/default/files/A1972-53\\_0.pdf](https://liddashboard.legislative.gov.in/sites/default/files/A1972-53_0.pdf))
- Further, the National Forest Policy formulated in 1988 is targeted to have a minimum of one-third of the land area of the country forest or tree cover. In the Hills and Mountains Region, the aim should be to maintain two-third of the area under such cover in order to prevent erosion and land degradation to ensure the stability of the fragile eco-system.
- MoEF&CC notified Wetlands (Conservation & Management) Rules, 2017 for establishing authorities in this regard.
- Environment Protection Act, 1986 is designed to provide co-ordination of Central & State Authorities to curb the pollution in water bodies.
- MoEF&CC is currently implementing National Plan for Conservation of Aquatic Eco-systems (NPCA) scheme for conservation and management of wetlands (includes lakes) in the country on cost sharing basis between Central Government and respective State Governments.
- Repair, Renovation & Restoration (RRR) of Water Bodies - The scheme envisages comprehensive improvement of selected tank systems including de-silting of water bodies, improvement of catchment areas of tank commands, increase in storage capacity of water bodies, ground water recharge, improvement in agriculture, horticulture productivity, and development of tourism, cultural activities and increased availability of drinking water. Presently this scheme is part of Har Khet Ko Pani (HKKP) component of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY).
- The National River Conservation Directorate, functioning under the Department of Water Resources, River Development & Ganga Rejuvenation, and Ministry of Jal Shakti providing financial assistance to the State Government for conservation of rivers under the Centrally Sponsored Schemes of 'National River Conservation Plan (NRCP)'. National River Conservation Plan to the State Governments/ local bodies to set up infrastructure for pollution abatement of rivers in identified polluted river stretches based on proposals received from the State Governments/ local bodies.
- National Water Policy, 2012 has stated ecological needs of the river to be determined, through scientific study, recognizing that the natural river flows are characterized by

<sup>38</sup>Water-related ecosystems include rivers, lakes and aquifers, as well as wetlands, forests and mountains. Management of these systems includes tools such as management plans, the assessment of Environmental Water Requirements (EWR), and protection of areas and species, to ensure ecosystem functions and services. Monitoring includes measuring extent and quality of the ecosystems over time. Consider coordination with SDG indicator 6.6.1 Focal Point and results, as well as with the post-2020 Global Biodiversity Framework (under the Convention on Biological Diversity), when answering this question.



low or no flows, small floods (freshets), large floods, etc., and should accommodate developmental needs. A portion of river flows should be kept aside to meet ecological needs ensuring that the low and high flow releases are proportional to the natural flow regime, including base flow contribution in the low flow season through regulated ground water use.

- Under Namami Gange Program extended up to March 2026, a comprehensive set of interventions such as; waste water treatment, solid waste treatment, river front management (Ghats & crematoria development), e-flow, afforestation, bio-diversity conservation and public participation etc. Have been taken up for rejuvenation of the River Ganga and its tributaries.
- In addition, various other initiatives are being taken up for management of water related ecosystems and biodiversity across the country. In addition River Basin Authorities needs to be established.

**Way forward:**

In a vast country like India there are always conflicts between various demands, including that for river conservation with the focus on improving water use efficiencies, the management of water in this regard shall further improve as availability of water shall improve.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>e. Management instruments to reduce impacts of water-related disasters<sup>39</sup></b> from the national level.	<b>No</b> management instruments being implemented.	Use of management instruments is <b>limited</b> and only through <b>short-term</b> / ad-hoc projects or similar.	<b>Some</b> management instruments implemented on a more <b>long-term</b> basis, but with <b>limited</b> coverage of at-risk areas.	Management instruments are implemented on a <b>long-term</b> basis, with <b>adequate</b> coverage of at-risk areas and groups.	Management instruments are implemented on a long-term basis, with <b>very good</b> coverage of at-risk areas and groups, and are <b>effective</b> .	Management instruments are implemented on a long-term basis, with <b>excellent</b> coverage of at-risk areas and groups, and are <b>highly effective</b> .
Score	<b>90</b>					

**Status and progress:**

- Management Instruments can cover understanding disaster risk, strengthening disaster risk governance, investing in disaster risk reduction and enhancing disaster preparedness.
  - National Disaster Management Authority (NDMA) Guidelines on Management of Floods was prepared in January, 2008.
  - National Disaster Management Guidelines on management of Urban Flooding was prepared in September, 2010.
  - National Disaster Management Plan (NDMP)-2016 has been updated in November, 2019.
  - Roadmap for Mitigation of Urban Flood – The roadmap was prepared under the sub-heads, viz (a) Warning; (b) Drainage; (c) Urban Water Bodies; (d) Urban Planning; and, (e) Response and Capacity-Building.
  - Section 37 of the DMA-2005 provides that every Ministry or Department of the Government of India shall prepare a Disaster Management Plan (DMP), specifying inter-alia the measures to be taken for prevention and mitigation of disasters.
  - Section 23 of DMA-2005 provides for preparation of State Disaster Management Plan for every State/UT. The Plan shall inter-alia include the measures to be adopted for prevention and mitigation of disasters
  - NDMA awarded one project to The Energy & Resources Institute (TERI) for development of Flood Early Warning system for Guwahati Town for the use of Guwahati Municipal Corporation. The system will run/tested by TERI Team before handing over the final product to NDMA/Assam, SDMA.
  - For effective co-ordination and response during disaster, NDMA conducts State level/ Multi-State disaster specific Mock Experiences (MEs), including floods. Such MEs are based around the hazard risk vulnerability of the State/UT. Since inception, NDMA has conducted about 895 such MEs for all the disasters across India.
  - NDMA is implementing Aapda Mitra Scheme covering 30 Flood Prone Districts of 25 States of India to train 6000 Community Volunteers (200 per district) in disaster response districts and provide them a Personal Protection Equipment Kit with the aim to provide the volunteers with the skills that they would need to respond to their community's immediate needs in the aftermath of a disaster there, by enabling them to undertake basic relief and rescue tasks during emergency situations such as floods, flash-floods and urban flooding. So far, out of 6,000 volunteers, 5,116 have been trained.
- Further, CWC is entrusted with monitoring of flood situation in the country during designated flood period by observing water levels/ discharges along the major rivers in the country and issuing flood forecasts to the local administration/ project authorities/ State Governments and other Central Ministries such as Home Ministry, NDMA/ NDRF etc. Flood Forecasting Network covers 333 stations, which help the user agencies in deciding mitigating measures like evacuation of people and shifting their movable property to

<sup>39</sup> 'Management instruments' can cover: understanding disaster risk; strengthening disaster risk governance; investing in disaster risk reduction; and enhancing disaster preparedness. 'Impacts' include social impacts (such as deaths, missing persons, and number of people affected) and economic impacts (such as economic losses in relation to GDP). 'Water-related disasters' include disasters that can be classified under the following: Hydrological (flood, landslide, wave action); Meteorological (convective storm, extratropical storm, extreme temperature, fog, tropical cyclone); Climatological (drought, glacial lake outburst, wildfire); and severe pollution events. Coordination with SDG indicator 11.5.1 Focal Point and results is encouraged when answering this question.

safer locations. The Inflow Forecasts at reservoirs are used by the dam authorities in timely operation of reservoir gates for safe flood discharges downstream as well as to ensure adequate storage in the reservoirs for meeting irrigation and hydropower generation demands during non-monsoon period.

