

Country Survey Instrument for SDG Indicator 6.5.1

Degree of integrated water resources management implementation (0 – 100)

Submission Form	
Country	INDIA
Date this document was submitted	14.09.2020
National SDG 6.5.1 Focal Point information	
Name	Dr. Naresh Kumar
Organisation	Central Water Commission
Title	Chief Engineer, Basin Planning Management Organisation
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: <input type="checkbox"/> 6.1.1 <input type="checkbox"/> 6.2.1 <input type="checkbox"/> 6.3.1 <input type="checkbox"/> 6.3.2 <input type="checkbox"/> 6.4.1 <input type="checkbox"/> 6.4.2 <input type="checkbox"/> 6.5.2 <input type="checkbox"/> 6.6.1 <input type="checkbox"/> 6.a.1 <input type="checkbox"/> 6.b.1 <input type="checkbox"/> Other SDG indicator(s) (please specify here):	
SDG 6.5.1 in-country data collection and reporting process overview <i>(Please provide further details on the consultation process in Annex E)</i>	
Were other institutions/stakeholders involved and consulted in the reporting process for this indicator? Yes	
If yes, please indicate the mode(s) of consultation (please provide further details in Annex E): <input type="checkbox"/> Phone calls <input checked="" type="checkbox"/> Email exchanges <input type="checkbox"/> In-person meetings <input type="checkbox"/> Dedicated stakeholder workshop(s) <input type="checkbox"/> Other (please specify):	
Contact person regarding further questions/clarifications relating to this submission	
<input checked="" type="checkbox"/> SDG 6.5.1 Focal Point listed above <input type="checkbox"/> Other (please specify contact details here):	

Part 1 – Introduction

This is the official survey instrument for country reporting on Sustainable Development Goal (SDG) indicator 6.5.1: “Degree of integrated water resources management implementation (0 – 100)”. The indicator 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 instrument is provided in the SDG indicator 6.5.1 [monitoring guide](#). Both this survey instrument and the monitoring guide are available from UN Environment in six UN languages (Arabic, Chinese, English, French, Russian and Spanish), and Portuguese through the Help Desk by emailing iwrmsdg651@un.org.

About the indicator:

Indicator 6.5.1 represents the degree of integrated water resources management (IWRM) implementation, on a scale of 0 – 100. It is calculated based on scores from approximately 30 questions covering different aspects of IWRM.

About the survey instrument

The primary purpose of the survey instrument 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. It measures implementation in incremental steps, which allows countries to identify barriers and enablers to furthering IWRM. The completed survey instrument can be used as an input to planning and working towards target 6.5.

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 made available and used for water resources development and management (apart from drinking water supply and sanitation) from various sources.

Each section has two sub-sections covering the “National” and “Other” levels, to address the target 6.5 wording “... at all levels.” “Other” levels include sub-national, basin, local and transboundary (see Annex A - Glossary). Questions relate to these levels depending on their relevance to the particular aspect of IWRM. 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 most of the ‘most important’ transboundary basins / aquifers, which should be listed in the table in Annex B. Filling out that table: increases the transparency of the transboundary questions; makes the information more useful for dialogue with neighbouring countries; and enhances coordination with [SDG indicator 6.5.2](#) on arrangements for 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 Annex C.

How to complete the survey

Scoring: For each question, a score between 0 and 100 should be selected, in increments of 10, unless the country judges the question to be ‘not applicable (n/a)’. It is not possible to omit questions. 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 in order for a country to respond that it has reached a specific level of implementation for each question. Furthermore, if an aspect of IWRM is specified in a lower threshold, it is implicit that this aspect is also addressed in the higher thresholds for that 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 description” and “Way forward”. General guidance on the type of information that countries may find useful to include in each field is as follows:

Status description: 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 since the first round of reporting on SDG indicator 6.5.1 (baseline in 2017/18). Where possible, provide a brief explanation of why the score is different to the baseline. If reporting was not submitted for the SDG baseline, reflect 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 baseline 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 data collection process, but that this guidance text is deleted before final submission.

Progress and differences since baseline reporting

172 countries established a baseline for indicator 6.5.1 in 2017/18. This is the second round of data collection. Where available, countries should refer to the baseline survey responses, available here: <http://iwrmdataportal.unepdhi.org/>. Countries are encouraged to consider progress, or lack of progress, since the baseline, in the ‘Status description’ fields, and give reasoning for differences in scores.

The current survey version is highly comparable, though not completely identical, to the baseline survey. Some minor amendments have been made following a review process, and noteworthy changes to the baseline 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 instrument. This helps to increase stakeholder participation and ownership of water management and decision-making processes, and makes the completed survey instrument a more robust and useful diagnostic tool for further discussions and planning. Country Focal Points are asked to fill in the Reporting Process Form in Annex E to increase transparency and increase 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.¹

The national IWRM Focal Point is responsible for the Quality Assurance and formal submission of the completed survey instrument to UN Environment. The survey instrument should be emailed to the IWRM Help Desk at UN Environment: iwrmsdg651@un.org.

Upon request, the Help Desk will provide support to the national IWRM focal points on matters such as interpretation of questions and thresholds, the appropriate level of stakeholder engagement in countries, and support to submitting the final indicator scores.

¹Monitoring of 6.5.1 is being done as part of the UN-Water initiative on integrated monitoring of SDG 6. 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 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 IWRM². 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 description” 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.

1. Enabling Environment						
	Degree of implementation (0 – 100)					
	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
1.1 What is the status of policies, laws and plans to support Integrated Water Resources Management (IWRM) at the national level?						
a. National water resources policy, or similar.	Development not started or not progressing.	Exists , but not based on IWRM.	Based on IWRM, approved by government and starting to be used by authorities to guide work.	Being used by the majority of relevant authorities to guide work.	Policy objectives consistently achieved .	Objectives consistently achieved, and periodically reviewed and revised.
Score	40					
Status description: National Water Policy (NWP) 2012 exists as per IWRM principles.						
Way forward: In view of the latest issues in water sector, revision of the NWP (2012) has been envisaged by Ministry of Jal Shakti, Government of India and a committee has been constituted to draft the revised National Water Policy. The Committee is undertaking a process of wide-ranging consultations to ensure that the process of drafting the policy is as inclusive as possible and the best possible policy emerges from this process of co-creation.						
b. National water resources law(s).	Development not started or not progressing.	Exists , but not based on IWRM.	Based on IWRM, approved by government and starting to be applied by authorities.	Being applied by the majority of relevant authorities.	All laws are being applied across the country.	All laws are enforced across the country, and all people and organizations are held accountable.
Score	20					
Status description: Two national laws i.e. Inter State River Water Disputes Act, 1956 and River Boards Act 1956 are existing but they are not strictly based on IWRM principles.						
Way forward: Two bills based on IWRM i.e. National Water Framework Bill, 2016 and River Basin Management Bill, 2018 are in the process of becoming laws.						

²For examples of good practices of policies, laws and plans, please see case studies under ‘enabling environment’ in the Global Water Partnership (GWP) [IWRM ToolBox](#).

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
c. National integrated water resources management (IWRM) plans, or similar.	Development not started or not progressing.	Being prepared , but not approved by government.	Approved by government and starting to be implemented by authorities.	Being implemented by the majority of relevant authorities.	Plan objectives consistently achieved .	Objectives consistently achieved, and periodically reviewed and revised.
Score	20					
Status description: IWRM study of 2 basins is to be conducted for which Request For Proposal (RFP) document has been prepared and in the process of approval by Competent authority.						
Way forward: IWRM plans envisaged as above shall be implemented by the River Basin Authorities once they are constituted.						
1.2 What is the status of policies, laws and plans to support IWRM at other levels?						
a. Sub-national³water resources policies or similar.	Development not started or delayed in most sub-national jurisdictions.	Exist in most jurisdictions, but not necessarily based on IWRM.	Based on IWRM, approved by the majority of authorities and starting to be used to guide work.	Being used by the majority of relevant authorities to guide work.	Policy objectives consistently achieved by a majority of authorities.	Objectives consistently achieved by all authorities, and periodically reviewed and revised. Score
Score	60					
Status description: Most of the states have their state water policies mostly based on IWRM.						
Way forward: Other states of the country are also in process of having their own State Water policies.						
b. Basin/aquifer management plans⁴ or similar, based on IWRM.	Development not started or delayed in most basins/aquifers of national importance.	Being prepared for most basins/aquifers.	Approved in the majority of basins/aquifers and starting to be used by authorities.	Being implemented in the majority of basins/aquifers.	Plan objectives consistently achieved in majority of basins/aquifers.	Objectives consistently achieved in all basins/aquifers, and periodically reviewed and revised.
Score	40					
Status description:						
<ul style="list-style-type: none"> The National Aquifer Mapping and Management (NAQUIM) Programme is being implemented throughout the country. As a part of this programme aquifer maps and aquifer management plans are prepared and shared with state governments and stakeholders at grassroots level. Out of the total geographical area of nearly 33 lakh km² of the entire country, an area of ~25lac km² mappable area has been identified and 12.9 lakh km² area has been covered till March 2020. Many states have initiated action on the recommendations of the NAQUIM programme in their respective states. 						