- Dam Safety Act was passed in 2021 to provide for surveillance, inspection, operation and maintenance of the specified dam for prevention of dam failure related disasters and to provide for institutional mechanism to ensure their safe functioning and for matters connected therewith or incidental thereto.
- CWC has published Guidelines for Developing Emergency Action Plans (EAP) for Dams in 2016, comprising all elements of an EAP; contains inundation maps to show the disaster management authorities the critical areas for providing necessary relief and taking rescue actions in case of an emergency. For these reasons, EAPs provide a mechanism for coordination among all the agencies and defines their roles and responsibilities and the actions to be taken to minimize loss of life and damage to environment and property.
- In order to ensure sustainable development from water resources the Government of India have enacted various Acts and Legislations. Prominent among these is the Environmental (Protection) Act, 1986 through which the Government has acquired wide powers for protecting the environment. As per this Act, the State Governments/Project Authorities are required to submit Environmental Impact Assessment Statements (EIS) and Environmental Management Plans (EMP) for obtaining environmental clearance to the project. It is also mandatory to get clearance from forest angle (if forest land is involved in the project) in addition to environmental clearance.
- Government of India, with financial assistance from the World Bank initiated Dam Rehabilitation and Improvement Project (DRIP) in with an objective to improve the safety and operational performance of selected existing dams along with dam safety institutional strengthening with system wide management approach. This Scheme addressed overarching pillars of dam safety like structural integrity, surveillance and maintenance, instrumentation and monitoring, design intrinsic risks, natural hazard risks, emergency and operational planning with adequate provision of capacity building including physical rehabilitation.
- The Flood Management Programme (FMP) is a scheme of Government of India wherein central assistance is provided to State Governments for taking up works related to river management, flood control, anti-erosion, drainage development, flood proofing, restoration of damaged flood management works and anti-sea erosion.
- Some of the measures taken for combating sea erosion and protection of India's coastal areas and coastal communities are as follows:
  - The Ministry of Environment, Forest and Climate Change (MoEFCC) has notified Coastal Regulation Zone Notification, 2019 with a view to conserve and protect coastal stretches, marine areas and to ensure livelihood security to the fisherman other local communities. As per CRZ notification, 2019, certain coastal areas were declared as coastal regulation zone, wherein setting up of industries and expansion of industries are prohibited activities and other developmental activities/projects are regulated/ permitted as per provisions of the said notification. The notification also provides for 'No Development Zones' (NDZ) along various categories of coastal areas to protect India's coastline from encroachment, erosion and accretion.
  - MoEFCC has delineated the hazard line for the entire coast of the country. The hazard line is indicative of the shoreline changes, including sea level rise due to climate change. This line is to be used by agencies in Coastal States as a tool for Disaster Management including planning of adaptive and mitigation measures. The hazard line features in the new Coastal Zone Management Plans of the coastal States / Union territories approved by the MoEFCC.
  - A national strategy for coastal protection along with guidelines has been framed for all Coastal States and Union Territories by MoEFCC.
  - The Flood Management scheme of Ministry of Jal Shakti, including anti-sea erosion schemes, are planned and executed by the State Governments with their own resources as per priorities of States. Union Government renders assistance to states which is technical, advisory, catalytic and promotional in nature.
  - Considering the importance of collection of data on coastal processes towards coastal protection measures, a new component "Coastal Management Information System (CMIS)" was initiated under the Central Sector Plan Scheme "Development of Water Resources Information System". CMIS is a data collection activity carried out to collect near shore coastal data which can be used in planning, design, construction and maintenance of site specific coastal protection structures at vulnerable Coastal stretches.

#### **Climate Change Considerations:**

The National Action Plan on Climate Change (NAPCC) envisages a National Water Mission to ensure Integrated Water Resource Management helping to conserve water, minimize wastage and ensure more equitable distribution both across and within states. The Mission will take into account the provisions of the National Water Policy and develop a framework to optimize water use by increasing water use efficiency by 20% through regulatory mechanisms with differential entitlements and pricing. It will seek to ensure that a considerable share of the water needs of urban areas are met through recycling of waste water, and ensuring that the water requirements of coastal cities with inadequate alternative sources of water are met through adoption of new and appropriate technologies such as low temperature desalination technologies that allow for the use of ocean water. The National Water

Policy would be revisited in consultation with States to ensure basin level management strategies to deal with variability in rainfall and river flows due to climate change. This will include enhanced storage both above and below ground, rainwater harvesting, coupled with equitable and efficient management structures. The Mission will seek to develop new regulatory structures, combined with appropriate entitlements and pricing. It will seek to optimize the efficiency of existing irrigation systems, including rehabilitation of systems that have been run down and also expand irrigation, where feasible, with a special effort to increase storage capacity. Incentive structures will be designed to promote water-neutral or water- positive technologies, recharging of underground water sources and adoption of large scale irrigation programmes which rely on sprinklers, drip irrigation and ridge and furrow irrigation.”

The water resources situation, its development, management and availability vary considerably from basin to basin. Many of the identified strategies/actions to achieve the goals of the National Water Mission are required to be taken by the State Governments/Union Territories. In this context, the State Specific Action Plans for Water Sector aligned with the State Action Plan on Climate Change are being formulated by the States under the National Action Plan for Climate Change (NAPCC) which would give the holistic roadmap to achieve the desired goals of Integrated Water Resource Management including water related disaster management.

**Way forward:**

Necessary measures are taken to enhance engagements with various stakeholders.