³Sub-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.

⁴ 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.

<ul style="list-style-type: none"> As far as basin management plan is concerned, some State Governments have prepared plans for the river basins in their geographical area.
Way forward: <ul style="list-style-type: none"> Mapping of aquifer and formulation of management plan for the remaining mappable area of the country is targeted to be covered under NAQUIM programme by 2023. It is proposed to conduct IWRM study of all river basins in the future.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
c. Arrangements for transboundary water management.⁵	Development not started or not progressing.	Being prepared or negotiated.	Arrangements are adopted .	Arrangements provisions are partly implemented .	Arrangements provisions are mostly implemented .	The arrangements' provisions are fully implemented .
Score	90					

Status description:

See status for Ganga, Brahmaputra & Barak, and Indus basins below.

Way forward:

See way forward for Ganga, Brahmaputra & Barak, and Indus basins below.

c. Arrangements for transboundary water management.	Development not started or not progressing.	Being prepared or negotiated.	Arrangements are adopted .	Arrangements provisions are partly implemented .	Arrangements provisions are mostly implemented .	The arrangements' provisions are fully implemented .
Score(Ganga)	60					

Status description:

India - Bangladesh

- (1) India shares 54 rivers with Bangladesh. **The water sharing agreement of waters of river Ganga with Bangladesh exists since 1996.** The water sharing on other seven important rivers namely Dharla (Jaldhaka) & Dudhkumar (Torsa) in West Bengal sector and Feni, Manu, Muhuri, Khowai, Gumti in Tripura sector are under discussion. At many places, these rivers form international boundary with Bangladesh, and being situated in the delta of the Ganga-Brahmaputra-Meghna river system, all major rivers of the system drain through Bangladesh; which is the lower most riparian country.
- (2) In order to discuss and sort out the issues related to common /border rivers with Bangladesh, a permanent Joint Rivers Commission (JRC) was established in November' 1972 between India & Bangladesh. The JRC meetings are held alternatively in India and Bangladesh. So far, 37 meetings have been held alternately in both the countries. The last (37th) meeting was held in March, 2010 at New Delhi.
- (3) MoU was signed in October, 2019 between India and Bangladesh on the withdrawal of 1.82 cusec of water from Feni river by India for the drinking water supply of Sabroom Town of Tripura. The modalities of this MoU are to be implemented by India with the cooperation of Bangladesh.

⁵ For 'transboundary' definition and guidance on how to fill out all transboundary level questions, see Annexes A and B. All transboundary level questions should reflect the situation in most of the 'most important' transboundary basins/aquifers, as listed in Annex B. 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. Refers to international basins/aquifers only. Arrangements may be interstate, intergovernmental, inter-ministerial, interagency or between regional authorities. They may also be entered into by sub-national entities.

Way forward: India-Bangladesh						
1. The water sharing agreements on other seven important rivers namely Dharla (Jaldhaka), Dudhkumar (Torsa), Feni, Manu, Muhuri, Khowai, Gumti are under discussion with Bangladesh						
2. Ganges Water Treaty signed in 1996 between India and Bangladesh is due for a review in the year 2026 (The Treaty was signed in 1996 for a period of 30 years)						
c. Arrangements for transboundary water management.	Development not started or not progressing.	Being prepared or negotiated.	Arrangements are adopted.	Arrangements provisions are partly implemented.	Arrangements provisions are mostly implemented.	The arrangements' provisions are fully implemented.
Score(Brahmaputra & Barak)	100					
<p>Status description: (i) With China There exists two Memorandum of Understandings (MoUs) between India and China regarding provision of hydrological information (water level, rainfall and discharge) of Yaluzangbu/Brahmaputra River (15th May to 15th October) and Langqen Zangbo/Sutlej River (1st June to 15th October) during flood season by China to India. For Brahmaputra River Chinese side provides hydrological information of three stations viz Nugesha, Yangcun and Nuxia in Tibet Autonomous Region (TAR). For Sutlej River, hydrological information is provided for Tsada Station located in TAR. The MoU on Brahmaputra was first signed in 2002 and was renewed in 2008, 2013 and 2018. MoU on Sutlej was first signed in April 2005 and was renewed in 2010 and 2015. There also exists an Expert Level Mechanism (ELM) between India and China to discuss interaction and co-operation upon provision of hydrological data in flood season, emergency management and other issues regarding transboundary rivers as agreed between them. The ELM meetings are held alternately in India in China every year. The 12th meeting was held during 12-13th June at Ahmedabad, India.</p> <p>(ii) With Bhutan (a) JGE Joint Group of Experts was constituted between Govt. of India and Royal Govt. of Bhutan on flood management in the year 2004. Its aims are to discuss and assess the probable causes and effects of the recurring floods and erosion in the southern foothills of Bhutan and adjoining plains in India and to recommend to both the Governments appropriate and mutually acceptable remedial measures. Its meetings are held every year alternately in India in Bhutan. The last (9th) meeting of JGE was held at Punakha, Bhutan during 7-8th June, 2020. (b) JTT The purpose of Joint Technical Team (JTT) between India and Bhutan is to provide technical support to JGE on flood management. The last (6th) meeting of JTT was held at Jalpaiguri, India during 12-13th September, 2019. (c) JET The purpose of Joint Experts Team (JET), consisting of officials from Govt. of India and Royal Govt. of Bhutan is to continuously review the progress and other requirements of the scheme titled "Comprehensive scheme for establishments of hydrometeorological and flood forecasting network on rivers common to India and Bhutan". The network consists of 32 hydrometeorological/meteorological stations located in Bhutan, the Operation and Maintenance (O&M) of which is carried by Royal Govt. of Bhutan with funding by Govt. of India. The last 35th meeting of JET was held in Paro, Bhutan during 6-7th March, 2019. Thus, the arrangements' provisions are fully implemented.</p>						
Way forward:						
c. Arrangements for transboundary water management.	Development not started or not progressing.	Being prepared or negotiated.	Arrangements are adopted.	Arrangements' provisions are partly implemented.	Arrangements' provisions are mostly	The arrangements' provisions are fully implemented.

Score(Indus)	100					implemented.	
<p>Status description: Indus Basin system is shared primarily by India and Pakistan with small portion in China and Afghanistan. For attaining the most complete and satisfactory utilisation of the waters of the Indus system of rivers, India and Pakistan had signed the Indus Waters Treaty 1960. The Treaty was signed on 19th September , 1960 and was effective retrospectively from the first of April 1960. Under the Treaty, the waters of Ravi, Beas and Satulj rivers (about 33 million acre feet) have been allocated exclusively to India while that of Chenab, Jhelum and Indus main (about 135 million acre feet) was allocated to Pakistan with some limited rights on these rivers given to India.</p>							
<p>Way forward: since the signing of the Treaty, it has worked to the satisfaction of both the Governments.</p>							
d. Sub-national water resources regulations⁶ (laws, decrees, ordinances or similar). ⁷	Development not started or delayed in most sub-national jurisdictions.	Exist in most jurisdictions, but not necessarily based on IWRM.	Based on IWRM, approved in most jurisdictions and starting to be applied by authorities in some jurisdictions.	Some regulations being applied in the majority of jurisdictions.	All regulations being applied in the majority of jurisdictions.	All regulations being applied and enforced in all jurisdictions, and all people and organizations are held accountable.	
Score	20						
<p>Status description: More than half of the states have their respective state water policies mostly in line with the national water policy.</p>							
<p>Way forward: National Water Policy- 2012 provides for state water policies to be formulated on the principles of IWRM.</p>							

⁶Sub-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.

⁷ 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 equality. The 2030 Agenda stresses the importance of partnerships that will require public participation and creating synergies with the private sector.

The burdens of water-related work carried out predominantly by women have been acknowledged for decades,⁸ which has led to a focus on women's practical needs around water, especially in relation to carrying water and managing it within the home. In the context of water resources management, there has been growing recognition that, a strategic and practical focus on increasing women's voice and influence, at all levels of decision-making, must become a priority. Furthermore, mainstreaming gender in the water sector supports a range of targets in the SDGs, including under Goal 5 on achieving gender equality and empowering all women and girls.⁹ Including a gender-related question in this survey (q.2.2d) also addresses the call for gender disaggregated data in the 2030 Agenda.¹⁰

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 description" 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.

⁸ E.g. Dublin Principle Nr. 3 (1992): "Women play a central part in the provision, management and safeguarding of water". "[the] role of women ... has seldom been reflected in institutional arrangements for the ... management of water resources. Acceptance and implementation of this principle requires positive policies to address women's specific needs and to equip and empower women to participate at all levels in water resources programmes, including decision-making and implementation, in ways defined by them."

⁹ E.g. SDG target 5.5 "Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life."

¹⁰ E.g. SDG target 17.18 "By 2020, ... increase ... the availability of ... data disaggregated by ... gender, ... and other characteristics relevant in national contexts."

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 government authorities¹¹ for leading IWRM implementation.	No dedicated government authorities for water resources management.	Authorities exist , with clear mandate to lead water resources management.	Authorities have clear mandate to lead IWRM implementation, and the capacity ¹² to effectively lead IWRM plan formulation .	Authorities have the capacity to effectively lead IWRM plan implementation .	Authorities have the capacity to effectively lead periodic monitoring and evaluation of the IWRM plan(s).	Authorities have the capacity to effectively lead periodic IWRM plan revision .
Score	20					
Status description: Ministry of Jal Shakti and its attached organisations & State Water Resources Department are working towards water resource management.						
Way forward: Two bills based on IWRM i.e. National Water Framework Bill, 2016 and River Basin Management Bill, 2018 are in the process of becoming laws.						
b. Coordination between national government authorities representing different sectors on water resources, policy, planning and management.	No information shared between different government sectors on policy, planning and management.	Information on water resources, policy, planning and management is made available between different sectors.	Communication: Information, experiences and opinions are shared between different sectors.	Consultation: Opportunities for different sectors to take part in policy, planning and management processes.	Collaboration: Formal arrangements between different government sectors with the objective of agreeing on collective decisions on important issues and activities.	Co-decisions and co-production: Shared power between different sectors on joint policy, planning and management activities.
Score	80					
Status description: As per Indian Constitution, role of Central and State Governments in respect of management of water resources is well defined.						
Way forward: Two bills based on IWRM i.e. National Water Framework Bill, 2016 and River Basin Management Bill, 2018 are in the process of becoming laws.						

¹¹'Government authorities' could be a ministry or ministries, or other organizations/institutions/agencies/bodies with a mandate and funding from government.

¹²'Capacity' in this context is that the responsible authorities should be adapted to the complexity of water challenges to be met and 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.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
c. Public participation¹³ in water resources, policy, planning and management at national level.	No information shared between government and the public on policy, planning and management.	Information on water resources, policy, planning and management is made available to the public.	Communication: Government authorities request information, experiences and opinions of the public.	Consultation: Government authorities regularly use information, experiences and opinions of the public.	Collaboration: Mechanisms¹⁴ established, and regularly used, for the public to take part in relevant policy, planning and management processes.	Representation: Formal representation of the public in government processes contributing to decision making on important issues and activities, as appropriate. Score
Score	60					
Status description: Draft policies are put up for comments from public for formulation of an inclusive policy. Different states have water user associations which actively participate in policy, planning and management of water resources.						
Way forward: River Basin Authorities may be established with formal membership of public representatives.						
d. Private sector¹⁵ participation in water resources development, management and use.	No information shared between government and private sector about water resources development, management and use.	Information made available between government and private sector about water resources development, management and use.	Communication between government and private sector about water resources development, management and use.	Consultation: Government authorities regularly involve the private sector in water resources development, management and use activities.	Collaboration: Mechanisms¹⁶ established, and regularly used, for private sector involvement and partnership.	Representation: Effective private sector involvement established for water resources development, management and use activities. Score
Score	20					
Status description: Private Sectors are encouraged to undertake water resources projects independently or through Joint Venture with Academia/Public Sector Organisations.						
Way forward:						

¹³The 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.

¹⁴ Mechanisms can include policies, laws, strategies, plans, or other formal operational procedures for public participation.

¹⁵Private sector includes for-profit businesses and groups. It does not include government or civil society. 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 description' field.

¹⁶ Mechanisms can include policies, laws, strategies, plans, or other formal operational procedures for private sector participation.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
e. Developing IWRM capacity. ¹⁷	No capacity development specific to water resources management.	Occasional capacity development, generally limited to short-term / ad-hoc activities.	Some long-term capacity development initiatives are being implemented, but geographic and stakeholder coverage is limited .	Long-term capacity development initiatives are being implemented, and geographic and stakeholder coverage is adequate .	Long-term capacity development initiatives are being implemented, with effective outcomes, and geographic and stakeholder coverage is very good .	Long-term capacity development initiatives are being implemented with highly effective outcomes, and geographic and stakeholder coverage is excellent .
Score	20					
Status description: Pilot study on IWRM of Brahamani Baitarni basin & Strategic Basin planning for Ganga Basin has been done.						
Way forward: IWRM study of 2 basins shall soon be commenced whose RFP document has been prepared.						
2.2 What is the status of institutions for IWRM implementation at other levels?						
a. Basin/aquifer level ¹⁸ organizations ¹⁹ for leading implementation of IWRM.-	No dedicated basin authorities for water resources management.	Authorities exist , with clear mandate to lead water resources management.	Authorities have clear mandate to lead IWRM implementation, and the capacity ²⁰ to effectively lead IWRM plan formulation .	Authorities have the capacity to effectively lead IWRM plan implementation .	Authorities have the capacity to effectively lead periodic monitoring and evaluation of the IWRM plan(s).	Authorities have the capacity to effectively lead periodic IWRM plan revision .
Score	0					
Status description: No dedicated River Basin Authorities exists for leading implementation of IWRM.						
Way forward: Two bills based on IWRM i.e. National Water Framework Bill, 2016 and River Basin Management Bill, 2018 are in the process of becoming laws.						

¹⁷ 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 programs 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.

¹⁸ At the basin/aquifer level, please include only the most important river basins, lake basins and aquifers for water supply or for other reasons. This question only refers to these basins/aquifers. 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.

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

²⁰ For the definition of 'capacity' in this context, see footnote 12. Beyond having the capacity, authorities must also actually be leading the implementation of these activities.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
b. Public participation ²¹ in water resources, policy, planning and management at the local level . ²²	No information shared between government and the public on policy, planning and management.	Information on water resources, policy, planning and management is made available to the public.	Communication: Government authorities request information, experiences and opinions of the public.	Consultation: Government authorities regularly use local level information, experiences and opinions of the public.	Collaboration: Mechanisms ²³ established, and regularly used, for the public to take part in relevant policy, planning and management processes.	Representation: Formal representation of the public in local authority processes contributing to decision making on important issues and activities, as appropriate.
Score	60					
Status description: At local level, people’s representative bodies such as Panchayati Raj, Water User Association, District Boards, Municipal Bodies etc. exchange information amongst themselves.						
Way forward: There is an elaborate provision in the proposed River Basin Management Bill of exchange of information from all public bodies.						
c. Participation of vulnerable groups in water resources planning and management. ²⁴	Participation of vulnerable groups not explicitly addressed in laws, policies, or plans.	Vulnerable groups partially addressed , but no explicit procedures in place. ²⁵	Some procedures in place , but limited budget and human capacity for implementation.	Procedures in place, with moderate participation of vulnerable groups (moderate budget and human capacity).	Regular participation of vulnerable groups (sufficient budget and human capacity, and participation is monitored).	Meaningful ²⁶ and regular participation of vulnerable groups, as appropriate.
Score	60					
Status description: Vulnerable groups such as weaker section and backward communities are given preference in the Panchayats (village level body), local bodies, Municipalities, legislative assembly and parliament. These elected functionaries have great role in decision making in respect of water resources planning and management. (Para 9.6 of National Water Policy 2012 may kindly be referred).						
Way forward: Considering the vastness of Indian water sector, more participation of such vulnerable group is required in this process.						