3.2 What is the status of management instruments to support IWRM implementation at other levels?							
		Degree of implementation (0 – 100)					
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>a. Basin management instruments.</b> <sup>40</sup>		<b>No</b> basin level management instruments being implemented.	Use of basin level management instruments is <b>limited</b> and only through <b>short-term</b> / ad-hoc projects.	<b>Some</b> basin level management instruments implemented on a more <b>long-term</b> basis, but with <b>limited</b> geographic and stakeholder coverage.	Basin level management instruments implemented on a more <b>long-term</b> basis, with <b>adequate</b> geographic and stakeholder coverage.	Basin level management instruments implemented on a more long-term basis, with <b>effective</b> outcomes and <b>very good</b> geographic and stakeholder coverage.	Basin level management instruments implemented on a more long-term basis, with <b>highly effective</b> outcomes and <b>excellent</b> geographic and stakeholder coverage.
	Score	<b>70</b>					
<b>Status and progress:</b>							
<ul style="list-style-type: none"> <li>• Brahmaputra Board (BB), Krishna River Management Board (KRMB), Godavari River Management Board (GRMB), Damodar Valley Corporation (DVC), Bhakra Beas Management Board (BBMB), Tungabhadra Board (TB), Narmada Control Authority (NCA) &amp; Bansagar Control Board (BCB) are such instruments based in basin both at the National and State level which have been used for basin management. River Basin Plans have been developed from time to time for various basins like Ganga Basin Plan, Brahmaputra Master Plan, Tapi River Basin Management Plan, Brahmani-Baitarni IWRM Plan, Water Sharing and Management arrangements among the co-basin states of the Narmada, Cauvery, Godavari, Tungbhadra, Damodar, Betwa, Bansagar etc.</li> <li>• Further, Basin level organisations/ corporations have been created by various States to act on the principles of IWRM.</li> <li>• NWIC is encouraging and supporting states to establish State Water Informatics Centres (SWIC) with the goal of optimising the use of water data within states and adding value to existing data through standardisation, increased interoperability, improved data validation and integration of latest technologies and GIS framework. The basic objective of establishing SWIC is to empower states with digital, validated, on-line water resources information system required for better planning and management of water resources at State level and simultaneously to feed the central system for basin and regional level policy planning and taking strategic decisions based on authentic data analytics.</li> <li>• Hydrological Data and Information collected all across the country is made available online at <a href="https://indiawris.gov.in">https://indiawris.gov.in</a> for access to everyone across the World. Data with respect to the flow in and utilization of the rivers waters is exchanged on monthly basis amongst all the stakeholders and sharing arrangements are implemented effectively.</li> <li>• National Hydrology Project is being implemented with an objective to improve the extent, quality and accessibility of water resources information and to strengthen the capacity of targeted water resources management institutions in India.</li> <li>• The guidelines for IWRM formulated by CWC are being used by various authorities at National and sub-national level.</li> </ul>							
<b>Way forward:</b>							
Work in progress							

<sup>40</sup>Basin and aquifer management: involves managing water at the appropriate hydrological scale, using the surface water basin or aquifer as the unit of management. This may involve basin and aquifer development, use and protection plans. It should also promote multi-level cooperation, and address potential conflict among users, stakeholders and levels of government. To achieve 'Very high (100)' basin and aquifer management scores, surface and groundwater management should be integrated.

<b>b. Aquifer management instruments.</b> <sup>41</sup>	No aquifer level management instruments being implemented.	Use of aquifer level management instruments is <b>limited</b> and only through <b>short-term</b> / ad-hoc projects.	<b>Some</b> aquifer level management instruments implemented on a more <b>long-term</b> basis, but with <b>limited</b> geographic and stakeholder coverage.	Aquifer level management instruments implemented on a more <b>long-term</b> basis, with <b>adequate</b> geographic and stakeholder coverage.	Aquifer level management instruments implemented on a more <b>long-term</b> basis, with <b>effective</b> outcomes and <b>very good</b> geographic and stakeholder coverage.	Aquifer level management instruments implemented on a more <b>long-term</b> basis, with <b>highly effective</b> outcomes and <b>excellent</b> geographic and stakeholder coverage.
	Score	<b>70</b>				

**Status and progress:**

- Water is State Subject as per the Constitution of India. States have their own specific Acts/ laws related to management of Water Resources. Some of the states have already made institutional arrangements specific to their river basins/ sub-basins which have/ are in the process of preparing and managing their water resources as per IWRM.
- National Aquifer Mapping and Management (NAQUIM) Program under Ground Water Management & Regulation (GWM&R) scheme is being implemented by the Central Ground Water Board (CGWB), Government of India in coordination with the State Ground Water Boards and related organisations throughout the country.
- Aquifer Maps and Aquifer Management Plans are prepared and shared with the State Governments and stakeholders even at grass-root levels. The entire mappable area of 25 lakh Sqm. Kms has already been mapped under NAQUIM, till April, 2023. Many of the States/UTs have initiated action on the recommendations of the NAQUIM Program in their respective States/UTs.
- Under NAQUIM-2, the Management Plans prepared are to be further narrowed down to Block level in the scale of 1:10,000 so that the Management Plans can be designed and implemented in an effective way.
- Further, Government of India is implementing the Atal Bhujal Yojana (ATAL JAL) in identified water stressed Gram Panchayats (GPs) pertaining to 80 districts of seven States viz. Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh with an aim to arrest decline in ground water level through community led sustainable groundwater management. The scheme is being implemented from 01.04.2020 for a period of 5 years. One of the important aspect of the scheme is preparation of Water Security Plans (WSPs) at GP level by the communities having details about the water budget and proposed supply side interventions such as check dams, farm ponds, recharge shafts and other artificial recharge / water conservation structures and demand side interventions such as micro-irrigation, crop diversification, use of pipelines etc. These interventions are being executed through convergence of various ongoing Central / State Government Schemes by concerned line departments.

**Way forward:**

Work in progress.

<sup>41</sup>See previous footnote on basin management instruments, which also applies to aquifers.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>c. Data and information sharing within countries at all levels.</b> <sup>42</sup>	No data and information sharing.	<b>Limited</b> data and information sharing on an <b>ad-hoc</b> basis.	Data and information sharing arrangements <b>exist</b> on a more <b>long-term</b> basis between major data providers and users.	Data and information sharing arrangements <b>implemented</b> on a more <b>long-term</b> basis, with <b>adequate</b> coverage across sectors and the country.	Data and information sharing arrangements implemented on a more <b>long-term</b> basis, with <b>very good</b> coverage across sectors and the country.	All relevant data and information are online and freely accessible to all. Appropriate measures are in place to ensure data integrity <sup>43</sup> .
Score	80					
<b>Status and progress:</b>						
<ul style="list-style-type: none"> <li>Kindly refer Para 3.2 (a).</li> <li>Water Sharing and Management arrangements exist among the co-basin states of the Narmada, Cauvery, Godavari, Tungbhadra, Damodar, Betwa, Bansagaretc basins.</li> <li>River Basin Plans have been developed from time to time for various basins like Ganga Basin Plan, Brahmaputra Master Plan, Tapi River Basin Management Plan, Brahmani-Baitarni IWRM Plan etc.</li> </ul>						
<b>Way forward:</b>						
Work in progress						
<b>d. Transboundary data and information sharing between countries.</b>	No data and information sharing.	<b>Limited</b> data and information sharing on an <b>ad-hoc</b> or informal basis.	Data and information sharing arrangements <b>exist</b> , but sharing is <b>limited</b> .	Data and information sharing arrangements <b>implemented adequately</b> .	Data and information sharing arrangements <b>implemented effectively</b> . <sup>44</sup>	All relevant data and information are online and accessible between countries.
Score	90					
<b>Status and progress:</b>						
<ul style="list-style-type: none"> <li>Arrangements for Trans-boundary Water Management and data sharing are effectively implemented by India.</li> <li>Trans-boundary cooperation on water resources is crucial for India and its neighbouring countries due to their shared river basins for management of water scarcity, prevention of conflicts, and promotion of sustainable development in the region. The various trans-boundary water cooperation agreements between India and its neighbours include: <ul style="list-style-type: none"> <li>➤ <b>Indus Water Treaty (Pakistan):</b> The Indus Waters Treaty (1960) governs the sharing of the Indus River's waters between India and Pakistan. The Treaty divided the six major rivers of the basin between the two countries.</li> <li>➤ <b>Ganges Water Sharing Treaty (Bangladesh):</b> The Joint Rivers Commission of India and Bangladesh was constituted in the year 1972 as a bilateral mechanism to address issues of mutual interest on common / border / Trans-boundary Rivers. It was established with a view to maintain liaison in order to ensure the most effective joint effort in maximizing the benefits from common river systems. The JRC is headed by Water Resources Ministers of both the countries. Further, the Ganges Water Sharing Treaty (1996) between India and Bangladesh aims to ensure an equitable distribution of the Ganges' waters.</li> <li>➤ <b>Mahakali Treaty (Nepal):</b> The Mahakali Treaty (1996) outlines water-sharing arrangements for the river's utilization and includes provisions for hydropower development and flood management.</li> </ul> </li> </ul>						

<sup>42</sup>Includes more formal data and information sharing arrangements between users, as well as accessibility for the general public, where appropriate.

<sup>43</sup>[Data integrity](#) is the maintenance of, and the assurance of, data accuracy and consistency over its entire life-cycle.

<sup>44</sup>E.g. institutional and technical mechanisms in place that allow for exchanging data as agreed upon in agreements between riparians (e.g. regional database or information exchange platform with a river basin organization including technical requirements for data submission, institutionalized mechanisms for QA and for analysing the data, etc.).

- India has made efforts to engage with its neighbours through bilateral discussions, agreements, and regional forums like the South Asian Association for Regional Cooperation (SAARC) to promote trans-boundary water cooperation. However, ongoing negotiations, mutual understanding, and continuous dialogue are essential to ensure sustainable water management and avoid conflicts in the region
- One of the important areas of cooperation is sharing the flood data from Bhutan, from Nepal, from China, to Bangladesh and to Pakistan on a regular basis under various bilateral agreements.

**Way forward:**

Such mechanism are reviewed regularly as per stipulated schedule.



## 4 Financing

This section concerns the adequacy of the finance available for water resources development and management from various sources.

Finance for investment and recurrent costs can come from many sources, the most common being central government budget allocations to relevant ministries and other authorities. Other sources include fees and tariffs levied on water users, polluter fees or grants from philanthropic or similar organisations. In-kind support should not be included as it is not easily measurable but can be mentioned in the 'Status and progress' field. Finance from [Official Development Assistance \(ODA\)](#) specifically for water resources should be considered part of the government budget. Note that the level of coordination between ODA and national budgets is tracked by the 'means of implementation' SDG indicator 6.a.1: "Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan", as part of reporting on Target 6.a: "By 2030, expand international cooperation and capacity-development support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies".

**Please take note of all footnotes as they contain important information and clarification of terms used in the questions and thresholds.**

Enter your score, **in increments of 10**, from 0-100, or "n/a" (not applicable), in the yellow cell immediately below each question. Enter free text in the "Status and progress" and "Way forward" fields below each question as advised in the Introduction in Part 1. This will help achieve agreement among different stakeholders in the country, as well as help monitor progress over time. Suggestions for the type of information that may be useful are provided. You may also provide further information you think is relevant, or links to further documentation.

4. Financing						
	Degree of implementation (0 – 100)					
	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>4.1 What is the status of financing for water resources development and management at the national level?</b>						
<b>a. National budget</b> <sup>45</sup> for water resources <b>infrastructure</b> <sup>46</sup> (investment and recurrent costs).	<b>No budget</b> allocated in national investment plans.	<b>Some budget</b> allocated but only partly covers planned investments.	<b>Sufficient budget</b> allocated for planned investments but insufficient funds disbursed or made available.	Sufficient budget allocated and <b>funds disbursed for most</b> planned programmes or projects.	Sufficient funds disbursed for investment and recurrent costs, and <b>being utilised in all</b> planned projects. Accountability mechanism(s) <sup>47</sup> in place.	Budget <b>fully utilised</b> for investment and recurrent costs, post-project evaluation carried out, budgets reviewed and revised. Accountability mechanisms are effective.
Score	<b>80</b>					
<b>Status and progress:</b> <ul style="list-style-type: none"> <li>Each year, a revised budget gets allocated through demand of grants in the Parliament. Sufficient budget is disbursed according to the planned activities in water sector and its utilization is also monitored periodically. There are various schemes which are funded at National level and executed by State/ Local Bodies e.g. Pradhan Mantri Krishi Sinchai Yojna, Jal Jeevan Mission, Atal Bhujal Yojana, Jal Shakti Abhiyan etc.</li> <li>The total outlay for JJM and AMRUT Mission 2.0 is INR 3,60,000 Crore and INR 2,99,000 Crore respectively.</li> <li>AMRUT 2.0 will promote circular economy of water through development of City Water Balance Plan (CWBP) for each city focusing on recycle/reuse of treated sewage, rejuvenation of water bodies and water conservation. It will help cities to identify scope for projects focusing on universal coverage of functional water tap connections, water source conservation, rejuvenation of water bodies and wells, recycle/reuse of treated used water, and rainwater harvesting. Based on the projects identified in CWBP, Mission envisages to make cities 'water secure' through circular economy of water.</li> <li>The government has provided a budgetary allocation for rural job guarantee scheme, the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA) of INR 61,032.65 Crore for 2023-24 in the Union Budget.</li> </ul>						
<b>Way forward:</b> Mechanisms are put into operation for full utilization of allocated funds and post project evaluation.						

<sup>45</sup>Allocations of funding for water resources may be included in several budget categories or in different investment documents. Respondents are thus encouraged to examine different sources for this information. When assessing the allocations respondents should take account of funds from government budgets and any co-funding (loans or grants) from other sources such as banks or donors.

<sup>46</sup>Infrastructure includes 'hard' structures such as dams, canals, irrigation schemes, flood control, storm water drainage etc., as well as 'soft' or 'green' infrastructure and environmental measures such as catchment management, sustainable drainage systems etc. The focus should be on infrastructure related to 'broader' water resources management, as opposed to infrastructure for drinking water supply or sanitation services (WaSH) (noting that WaSH financing is covered in the [GLAAS surveys](#)). Any differences in budget between water resources and WaSH infrastructure should be explained in the 'status and progress' field. Budgets should cover initial investments and recurrent costs of operation and maintenance.