²¹‘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.

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

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

²⁴Vulnerable 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.

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

²⁶‘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)
d. Gender included in laws/plans or similar within water resources management. ²⁷	Gender considerations not explicitly included in national/sub national laws/plans or similar.	Gender considerations partially included in laws/plans or similar.	Gender considerations included (but limited implementation, budget or monitoring).	Gender objectives²⁸ partly achieved (activities partially monitored and funded).	Gender objectives mostly achieved (activities adequately monitored and funded).	Gender objectives consistently achieved and effectively address gender issues (activities and outcomes reviewed and revised).
Score	20					
Status description: Like vulnerable groups, role of women in project planning & implementation is also included in National water policy 2012 (Para 9.6 of National Water Policy 2012 may kindly be referred.)						
Way forward:						
e. Organizational framework for transboundary water management. ²⁹	No organizational framework(s).	Organizational framework(s) being developed.	Organizational framework(s) established.	Organizational framework(s)' mandate is partly fulfilled.	Organizational framework(s)' mandate is mostly fulfilled.	Organizational framework(s)' mandate is fully fulfilled.
Score (average)	90					
Status description: See status for Ganga, Brahmaputra & Barak, and Indus basins below.						
Way forward: See way forward for Ganga, Brahmaputra & Barak, and Indus basins below.						
e. Organizational framework for transboundary water management.	No organizational framework(s).	Organizational framework(s) being developed.	Organizational framework(s) established.	Organizational framework(s)' mandate is partly fulfilled.	Organizational framework(s)' mandate is mostly fulfilled.	Organizational framework(s)' mandate is fully fulfilled.
Score (Indus)	100					

²⁷ See gender discussion at beginning of section 2. Gender-responsive mechanisms can include laws, policies, plans, strategies or other frameworks or procedures aimed at achieving gender objectives related to women's participation, voice and influence. Gender-responsive 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. In the baseline survey, national, sub-national, and transboundary levels were addressed in three separate questions. These questions have been merged into a single question, allowing countries to answer the question at the level which is most relevant in the national context. The situation at different levels can be explained in the 'Status description' cell, as appropriate.

²⁸ Gender 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 description' 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.](#)

²⁹An organizational framework can include a joint body, mechanism, authority, committee, commission or other institutional arrangement. Refers to international basins/aquifers.

Status description: Under the provisions of the Indus Waters Treaty 1960, Permanent Indus Commission (PIC) was created comprising of Commissioners for Indus Waters from both the countries. Each Commissioner is the representative of his Government for all matters arising out of the Treaty, and serves as the regular channel of communication on all matters relating to the implementation of the Treaty. The purpose and functions of the Commission is to establish and maintain co-operative arrangements for the, implementation of this Treaty, to promote co-operation between the Parties in the development of the waters of the Rivers. Both the countries exchange the hydrological and other mandated data regularly. The Treaty also has a working dispute resolution mechanism. Annual report of the PIC is submitted to the respective Governments every year. This Treaty is hailed as one of the finest Treaty on Transboundary rivers.

Way forward: Since the signing of the Treaty, it has worked to the satisfaction of both the Governments.

e. Organizational framework for transboundary water management.	No organizational framework(s).	Organizational framework(s) being developed.	Organizational framework(s) established.	Organizational framework(s)' mandate is partly fulfilled.	Organizational framework(s)' mandate is mostly fulfilled.	Organizational framework(s)' mandate is fully fulfilled.
	Score (Ganga)	60				

Status description:
India-Bangladesh
 (1) In order to discuss and sort out the issues related to common transboundary/border rivers with Bangladesh, a permanent Joint Rivers Commission (JRC) was established in November 1972 between India & Bangladesh. The JRC meetings are held alternatively in India and Bangladesh. So far, 37 meetings have been held alternately in both the countries. The last (37th) meeting was held in March, 2010 at New Delhi.
 (2) A Water Resources Secretary level meeting between India and Bangladesh was held in Dhaka in August, 2019.
 (3) Joint Committee Meetings on the sharing of Ganges water as per the provisions of Ganges Water Treaty of 1996 are held regularly for the monitoring and implementation of the Treaty. The last 74th India - Bangladesh Joint Committee meeting was held in February, 2020 at Kolkata, India.

Way forward:
India-Bangladesh
 (1) Action is being taken for implementing the decisions taken in the Water Resources Secretary level meeting held in Dhaka in August, 2019.

e. Organizational framework for transboundary water management.	No organizational framework(s).	Organizational framework(s) being developed.	Organizational framework(s) established.	Organizational framework(s)' mandate is partly fulfilled.	Organizational framework(s)' mandate is mostly fulfilled.	Organizational framework(s)' mandate is fully fulfilled.
	Score (B&B)	100				

Status description: As stated in para 1.2 (c) above, the organisational frameworks' mandate is fully fulfilled.

Way forward:

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
f. Sub-national³⁰ authorities for leading IWRM implementation.³¹	No dedicated sub-national authorities for water resources management.	Authorities exist , with clear mandate to lead water resources management.	Authorities have clear mandate to lead IWRM implementation, and the capacity ³² to effectively lead IWRM plan formulation .	Authorities have the capacity to effectively lead IWRM plan implementation .	Authorities have the capacity to effectively lead periodic monitoring and evaluation of the IWRM plan(s).	Sub-national authorities have the capacity to effectively lead periodic IWRM plan revision .
Score	0					
Status description: Water is a State subject in the State List at Entry 17 of List-II in the 7 th Schedule of the Constitution (Article 246 refers). The development of water resources by any idea, module, plan and permanent solution as mentioned in the grievance, thus, falls in the ambit of respective State Governments and as such the planning, execution, operation and maintenance of water resource projects are to be carried out by the States from their own resources as per their priorities. All 20 Indian river basins share their catchments with two or more states and there is no any such sub national authorities for water resources management and implementation of IWRM. However, few state Governments like Maharashtra and Uttar Pradesh have constituted water resources regulatory authorities for the portion of catchment of the river falling under their state boundaries. (As suggested by the concept of IWRM, the boundary for management of water resources is river basin/sub basin/watershed. On contrary to that, the state Governments are entrusted upon responsibilities of water resources within their political boundary not basin boundary.)						
Way forward: Two bills based on IWRM i.e. National Water Framework Bill, 2016 and River Basin Management Bill, 2018 are in the process of becoming laws.						

³⁰Sub-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.

³¹ 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.

³²For the definition of ‘capacity’ in this context, see footnote 12. 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 programs, 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/programs (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 program with long-term goals. Long-term refers to activities that are undertaken as part of an ongoing program that has more long-term goals/aims and implementation strategy.