<sup>47</sup>See description of "accountability mechanisms" in Annex A: Glossary.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>b. National budget for IWRM elements</b> <sup>48</sup> (investments and recurrent costs).	<b>No budget</b> allocations made for investments and recurrent costs of the IWRM elements.	<b>Allocations</b> made for <b>some</b> of the IWRM elements and implementation at an early stage.	Allocations made for <b>at least half</b> of the IWRM elements but insufficient for others.	Allocations for <b>most</b> of the IWRM elements and some implementation under way.	Allocations include <b>all</b> IWRM elements and implementation regularly carried out (investments and recurrent costs). Accountability mechanism(s) in place.	Planned budget allocations for all elements of the IWRM approach <b>fully utilised</b> , budgets reviewed and revised. Accountability mechanisms are effective.
Score	<b>80</b>					

**Status and progress:**

Under the budget allocated to Union Ministry of Jal Shakti, various initiatives and programmes have been implemented for catering to the IWRM and accelerating water resources planning and management which are as under:

- Jal Shakti Abhiyan (JSA)– Under JSA, 657 Districts out of 767 Districts of the country have set up Jal Shakti Kendras for facilitating & sensitizing the citizens about rain water conservation measures in the districts. More than 1.30 lakh Kisan Melas/Training programs held, more around 377 District Scientific Water Conservation Plans have been prepared, and 13 million saplings planted since the launch of the Campaign in 2019. Till date over 10 million water related structures have been created through community participation and ownership.
- Jal Jeevan Mission (JJM)–Following the bottom-up approach, JJM is being implemented as a decentralized, demand-driven community-managed programme. More than 5.24 lakh Paani Samitis/ Village Water and Sanitation Committees (VWSC) have been formed and over 5.12 lakh (0.51 million) Village Action Plan have been prepared under Jal Jeevan Mission to manage, operate, and maintain in-village water supply infrastructure.
- Atal Bhujal Yojana (ATAL JAL) aims to bring in behavioural changes in the community, from the prevailing attitude of consumption to conservation & smart water management. Communities at the Gram panchayat level are being assisted in collecting water related data and then preparing water budget and Water Security Plans (WSPs) at Gram Panchayat level and proposed supply side interventions such as check dams, farm ponds, recharge shafts and other artificial recharge / water conservation structures and demand side interventions such as micro-irrigation, crop diversification, use of pipelines etc.

<sup>48</sup> 'IWRM elements' refers to all the activities described in sections 1, 2 and 3 of this survey that require funding, e.g. policy, law making and planning, institutional strengthening, coordination, stakeholder participation, capacity development, and management instruments such as research and studies, gender and environmental assessments, data collection, monitoring etc.

- Amrit Sarovar- 'Jan Bhagidari' has been at the core of Amrit Sarovar Mission and involves people's participation at all levels by forming User group. These User Groups are fully involved during the entire process of development of Amrit Sarovar viz. feasibility assessment, execution and its utilisation. States/UTs are leveraging the participation of freedom fighters, eldest members of the panchayat, family members of freedom fighters and martyrs, Padma Awardees, etc. for the purposes like laying of foundation stone of the designated Amrit Sarovar sites, flag hoisting on important dates like 26th January and 15th August. Till date, rejuvenation of 66466 Amrit Sarovars have been completed.
- Namami Gange Programme was launched in June 2014 for a period up to 31st March, 2021 to rejuvenate river Ganga and its tributaries. Under Namami Gange Programme, a comprehensive set of interventions such as wastewater treatment, solid waste management, river front management (Ghats and Crematoria development), e-flow, afforestation, biodiversity conservation and Public Participation etc. have been taken up for rejuvenation of river Ganga and its tributaries. Various awareness activities through rallies, campaigns, exhibitions, shramdaan, cleanliness drives, competitions, plantation drives and development and distribution of resource materials have been organized and for wider publicity the mass mediums such as TV/Radio, print media advertisements, advertorials, featured articles have been published.
- Various States have Water Users Associations (WUAs) which actively participate in policy, planning and management of water resources. Pani Panchayats & Self Help Groups reflects public participation in decision making on important issues and activities in relation to use and management water resources.
- Central Ground Water Authority (CGWA) has been constituted under Section 3(3) of the "Environment (Protection) Act, 1986" for the purpose of regulation and control of ground water development and management in the Country. CGWA has advised States/UTs to take measures to promote/adopt artificial recharge to ground water / rain water harvesting. CGWA grants No Objection Certificates (NOCs) for ground water abstraction to Industries, Infrastructure units and Mining projects in feasible areas in certain States/UTs where regulation is not being done by the respective State/UTs.
- Master Plan for Artificial Recharge to Groundwater- 2020 has been prepared by CGWB in consultation with States/UTs which is a macro level plan indicating various structures for the different terrain conditions of the country including estimated cost. The Master Plan envisages construction of about 1.42 Crore Rain water harvesting and artificial recharge structures in the Country to harness 185 Billion Cubic Metre (BCM) of monsoon rainfall.
- Pradhan Mantri Krishi Sinchai Yojana (PMKSY) is a Centrally Sponsored Scheme which addresses convergence of investments in irrigation at the field level and targets to expand the cultivable area under assured irrigation. PMKSY aims to enhance physical access of water on farm and expand cultivable area under assured irrigation, improve on-farm water use efficiency, introduce sustainable water conservation practices, etc. The scheme further aims to increase ground water recharge, increased availability of drinking water, improvement of catchment of tank commands etc.
- Department of Agriculture & Farmers Welfare (DA&FW) is implementing Centrally Sponsored Scheme of Per Drop More Crop (PDMC) in the country from 2015-16. During the year 2015-16 to 2021-22, the PDMC was implemented as a component of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY). From the year 2022-23, the PDMC is being implemented under the Rashtriya Krishi Vikas Yojana (RKVY). PDMC focuses on enhancing water use efficiency at farm level through Micro Irrigation namely Drip and Sprinkler Irrigation Systems. Out of the total micro-irrigation potential of 72 million hectares of the country, an area of 13.8 million hectares has been covered till date.
- The Ministry of Jal Shakti has set up the Bureau of Water Use Efficiency (BWUE) under the National Water Mission on 20.10.2022 to act as a facilitator for promotion of improving water use efficiency across various sectors namely irrigation, drinking water supply, power generation, industries, etc. in the country. The Bureau engages with various stakeholders in developing standards, implement, prepare case studies, make necessary regulatory directions to promote water use efficiency, assessment of water footprint and water auditing in agriculture sector, showcasing national/international best practices and evolving innovative mechanism to secure community participation.
- National Water Mission (NWM) has undertaken baseline studies for irrigation projects and benchmarking studies for industries on water use efficiency through reputed institutes. Further, the 'Sahi Fasal' campaign of NWM has created mass awareness about efficient use of water. Sahi Fasal promotes crops, which are suited to the agro-climatic zone keeping in view water availability.
- Department of Water Resources, River Development & Ganga Rejuvenation (DoWR, RD&GR) with technical assistance from the Asian Development Bank (ADB) has taken up a new initiative called 'Support for Irrigation Modernization Programme' (SIMP) for application of national and international best practices for modernizing Major & Medium Irrigation (MMI) projects in India to improve water use efficiency and crop water productivity.

**Climate change considerations:**

Sufficient budget have been allocated to different ministries including Ministry of Jal Shakti, Ministry of Environment, Forests and Climate Change , etc., to tackle the challenges of climate change. The water resources situation, its development, management and availability vary considerably from basin to basin. Many of the identified strategies/actions to achieve the goals of the National Water Mission are required to be taken by the State Governments/Union Territories. In this context, the State Specific Action Plans for Water Sector aligned with the State Action Plan on Climate Change are being formulated by the States under the National Action Plan for Climate Change (NAPCC) which would give the holistic roadmap to achieve the desired goals of Integrated Water Resource Management.

**Way forward:**

Mechanisms are put into operation for full utilization of allocated funds and post project evaluation.

4.2 What is the status of financing for water resources development and management at other levels?							
		Degree of implementation (0 – 100)					
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>a. Sub-national or basin budgets for water resources infrastructure</b> <sup>49</sup> (investment and recurrent costs).		<b>No budget</b> allocated in sub-national or basin investment plans.	<b>Some budget</b> allocated in sub-national or basin investment plans but only partly covers planned investments.	<b>Sufficient budget</b> allocated for planned investments in sub-national or basin investment plans, but insufficient funds disbursed or made available.	Sufficient budget allocated and <b>funds disbursed for most</b> planned programmes or projects.	Sufficient funds disbursed, for investment and recurrent costs, and <b>being utilised in all</b> planned projects. Accountability mechanism(s) in place.	Budget <b>fully utilised</b> , for investment and recurrent costs, post-project evaluation carried out, budgets reviewed and revised. Accountability mechanisms are effective.
Score	<b>80</b>						
<b>Status and progress:</b> In India, States/UTs have their own budget allocation system in place (together with assistance from the Central Government) and State Water Resources Departments utilize these budgets according to their planned activities along with National Hydrology Project (NHP), Accelerated Irrigation Benefit Program (AIBP), Command Area Development & Water Management (CADWM), National Bank for Agriculture & Rural Development (NABARD), Special Purpose Vehicle Projects (SPVP), etc. for the development of water resources in their respective States/UTs. Accountability mechanism is effective.							
<b>Way forward:</b> Mechanisms are put into operation for full utilization of allocated funds and post project evaluation.							
<b>b. Revenues raised for IWRM elements.</b> <sup>50</sup>		<b>No revenues</b> raised for IWRM elements.	<b>Processes in place</b> to raise revenue but <b>not yet implemented.</b>	<b>Some revenue raised</b> , but generally not used for IWRM activities.	Revenues raised cover <b>some</b> IWRM activities.	Revenues raised cover <b>most</b> IWRM activities. Accountability mechanism(s) in place.	Revenues raised <b>fully cover</b> costs of IWRM activities. Accountability mechanisms are effective.
Score	<b>50</b>						
<b>Status and progress:</b> <ul style="list-style-type: none"> <li>India agricultural needs, low farm holdings requires appropriate support. However, to serve the needs of marginalised and vulnerable sections of society, sometimes it is necessary to provide the same free of cost/nominal cost. However, Various institutional mechanisms such as Water User Associations, Municipal Corporations etc. exist for collection of revenue for planning and implementation of IWRM elements at their specific levels. Accountability mechanism exists.</li> </ul>							
<b>Way forward:</b> Mechanisms are put into operation to enhance the coverage of collection of revenue.							

<sup>49</sup> Refer to footnotes 47 and 48, from question 4.1a.

<sup>50</sup> For 'IWRM elements', see above footnote. **Level:** revenues are likely to be raised from users at the local, basin, or aquifer levels, though may also be raised at other sub-national or national levels (please indicate which level(s) in the status and progress field). **Revenue raising** can occur through public authorities or private sector, e.g. through fees, charges, levies, taxes and 'blended financing' approaches. E.g. dedicated charges/levies on water users (including household level *if* revenues are spent on IWRM elements); abstraction & bulk water charges; discharge fees; environmental fees such as pollution charges, Payment for Ecosystem Services (PES) schemes; and the sale of secondary products and services.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
<b>c. Financing for transboundary cooperation.</b> <sup>51</sup>	<b>No specific funding</b> allocated from the Member State (MS) budgets nor from other regular sources.	MS <b>agreement</b> on country share of contributions <b>in place</b> and in-kind support for the cooperation organisation/arrangement.	<b>Funding less than 50%</b> of that expected as contributions and by regulation.	Funding <b>less than 75%</b> of that expected as contributions and by regulation.	Funding <b>more than 75%</b> of that expected as contributions and by regulation.	<b>Full funding</b> of that expected as contributions and by regulation.
Score	<b>80</b>					
<b>Status and progress:</b> Sufficient funding is made available for financing arrangements for transboundary cooperation.						
<b>Way forward:</b> The funding pattern for transboundary cooperation is regularly updated/ revised in view of the emerging scenarios.						
<b>d. Sub-national or basin budgets for IWRM elements</b> <sup>52</sup> (investment and recurrent costs).	<b>No budget</b> allocations at sub-national or basin level for investments and recurrent costs of IWRM elements.	<b>Allocations</b> made for <b>some</b> of the IWRM elements at sub-national or basin level and implementation at an early stage.	Allocations made for <b>at least half</b> of the IWRM elements at sub-national or basin level but insufficient for others.	Allocations for <b>most</b> of the IWRM elements at sub-national or basin level and some implementation under way.	Allocations include <b>all</b> IWRM elements and implementation regularly carried out (investments and recurrent costs). Accountability mechanism(s) in place.	Planned budget allocations for all elements of the IWRM approach at sub-national or basin level <b>fully utilised</b> , budgets reviewed and revised. Accountability mechanisms are effective.
Score	<b>70</b>					
<b>Status and progress:</b> Allocations/expenditure in water sector keeps focus on IWRM.						
<b>Way forward:</b> Mechanisms are put into operation for full utilization of allocated funds and post project evaluation.						

<sup>51</sup>In this question “Member States (MS)” refers to riparian countries that are parties to the arrangement. “Contributions” refers to the annual share of funds agreed from MS national budgets to support the agreed TB cooperation arrangement. Regular funds obtained from for example, water user fees (e.g. hydropower charges) and polluter-pays fees based on existing regulation are also considered as sustainable funding. As variable and unsustainable, donor support should not be considered in the scoring, but may be referred to in the ‘Status and progress’ and ‘Way forward’ fields.