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 description” 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?						
a. National monitoring of water availability³³ (includes surface and/or groundwater, as relevant to the country).	No national monitoring systems in place.	Monitoring systems established for a limited number of short-term / ad-hoc projects or similar.	Long-term national monitoring is carried out but with limited coverage and limited use by stakeholders.	Long-term national monitoring is carried out with adequate coverage but limited use by stakeholders.	Long-term national monitoring is carried out with very good coverage and adequate use by stakeholders.	Long-term national monitoring is carried out with excellent coverage and excellent use by stakeholders.
Score	80					
Status description: Water Resource Potential of the Indian river basins have been estimated from time to time in the past & the latest study has been done using space inputs in June, 2019.						
Way forward: Assessment of water availability will be undertaken as and when required.						
b. Sustainable and efficient water use management³⁴ from the national level, (includes surface and/or groundwater, as relevant to the country).	No management instruments being implemented.	Use of management instruments is limited and only through short-term / ad-hoc projects or similar.	Some management instruments implemented on a more long-term basis, but with limited coverage across different water users and the country.	Management instruments are implemented on a long-term basis, with adequate coverage across different water users and the country.	Management instruments are implemented on a long-term basis, with very good coverage across different water users and the country, and are effective .	Management instruments are implemented on a long-term basis, with excellent coverage across different water users and the country, and are highly effective .
Score	40					
Status description:						
<ul style="list-style-type: none"> Groundwater resources assessment (including assessment of water use) is carried out periodically and based on the stage of groundwater extraction, assessment units viz blocks/ Mandals /Taluku /Firkas are categorised as over exploited, critical, semi-critical and safe units. Central Ground Water Authority regulates the groundwater withdrawal for the industries and infrastructure project in these units. Central Ground Water Board (CGWB) is implementing demonstrative/pilot projects for aquifer rejuvenation for supply side management. Demand side management interventions like change in irrigation pattern, change in cropping pattern and water use efficiency techniques are also formulated as part of the aquifer management plans. 						
Way forward:						
<ul style="list-style-type: none"> Supply side management interventions are proposed to be taken up in selected water stressed blocks in other parts of the country 						

³³ See definition of monitoring in Terminology.

³⁴Management 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).

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
c. Pollution control ³⁵ from the national level.	No management instruments being implemented.	Use of management instruments is limited and only through short-term / ad-hoc projects or similar.	Some management instruments implemented on a more long-term basis, but with limited coverage across sectors and the country.	Management instruments are implemented on a long-term basis, with adequate coverage across sectors and the country.	Management instruments are implemented on a long-term basis, with very good coverage across sectors and the country, and are effective .	Management instruments are implemented on a long-term basis, with excellent coverage across sectors and the country, and are highly effective .
Score	60					

Status description:

- Central Water Commission (CWC) monitors water quality at 552 key locations (519 water quality sites and 33 water quality sampling stations) 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 295 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 observed . There are 18 nos. of level –II laboratories located at selected division offices to analyse 25 nos. of physico-chemical characteristics and bacteriological parameters of river water. 5 nos. of level-III / II+ laboratories are functioning at Varanasi, New Delhi, Guwahati, Hyderabad and Coimbatore where 41 parameters including heavy metals / toxic parameters are being analysed. http://cwc.gov.in/water_quality#:~:text=Central%20Water%20Commission%20is%20monitoring,for%20analysis%20of%20the%20parameters.
- Further, Central Pollution Control Board (CPCB) also monitors various water quality parameters such as DO, BOD, COD, turbidity, pH, TSS, TDS, etc. all across the country (http://www.cpcbenvi.nic.in/water_quality_data.html)
- Central Ground Water Board (CGWB) has about 15000 observation wells from where samples are collected and 16 regional chemical laboratories for analysis of the major and minor inorganic constituents in ground water sample. (<http://cgwb.gov.in/wgoverview.html>, <http://cgwb.gov.in/wqmaps.html>, <http://cgwb.gov.in/wqreports.html>) (3 Government organisations (CWC, CGWB and CPCB) are mainly responsible for monitoring water quality and brief of the same is given in status description.)

Way forward: Under the flagship scheme National Hydrology Project, several new water quality monitoring stations are being setup in order adequately gauging the river and river basins.

d. Management of water-related ecosystems ³⁶ from the national level.	No management instruments being implemented.	Use of management instruments is limited and only through short-term / ad-hoc projects or similar.	Some management instruments implemented on a more long-term basis, but with limited coverage across different ecosystem types and the country.	Management instruments are implemented on a long-term basis, with adequate 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 very good coverage across different ecosystem types and the country, and are effective . EWR analysed for most of country.	Management instruments are implemented on a long-term basis, with excellent coverage across different ecosystem types and the country, and are highly effective . EWR analysed for whole country.
Score	60					

Status description:

- CWC has formulated 'Guidelines For Maintaining Longitudinal Connectivity Through Dams' (<http://cwc.gov.in/sites/default/files/guidelines-for-maintaining-longitudinal-connectivity-through-dams-final-copy.pdf>). The purpose of these guidelines is to provide guidance for maintaining longitudinal connectivity through dams pertaining to water

³⁵Includes regulations, water quality guidelines, water quality monitoring, economic tools (e.g. taxes and fees), water quality trading programs, education, consideration of point and non-point (e.g. agricultural) pollution sources, construction and operation of wastewater treatment plants, watershed management.

³⁶Water-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. Monitoring includes measuring extent and quality of the ecosystems over time.

(e-flow), sediment and fish.

- Ministry of Environment and Forest and Climate Change (MoEF&CC) has enacted Wildlife Protection Act to provide for the protection of wild animals, birds and plants and for matters connected therewith or ancillary or incidental thereto with a view to ensuring the ecological and environmental security of the country. (http://legislative.gov.in/sites/default/files/A1972-53_0.pdf). Further, National Forest Policy was formulated in 1988 (https://mpforest.gov.in/img/files/Policy_NFP.pdf) is targeted to have a minimum of one-third of the total land area of the country under forest or tree cover. In the hills and in mountainous regions, the aim should be to maintain two-third of the area under such cover in order to prevent erosion and land degradation and to ensure the stability of the fragile eco-system.

Way forward: Wetland (Conservation and Management), Rules 2017, notified by MoEF&CC asks for establishing authority comprising ministers, officials and experts, in all states. (<http://moef.gov.in/wp-content/uploads/2020/01/final-version-and-printed-wetland-guidelines-rules-2017-03.01.20.pdf>). The authority would formulate a list of activities to be allowed, regulated or prohibited within wetlands and their zone of influence, define conservation strategies and wise use of wetlands. Environment Protection Act 1986 designed to provide a framework for the coordination of central and state authorities to curb the pollution in water bodies.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
e. Management instruments to reduce impacts of water-related disasters³⁷from the national level.	No management instruments being implemented.	Use of management instruments is limited and only through short-term / ad-hoc projects or similar.	Some management instruments implemented on a more long-term basis, but with limited coverage of at-risk areas.	Management instruments are implemented on a long-term basis, with adequate coverage fat-risk areas.	Management instruments are implemented on a long-term basis, with very good coverage of at-risk areas, and are effective .	Management instruments are implemented on a long-term basis, with excellent coverage of at-risk areas, and are highly effective .
Score	80					

Status description:

(i) National Disaster Management Guidelines on Management of Floods have been prepared in January, 2008 . — The guidelines, inter — alia, contains roles and responsibilities of different stakeholders to manage disaster risks due to floods.

(ii) National Disaster Management Guidelines on Management of Urban Flooding have been prepared in September, 2010. — The guidelines, inter — alia, contains roles and responsibilities of different stakeholders to manage disaster risks due to urban flooding.

(iii) National Disaster Management Plan (NDMP) — 2016 has been updated in November, 2019—The updated NDMP-2019 contains one chapter on the subject— Building Disaster Resilience — Responsibility Framework, Part - B. This chapter contains responsibilities of National and State level agencies for disaster risk management, inter — alia, for Flood and Urban Flood under the thematic areas (i) Understanding Risk, (ii) Inter — Agency Coordination, (iii) Investing in DRR — Structural Measures, (iv) Investing in DRR — Non Structural Measures, (v) Capacity Development and (vi) Climate Change Risk Management.

(iv) Roadmap for Mitigation of Urban Flood— A Expert Group constituted in NDMA prepared the roadmap for mitigation of urban flooding under the three time frames, (i) Short term—2016 to 2020, (ii) Medium term—2020 to 2025, and (iii) Long—term 2025 — 2030. The roadmap was prepared under the sub — heads (a) Warning, (b) Drainage, (c) Urban Water Bodies, (d) Urban Planning, (e) Response and (f) Capacity Building. The roadmap has been circulated to all the States/ UTs in July, 2017 to take

³⁷ '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); and Climatological (drought, glacial lake outburst, wildfire).

necessary action to implement the Roadmap as per the three timeframes for urban flood preparedness and mitigation.

(v) Section 37 of the Disaster Management Act, 2005 provides that every Ministry or Department of the Govt. of India shall prepare a Disaster Management Plan (DMP), specifying, inter-alia, the measures to be taken for prevention and mitigation of disasters.