<sup>52</sup> ‘IWRM elements’ refers to all the activities described in sections 1, 2 and 3 of this survey that require funding, e.g. policy, law making and planning, institutional strengthening, coordination, stakeholder participation, capacity development, and management instruments such as research and studies, gender and environmental assessments, data collection, monitoring etc. This question has been added since the baseline survey, acknowledging the importance of funding being available at more ‘operational’ levels.

## 5 Indicator 6.5.1 score

### How to calculate the indicator 6.5.1 score

Please complete the table below as follows:

1. Calculate the average score of each of the four sections by averaging all question scores in each section, rounded to the nearest whole number.  
*Example: Section average of 41.5 should be rounded to 42. Section average of 70.2 should be rounded to 70.* If 'not applicable' is selected for any question, this should not be included in the indicator calculations, and therefore will not affect the average score. However, questions with a score of '0' (zero) should be included.
2. Calculate the average of the four section scores (whole numbers) to give the overall score for indicator 6.5.1, **rounded to the nearest whole number**.  
*Example: Calculating final IWRM score from four section scores:  $(81 + 63 + 47 + 58) / 4 = 62.25$ . Final 6.5.1 score (rounded to a whole number) = 62.*

Please note an automated calculation template is available [here](#) if required.

Section	Average Scores (all values rounded to nearest whole number)
Section 1 Enabling environment	76
Section 2 Institutions and participation	76
Section 3 Management instruments	76
Section 4 Financing	73
<b>Indicator 6.5.1 score = Degree of IWRM* implementation (0-100)*</b>	<b>75</b>

\* Use rounded section average scores (to the nearest whole number), to calculate the indicator score, and round this to the nearest whole number.

### Interpretation of the score

The score indicates the 'degree of implementation of integrated water resources management', on a scale of 0 to 100, with 0 signifying 'very low' implementation, and 100 signifying 'very high' implementation. However, the true value of the survey to countries lies within the scores, 'status and progress' and 'way forward' fields for each question, as this helps to identify which actions need to be taken to move towards a greater degree of implementation of IWRM.



## Quick QA checklist for the Focal Point

To ensure robustness of the final submission, and to avoid further revisions, you may use this QA checklist to avoid common mistakes in the submission.

*(The checklist is provided to assist Focal Points in the QA process only and does not affect the submission scores in any way).*

The submission cover page contains <b>up to date contact information of the Focal Point</b> (or alternative contact)	<input checked="" type="checkbox"/>
<b>All questions have been answered</b> (either with a score or n/a) in the yellow cells immediately below each question.	<input checked="" type="checkbox"/>
The individual survey questions are <b>scored in increments of 10 or as n/a only</b> . I.e. possible scores are 0,10,20,30,40,50,60,70, 80,90,100 or n/a.	<input checked="" type="checkbox"/>
Explanatory information is provided for all questions in the fields called 'Status and progress' and 'Way forward'.	<input checked="" type="checkbox"/>
Section 5 of the survey has been filled and <b>final score for indicator 6.5.1 has been calculated</b> from the four section average scores, rounded to the nearest whole number (E.g. score 55.5 would be rounded to 56).	<input checked="" type="checkbox"/>
Annex B (Key priorities and targets for IWRM implementation) has been completed.	<input checked="" type="checkbox"/>
Annex C (6.5.1 Country reporting process form) has been completed.	<input checked="" type="checkbox"/>

## Annexes:

### Annex A: Glossary

- **Accountability mechanisms:** provide ways for all partners to hold each other to account on the specific, measurable, time-bound actions they have committed to. In the context of this survey, they may include activities that increase [Transparency, Accountability, and Participation, and strengthen Anti-corruption \(TAP-A\)](#). Together, these form a framework for integrity.<sup>53</sup> For example, in relation to the financing questions in section 4, ‘accountability mechanisms’ typically include mechanisms that make data and information on budgets and expenditures publicly available, and enable participatory budgeting and monitoring of expenditure where appropriate. Such mechanisms should include functions to identify and address corruption and mismanagement.
- **Authorities:** could be ministry or ministries, or other organizations/institutions/departments/agencies/bodies with a mandate and funding from government.
- **Basins:** Includes rivers, lakes and aquifers, unless otherwise specified. For surface water, the term is interchangeable with ‘catchments’ and ‘watersheds’.
- **Federal countries:** Refers to countries made up of federated states, provinces, territories or similar terms.
- **Gender mainstreaming:** Gender mainstreaming is about fully integrating gender perspectives in water planning, management, and decision-making, in a cross-cutting manner. It is not just about increasing women’s representation on committees, or having a general national legal framework on gender equality, although those actions may be part of the overall framework. The dedicated [Gender Checklist](#) can be used as a discussion tool to help stakeholders to agree on the score for question 2.2d, and to inform the ‘status and progress’ and ‘way forward’ responses to that question. The Gender Checklist is derived from the report - [Advancing towards gender mainstreaming in water resources management](#)—which presents examples of some specific mechanisms, practices, and tools that have been developed and used by countries in order to progress with gender mainstreaming in water resources management. These have been grouped into six categories: (1) advocacy, high-level commitment, changing prevailing norms and stereotypes; (2) legislative and policy framework and governance; (3) human capital, financial resources, institutions, and support organisations; (4) women’s participation and parity; (5) monitoring activities to track and assess progress; (6) awareness raising, capacity development, and education.<sup>54</sup>
- **IWRM:** Integrated Water Resources Management (IWRM) is a process that promotes the coordinated development and management of water, land and related resources in order to maximise the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems. IWRM is not an end in itself but a means of achieving three key strategic objectives:
  - efficiency to use water resources in the best way possible;
  - equity in the allocation of water across social and economic groups;

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<sup>53</sup>Source: Water Integrity Network: Integrity Walls. <https://www.waterintegritynetwork.net/integrity-walls-tap/>

<sup>54</sup> Mainstreaming gender in resources management supports a range of targets in the SDGs, including under Goal 5 on achieving gender equality and empowering all women and girls (e.g. [SDG Target 5.5](#)). Furthermore, question 2.2d also addresses the call for gender disaggregated data in the 2030 Agenda (e.g. [SDG Target 17.18](#)).