(vi) Section 23 of the Disaster Management Act, 2005 provides for preparation of State Disaster Management Plan for every State. The Plan shall, inter-alia, include the measures to be adopted for prevention and mitigation of disasters.

(vii) NDMA awarded one project to The Energy and Resources Institute (TERI) for development of Flood Early Warning System for Guwahati Town. The flood warning system being developed by TERI shall be used by Guwahati Municipal Corporation. The System will be run / tested by TERI team, before handing over the final product to NDMA / Assam SDMA.

(viii) For effective coordination & response during disasters, NDMA Conducts State level/Multi State disaster specific Mock Exercises (MEs), including floods. Each ME is based around the hazard risk vulnerability of the State/UT. Since inception, NDMA has conducted approximately 895 such MEs for all the disasters across India. The objectives of Mock Exercises are to (i) review the DM plans of the State and Districts, as well as of each Deptt; (ii) highlight the roles and responsibilities of various stakeholders involved in managing disasters; (iii) enhance coordination among emergency support functions; and (iv) identify gaps, if any, in the resources, manpower, communications, response capabilities, etc.

(ix) 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 (with a focus on flood) and provide them a personal protective 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 thereby enabling them to undertake basic relief and rescue tasks during emergency situations such as floods, flash-floods and urban flooding. So far, out of 6000 volunteers, 5116 have been trained.

Way forward:

3.2 What is the status of management instruments to support IWRM implementation at other levels?

a. Basin management instruments. ³⁸	No basin level management instruments being implemented.	Use of basin level management instruments is limited and only through short-term / ad-hoc projects.	Some basin level management instruments implemented on a more long-term basis, but with limited geographic and stakeholder coverage.	Basin level management instruments implemented on a more long-term basis, with adequate geographic and stakeholder coverage.	Basin level management instruments implemented on a more long-term basis, with effective outcomes and very good geographic and stakeholder coverage.	Basin level management instruments implemented on a more long-term basis, with highly effective outcomes and excellent geographic and stakeholder coverage.
Score	40					

Status description: Brahmaputra Board, Krishna River Management Board, Godavari River Management Board, Damodar Valley Corporation, Bhakra Beas Management Board, Tungbhadra Board, Narmada Control Authority, Bansagar Control Board etc. are few such instruments based on basin as management unit.

Way forward: Two bills based on IWRM i.e. National Water Framework Bill, 2016 and River Basin Management Bill, 2018 are in the process of becoming laws.

³⁸Basin 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.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
b. Aquifer management instruments. ³⁹	No aquifer level management instruments being implemented.	Use of aquifer level management instruments is limited and only through short-term / ad-hoc projects.	Some aquifer level management instruments implemented on a more long-term basis, but with limited geographic and stakeholder coverage.	Aquifer level management instruments implemented on a more long-term basis, with adequate geographic and stakeholder coverage.	Aquifer level management instruments implemented on a more long-term basis, with effective outcomes and very good geographic and stakeholder coverage.	Aquifer level management instruments implemented on a more long-term basis, with highly effective outcomes and excellent geographic and stakeholder coverage.
Score	40					
<p>Status description: Central Ground Water Board has been carrying out implementation of recharge activities from VIII five plan period through demonstrative recharge plan and terrain specific recharge measures in several blocks of the country through central sector schemes.</p> <ul style="list-style-type: none"> • Currently, aquifer rejuvenation projects are also under progress in Andhra Pradesh , Telengana & Maharashtra states. • CGWB in collaboration with Ministry of Rural Development has identified nine Over exploited blocks in eight states in which water conservation works are taken up as pilot project under MGNREGA. • Atal Bhujal Yojana has been launched with an objective of strengthening the institutional framework for participatory groundwater management and bringing about behavioural changes at the community level for sustainable groundwater resource management in seven States, viz. Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh. 						
<p>Way forward:</p> <ul style="list-style-type: none"> • Aquifer rejuvenation project have been formulated for water stressed district of Rajasthan, Haryana and Gujarat. • Revision of the master plan for state wise recharge is also under progress. • Based on the success of the Atal Bhujal yojana it is also proposed to upscale the scheme to pan India coverage. 						
c. Data and information sharing within countries at all levels. ⁴⁰	No data and information sharing.	Limited data and information sharing on an ad-hoc basis.	Data and information sharing arrangements exist on a more long-term basis between major data providers and users.	Data and information sharing arrangements implemented on a more long-term basis, with adequate coverage across sectors and the country.	Data and information sharing arrangements implemented on a more long-term basis, with very good coverage across sectors and the country.	All relevant data and information are online and freely accessible to all.
Score	100					
<p>Status description: Data and information collected all across the country is made available online at www.indiawris.gov.in and available for access to everyone across the world. The data being collected is available in various dynamic (regular short interval time series data), semi dynamic (periodic updation), static(results from technical studies) modules. The data is available on various water topics such as river discharge, water level, ground water level, water quality etc. The website has various utilities for downloading data, web feature services, editing tools etc.</p>						

³⁹See previous footnote on basin management instruments, which also applies to aquifers.

⁴⁰ Includes more formal data and information sharing arrangements between users, as well as accessibility for the general public, where appropriate.

Way forward: Plans are in place to collect micro-level data for improving the data coverage and its network all over the country. The decision support system shall be developed to help the administrators, planners and other stake holders of water to take well informed decisions for the judicial utilisation of country's water resources. Introduction of sensor based real time data collection on automated mode and further expansion of measuring stations are regular activities for strengthening the data collection system & to fill-up gaps						
d. Transboundary data and information sharing between countries.	No data and information sharing.	Limited data and information sharing on an ad-hoc or informal basis.	Data and information sharing arrangements exist , but sharing is limited .	Data and information sharing arrangements implemented adequately .	Data and information sharing arrangements implemented effectively . ⁴¹	All relevant data and information are online and accessible between countries.
Score(average)	70					
Status description: See status for Ganga, Brahmaputra & Barak, and Indus basins below.						
Way forward: See way forward for Ganga, Brahmaputra & Barak, and Indus basins below.						
d. Transboundary data and information sharing between countries.	No data and information sharing.	Limited data and information sharing on an ad-hoc or informal basis.	Data and information sharing arrangements exist , but sharing is limited .	Data and information sharing arrangements implemented adequately .	Data and information sharing arrangements implemented effectively . ⁴²	All relevant data and information are online and accessible between countries.
Score(Indus)	80					
Status description: Following data with respect to the flow in, and utilisation of the waters of, the Rivers is exchanged on monthly between the Parties : Daily (or as observed or estimated less frequently) gauge and discharge data relating to flow of the Rivers at all observation sites Daily extractions for or releases from reservoirs, Daily withdrawals at the heads of all canals operated by government or by a government agency (hereinafter in this Article called canals), including link canals, Daily escapages from all canals, including link canals and Daily deliveries from link canals. In addition to this India furnishes to Pakistan a statement showing for each of the Districts and Tehsils irrigated from the Western Rivers every year. The Treaty also provides that if, in addition to the above data , Party requests the supply of any data relating to the hydrology of the Rivers, or to canal or reservoir operation connected with the Rivers, such data shall be supplied by the other Party to the extent that these are available.						
Way forward: Since the signing of the Treaty, it has worked to the satisfaction of both the Governments.						

⁴¹E.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.).

⁴²E.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.).

d. Transboundary data and information sharing between countries.	No data and information sharing.	Limited data and information sharing on an ad-hoc or informal basis.	Data and information sharing arrangements exist , but sharing is limited .	Data and information sharing arrangements implemented adequately .	Data and information sharing arrangements implemented effectively . ⁴³	All relevant data and information are online and accessible between countries.
Score(Ganga)	60					
Status description:						
India-Bangladesh						
<ol style="list-style-type: none"> As per the provisions of Ganges Water Treaty of 1996, Joint Hydrological observations are taken by India and Bangladesh jointly at Farakka (India) and Hardinge Bridge (Bangladesh) on Ganga / Ganges river and this data is exchanged during the lean season period from 1st January to 31st May every year. India is providing the water level of two stations on Ganga river (from 15th June to 15th October, every year); and water level / discharge of some stations of Brahmaputra, Barak and their tributaries during monsoon period (from 15th May to 15th October) to Bangladesh for use of their flood forecasting and warning arrangements. The transmission of flood forecasting information from India during the monsoon, which is being supplied free of cost has enabled the Civil and Military authorities in Bangladesh to take precautionary measures and shift the population –which might be affected by floods to safer places. India and Bangladesh have exchanged the updated data on six common / trans-boundary rivers for the joint scientific study and further preparation of water sharing arrangements between the two countries. 						
Way forward:						
The mechanism of data sharing between India and Bangladesh is working satisfactorily and any improvement in this mechanism can be discussed mutually on bilateral forums						
d. Transboundary data and information sharing between countries.	No data and information sharing.	Limited data and information sharing on an ad-hoc or informal basis.	Data and information sharing arrangements exist , but sharing is limited .	Data and information sharing arrangements implemented adequately .	Data and information sharing arrangements implemented effectively . ⁴⁴	All relevant data and information are online and accessible between countries.
Score(B&B)	80					
Status description: As stated in para 1.2 (c) above, data and information sharing arrangements are implemented effectively.						
Way forward:						

⁴³E.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.).