- environmental sustainability, to protect the water resource base, as well as associated ecosystems.
- **National (level):** Refers to the highest level of administration in a country.
- **Sub-national / state (level):** refers to levels of administration other than national. For federal countries, these are likely to be provinces or states. Non-federal countries may still have sub-national jurisdictions with some responsibility for water resources management, e.g. regions, counties, departments.
- **Programmes:** Nation-wide plans of action with long-term objectives, for example to strengthen monitoring, knowledge sharing and capacity development, with details on what work is to be done, by whom, when, and what means or resources will be used.
- **Transboundary:** Refers to surface and groundwater basins that cross one or more national borders. Only the most important transboundary basins or aquifers that are regarded as significant, in terms of economic, social or environmental value to the country (or neighbouring countries), need to be included in this survey. It is up to countries to decide which ones these are. Where feasible, basins/aquifers included in this survey should be cross-referenced with those included [in 6.5.2 reporting](#), and the focal point for 6.5.2 should be consulted in this process. In the absence of 6.5.2 data or national databases, global databases on transboundary river basins (<http://twap-rivers.org/indicators/>), and [transboundary aquifers](#), may be referred to. If you include a national (sub-basin) as part of a larger transboundary basin, please also include the name of the larger basin. When answering transboundary questions, the majority of most important basins/aquifers must meet the criteria described in each threshold to achieve the score for that threshold.
- **Stakeholders:** In this survey, stakeholders are the main groups important for water resources management, development and use. Examples of stakeholders in each group are given in footnotes as they appear in the survey.
- **Water Resources Management** is the activity of planning, developing, distributing and managing the optimum use of water resources. Ideally, water resource management planning considers all the competing demands for water and seeks to allocate water on an equitable basis to satisfy all uses and demands. An integrated approach (see IWRM) is needed to ensure water resources management is not isolated within sector silos resulting to inefficiencies, conflicts and unsustainable resource use.

## Annex B: Key priorities and targets for IWRM implementation

- 1) What are the **priority action areas**<sup>55</sup> to advance IWRM implementation overall in the country? Include priorities/actions that are ongoing, already planned, and/or those that may be emerging based on the survey results. Where relevant, please also note the status of implementation of the priorities/actions (e.g. giving some indication of necessary follow-up).

Answer: Priority action areas have already been enumerated in the ‘Way Forward’ in the questionnaire section.

### 2) **Target setting**

The intention of the table below is to encourage discussion among stakeholders on the likelihood of reaching the global targets<sup>56</sup>, or on the need to establish national targets. It can also be used to inform regional and global processes about whether countries feel they are on track to meet the global targets or not, and if they prefer to set national targets.

Scores may be the same in both columns. It is also possible to only complete one column, and/or to only provide scores for the overall indicator (bottom row). I.e. use the table as is most useful.

Section	Business-As-Usual (BAU) projected score for 2030*	National target for 2030**
Section 1 Enabling environment	86	91
Section 2 Institutions and participation	86	91
Section 3 Management instruments	86	91
Section 4 Financing	80	85
<b>Indicator 6.5.1 score</b> <b>= Degree of IWRM implementation (0-100)</b>	<b>85<sup>#</sup></b>	<b>90</b>

\* approximate score (or range), based on reporting in 2017, 2020, 2023, current rates of progress, and stakeholder judgement. A simple calculation template is provided in the [calculation template](#) (see ‘Projections-Targets’ worksheet), if useful.

\*\* potential ‘realistic’ score by 2030, if certain measures are put in place, for example as described in question 1 of this annex. Please indicate if these are existing targets, or informal targets defined during this monitoring process.

<sup>#</sup>India is continuously working for improvement in water sector and present state can’t be simply said to be ‘business as usual’ as per its usual meaning.

<sup>55</sup> Priority action areas: could include any of the aspects covered in this survey, or others. E.g. improving cross-sectoral coordination; raising the profile of the importance of IWRM implementation at the highest planning and financing levels (advocacy); developing or implementing laws, strategies, plans, programmes, projects; improving revenue raising; improving monitoring and evaluation of implementation; increasing institutional capacity at national/basin/aquifer level; improving transboundary cooperation, etc.

<sup>56</sup> Average scores of 91 or above (‘very high’ category), for each of the four dimensions and the overall indicator score.

3) **Additional comments on target-setting:**

Answer:

4) **Additional general comments** (e.g.related to the: status/challenges of IWRM implementation; country context; threats to water resources; impacts of climate change, or other):

Answer:

## AnnexC:6.5.1 country reporting process form

To increase transparency and confidence in results, please provide a brief overview of the reporting process e.g. main actors involved; meetings/workshops held; other means of gathering inputs from stakeholders; iterations of drafts and finalisation/approval processes. Also note the main challenges/strengths of the process. Use as much space as needed. If you have completed a full [Stakeholder Consultation report](#), please provide a brief summary here, and refer to that report.

Focal Point affiliation	Officer in Central Water Commission, Department of Water Resources, Ganga Rejuvenation & River Development under Ministry of Jal Shakti, India	
Brief process overview:		
<b>Timeline of Actions taken in respect of reporting of SDG 6.5.1</b>		
#	Date	Event
1	19.04.2023	UNEP vide its e-mail had invited all the UN Member States to report on SDG Indicator 6.5.1 for the year 2023
2	02.05.2023	A kick-off Webinar for UN SDG Data Drive2023 was held which was attended by Officers from BPMO.
3	19.05.2023	Email enclosing the Survey Instrument/Questionnaire for reporting of the SDG 6.5.1 was sent to 9 Central Agencies &36 State Govt/UTs by BPMO to report latest by 15.06.2023
4	16.06.2023	Reminder on the email dated 19.05.2023 was sent to the Central Agencies & State Govt. by BPMO to report latest by 25.06.2023
5	21.08.2023	D.O. Letter from AS&MD, NWM was sent to Central Agencies & State Govt. to report latest by 31.08.2023 <b>(Annexure-3)</b>
6	14.09.2023	Reminder on the D.O. Letter dated 21.08.2023 was sent to Central Agencies & State Govt. by BPMO to report latest by 20.09.2023
7	10.10.2023	Mail regarding extension of Timeline for reporting of SDG indicator 6.5.1 was sent to UNEP by BPMO
8	11.10.2023	UNEP vide their email had granted the extension till December 2023
9	20.10.2023	Reminder-II on the D.O. Letter dated 21.08.2023 was sent to Central Agencies & State Govt. by BPMO to report latest by 31.10.2023
10	26.11.2023	A preliminary draft survey was sent to UNEP

11	01.12.2023	A Stakeholder consultation meeting in collaboration with India Water Partnership and UNEP was held in hybrid mode on 01.12.2023. wherein 140 professionals, experts etc. from National Agencies, State Governments, NGOs, Academicians, etc deliberated upon finalizing the country score regarding SDG 6.5.1.
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Any main points of difference in stakeholder opinion in answering the survey questions?: No such difference observed in stakeholder opinion

Additional comments on the survey or supporting materials, if any:

Stakeholder groups	Level of engagement(mark with 'X')			Additional information (e.g. which stakeholder organisations were involved, how they contributed or were engaged, or any challenges faced)
	Low (given opportunity to contribute)	Medium (some input)	High (discussion/ negotiation)	
National water agencies			X	
Other public sector agencies			X	
Sub-national water agencies			X	
Basin/Aquifer agencies		X		
Water User Associations		X		
Civil society			X	
Private sector	X			
Vulnerable groups		X		
Gender expertise			X	
Research/academia			X	
Transboundary expertise			X	<i>(e.g. Focal Point for SDG 6.5.2 and/or other)</i>
Other SDG focal points			X	<i>(e.g. Focal Points from other indicators)</i>
<i>Please add rows if required</i>				