⁴⁴E.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.).

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. 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-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies”.

“Various 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 description’ field.

Investments should cover all aspects of water resources development and management but exclude any related to drinking water supply, sanitation and hygiene services as they are covered in other monitoring processes.

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 description” 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)
4.1 What is the status of financing for water resources development and management at the national level?						
a. National budget⁴⁵ for water resources infrastructure⁴⁶ (invest ment and recurrent costs).	No budget allocated in national investment plans.	Some budget allocated but only partly covers planned investments.	Sufficient budget allocated for planned investments but insufficient funds disbursed or made available.	Sufficient budget allocated and funds disbursed for most planned programmes or projects.	Sufficient funds disbursed for investment and recurrent costs, and being utilised in all planned projects.	Budget fully utilised for investment and recurrent costs, post-project evaluation carried out, budgets reviewed and revised.
Score	60					
Status description: Each year a revised budget gets allocated through demand of grants in parliament. The budget is then further disbursed according to the planned activities but sometimes can't be utilised to its full potential because of some unforeseen circumstances. More comprehensively the details could be checked on - https://www.prsindia.org/parliamenttrack/budgets/demand-grants-2020-21-analysis-jal-shakti%C2%A0						
Way forward: The potential and extent of water resources has already been assessed and allocations are being made accordingly in the annual budgets. As per the priority of allocation of budget, the assessed potential will be harnessed with the time.						
b. National budget for IWRM elements⁴⁷ (investments and recurrent costs).	No budget allocations made for investments and recurrent costs of the IWRM elements.	Allocations made for some of the elements and implementation at an early stage.	Allocations made for at least half of the elements but insufficient for others.	Allocations for most of the elements and some implementation under way.	Allocations include all elements and implementation regularly carried out (investments and recurrent costs).	Planned budget allocations for all elements of the IWRM approach fully utilised , budgets reviewed and revised.
Score	20					
Status description: IWRM study of 2 Indian river basins are proposed and funds earmarked in the budget for the same.						
Way forward: Once these 2 studies will be successfully completed, more budget provision will be made for other basins.						

⁴⁵Allocations 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.

⁴⁶Infrastructure includes 'hard' structures such as dams, canals, pumping stations, flood control, treatment works etc., as well as 'soft' infrastructure and environmental measures such as catchment management, sustainable drainage systems etc. **For this survey do not include infrastructure for drinking water supply or sanitation services.** Budgets should cover initial investments and recurrent costs of operation and maintenance.

⁴⁷ '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 building, and management instruments such as research and studies, gender and environmental assessments, data collection, monitoring etc.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
4.2 What is the status of financing for water resources development and management at other levels?						
a. Sub-national or basin budgets for water resources infrastructure⁴⁸ (investment and recurrent costs).	No budget allocated in sub-national or basin investment plans.	Some budget allocated but only partly covers planned investments.	Sufficient budget allocated for planned investments but insufficient funds disbursed or made available.	Sufficient budget allocated and funds disbursed for most planned programmes or projects.	Sufficient funds disbursed, for investment and recurrent costs, and being utilised in all planned projects.	Budget fully utilised , for investment and recurrent costs, post-project evaluation carried out, budgets reviewed and revised.
Score	20					
Status description: In India states have their own budget allocation system in place (together with assistance from the Central Government) & state water resources department utilize these budgets according to their planned activities for the development of water resources in their respective states.						
Way forward:						
b. Revenues raised for IWRM elements.⁴⁹	No revenues raised for IWRM elements.	Processes in place to raise revenue but not yet implemented .	Some revenue raised , but generally not used for IWRM activities.	Revenues raised cover some IWRM activities.	Revenues raised cover most IWRM activities.	Revenues raised fully cover costs of IWRM activities.
Score	0					
Status description: Since IWRM has not been implemented in any of the Indian river basins, no revenue raised for IWRM element. Moreover, IWRM will be implemented at the river basin level in the future and not at sub national or state level.						
Way forward:						

⁴⁸Infrastructure includes 'hard' structures such as dams, canals, pumping stations, flood control, treatment works etc., as well as 'soft' infrastructure and environmental measures such as catchment management, sustainable drainage systems etc. **For this survey do not include infrastructure for drinking water supply or sanitation services.** Budgets should cover initial investments and recurrent costs of operation and maintenance.

⁴⁹For '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 description). **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)
c. Financing for transboundary cooperation. ⁵⁰	No specific funding allocated from the Member State (MS) budgets nor from other regular sources.	MS agreement on country share of contributions in place and in-kind support for the cooperation organisation/arrangement.	Funding less than 50% of that expected as contributions and by regulation.	Funding less than 75% of that expected as contributions and by regulation.	Funding more than 75% of that expected as contributions and by regulation.	Full funding of that expected as contributions and by regulation.
Score(average)						
Status description: See status for Indus and Brahmaputra & Barak basins below.						
Way forward: See way forward for Indus and Brahmaputra & Barak basins below.						
c. Financing for transboundary cooperation.	No specific funding allocated from the Member State (MS) budgets nor from other regular sources.	MS agreement on country share of contributions in place and in-kind support for the cooperation organisation/arrangement.	Funding less than 50% of that expected as contributions and by regulation.	Funding less than 75% of that expected as contributions and by regulation.	Funding more than 75% of that expected as contributions and by regulation.	Full funding of that expected as contributions and by regulation.
Score(Indus)						
Status description: Each Government bears the expenses of its Commissioner and his ordinary staff, cost of acquisitions of data to be supplied and hosting of the meetings and tours.						
Way forward: Since the signing of the Treaty, it has worked to the satisfaction of both the Governments						
c. Financing for transboundary cooperation.	No specific funding allocated from the Member State (MS) budgets nor from other regular sources.	MS agreement on country share of contributions in place and in-kind support for the cooperation organisation/arrangement.	Funding less than 50% of that expected as contributions and by regulation.	Funding less than 75% of that expected as contributions and by regulation.	Funding more than 75% of that expected as contributions and by regulation.	Full funding of that expected as contributions and by regulation.
Score(B&B)						
Status description:(a) For China Cost of hydrological information (data) sharing by China to India (O&M) as enumerated in Para 1.2 (c) is borne by the Govt. of India and in this regard an advance payment of RMB 10,25,555 (Yuan) is given to China by India before the commencement of the flood season i.e. 15th May every year. Sanction Order for the payment for this year's flood season data was issued by Ministry of Jal Shakti on 1st May, 2020. The modalities of sharing of data for three stations on Brahmaputra and one station on river Sutlej located in TAR are contained in the respective Implementation Plans (IP) signed between the two countries. The last IP on Brahmaputra was signed on 13th June, 2019 at Ahmedabad and the last IP on Sutlej was signed in 2016 at Delhi. (b) For Bhutan For the Operation and Maintenance of 32 hydro meteorological /meteorological stations carried out by Royal Govt. of Bhutan relating to flood forecasting network on rivers common to India and Bhutan, funds are released by the Govt. of India every year in two instalments. The data from these stations is utilised by Central Water Commission in						

⁵⁰In 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 description' and 'Way forward' fields.

formulating flood forecasts. Thus, full funding (O&M only) is provided by India to China and Bhutan, as above, for the provision of hydrological data of four stations located in TAR and flood forecasting data from 32 hydrometeorological/meteorological stations located in Bhutan.						
d. Sub-national or basin budgets for IWRM elements⁵¹ (investment and recurrent costs).	No budget allocations at sub-national or basin level for investments and recurrent costs of IWRM elements.	Allocations made for some of the elements and implementation at an early stage.	Allocations made for at least half of the elements but insufficient for others.	Allocations for most of the elements and some implementation under way.	Allocations include all elements and implementation regularly carried out (investments and recurrent costs).	Planned budget allocations for all elements of the IWRM approach fully utilised , budgets reviewed and revised.
	Score	20				
Status description:						
Way forward:						

⁵¹ '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 building, 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.

Section	Average Scores (all values rounded to nearest whole number)
Section 1 Enabling environment	41
Section 2 Institutions and participation	39
Section 3 Management instruments	63
Section 4 Financing	37
Indicator 6.5.1 score = Degree of IWRM implementation (0-100)*	45

* 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 description' and 'way forward' for each question, as this helps to identify which actions need to be taken to move towards a greater degree of implementation of IWRM. See the monitoring guide for further information on interpretation of scores and target setting.

Annexes:

Annex A: Glossary

- **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.
- **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;
 - 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.
- **Programs:** 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 (see Annex B).
- **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: Transboundary level

The transboundary questions for indicator 6.5.1 focus on the degree of implementation of IWRM at the transboundary level, as relevant to implementation of IWRM ‘at all levels’, as specified in target 6.5. Countries sharing basins of transboundary waters (rivers, lakes or aquifers) should answer the questions on transboundary issues. This information is complemented by indicator 6.5.2 ‘Proportion of transboundary basin area with an operational arrangement for water cooperation’.

To enable tracking of progress over time and for transparency, in the table below please list the transboundary (or ‘international’) basins or aquifers that are included in this survey. The 6.5.1 baseline reporting may be used as a starting point. 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 listed in this table, and the scores given, should be cross-referenced with tables and scores in the 6.5.2 reporting template (www.sdg6monitoring.org/indicators/target-65/indicators652/), 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 (<https://www.un-igrac.org/ggis/explore-all-transboundary-groundwaters>), may be referred to. If you include a national (sub-basin) as part of a larger transboundary basin, please ensure to also include the name of the larger basin. When answering transboundary questions, the majority of the basins below must meet the criteria described in each threshold to achieve the score for that threshold.

The columns on the right of the table are optional though recommended. Filling them out would: provide countries with valuable information and a quick diagnostic tool for the status in each basin/aquifer; increase the transparency of the transboundary level responses in this survey for stakeholders both within and between countries; help countries reach consensus on scores for the transboundary questions; and provide a valuable cross-reference for indicator 6.5.2. For each basin/aquifer, a score should be given for each of the four transboundary questions in the survey, following the guidance and thresholds in the survey questions. To supplement this data, you are encouraged to provide a summary of the situation for the transboundary basins/aquifers in the ‘Status description’ and ‘Way forward’ fields to transboundary questions within Part 2 of this survey, to the extent feasible.

		OPTIONAL THOUGH RECOMMENDED*			
Important transboundary basins		Arrangements (1.2c)	Institutions (2.2e)	Data sharing (3.2d)	Financing (4.2c)
1.	Ganga	60	60	60	-
2.	Brahmaputra & Barak	100	100	80	100
3.	Indus	100	100	80	100
Please add/delete rows as needed					
Important transboundary aquifers					
1.					
2.					
3.					
Please add/delete rows as needed					

* These columns may be useful to countries in determining the approximate status for each transboundary basin/aquifer, and thereby be useful in discussions on the respective question scores in Part 2 of this survey instrument.

Annex C: Barriers, enablers and next steps for furthering IWRM implementation

This section is not used in calculating indicator 6.5.1, but is designed to be useful for countries to identify the main challenges and next steps to further IWRM implementation. It builds on the free text fields for each question – “Status description” and “Way forward” – to identify the key issues.

The third question below aims to improve transparency by documenting the main differences in opinion between stakeholders. You may amend the structure to make it more useful to the planning process in the national context. For each question, you may consider aspects under each of the four IWRM dimensions in the survey, or you may identify aspects/issues that cut-across questions and IWRM dimensions. Some issues not addressed by the questions may also be brought up here.

1) What are the main challenges/barriers to progress of IWRM implementation in the country?

The main challenges in the IWRM implementation are as under:

- Water is a State subject as per the Indian Constitution and development of water resources thus falls in the ambit of respective State Governments and as such the planning, execution, operation and maintenance of water resource projects are to be carried out by the States from their own resources as per their priorities. There is no dedicated river basin organisation for management of water resources.
- Water resources regulatory authority for a river basin is a mandatory requirement for IWRM which is missing in the Indian scenario.
- India has a federal structure with Union of States and a Central Government. For uniform implementation of IWRM throughout the country, there is no umbrella framework law for water governance.
- No comprehensive study for implementation of IWRM in Indian river basins has been conducted yet.

2) What are the main next steps to overcome challenges and further IWRM implementation?

- River Basin Management Bill has already been drafted and now it is in final phase of approval. There is an elaborate provision in the Bill for river basin organisations involving a range of stakeholders in decision making.
- As per the aforesaid Bill, river basin organisations will act as water resources regulatory bodies at river basin level.
- Draft Water Framework Law is also proposed to be tabled in the Parliament which is envisaged as a umbrella legislation for water governance.
- Request for Proposal (RFP) for conducting IWRM study of 2 river basin has already been prepared and in the process of approval.

3) What were the main points of difference in stakeholder opinion in answering the survey questions?

As such no difference has been observed.

4) Additional comments

-

Annex D: Priority water resource challenges

Please indicate the challenge level for each of the water resource issues below. This information will not affect the overall indicator score.

This checklist may be useful to countries in stakeholder discussions and planning. Over time, it can also help countries to evaluate whether the implementation of IWRM can help to reduce the challenge level relating to different water resources issues. The information will also help to develop regional and global oversight of key water resources challenges, and track progress of how challenge levels may change over time.

Note that ‘challenge level’ in this case refers to the level of difficulty associated with addressing each issue. For example, if effective and financed systems are in place for providing water for domestic use, then this may be assigned a ‘low’ challenge level, even though this issue would likely be classified as high priority/importance in most countries. ‘Low’, ‘Medium’ and ‘High’ are intentionally broad and intuitive categories.

Water resource challenges	Level of difficulty associated with addressing the challenge			
	Low	Medium	High	Not relevant
Water uses				
Water for agriculture	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>
Water for domestic use	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>
Water for industry	<input type="checkbox"/>	x	<input type="checkbox"/>	<input type="checkbox"/>
Water for energy	<input type="checkbox"/>	x	<input type="checkbox"/>	<input type="checkbox"/>
Water for ecosystems/environment	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>
Water for growing cities	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>
Threats to the resource				
Water scarcity / over-abstraction (surface)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	x
Water scarcity / over-abstraction (groundwater)	x	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water quality / pollution (surface)	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>
Water quality / pollution (groundwater)	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>
Water-related ecosystem degradation	<input type="checkbox"/>	x	<input type="checkbox"/>	<input type="checkbox"/>
Water-related ecosystem loss	<input type="checkbox"/>	x	<input type="checkbox"/>	<input type="checkbox"/>
Threats to people and economic activity				
Floods	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>
Droughts	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>
Coastal vulnerability	x	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conflicts over water resources	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>

Comments (optional):

Water Resources Management Issues

- Temporal and spatial variation of rainfall
- Topographical and geographical constraints for using available water resources
- Recurring floods & droughts in many parts of the country
- Impact of climate and land use change on water resources
- Lack of holistic approach
- Misplaced priorities (water intensive crops)
- Over-exploitation of groundwater resources
- Lack of carryover reservoir storage infrastructure
- Large areas still under rainfed agriculture
- High evaporation from much-hyped small water bodies / check dams
- Low productivity seeds
- Poor efficiency of water resources projects
- Untreated discharge of wastewater into rivers
- Balance between human needs and riverine ecological needs
- Abysmal River Basin Planning and Management (RBOs)
- Absence of Water Framework Law

Annex E: 6.5.1 country reporting process form

A common query received after the baseline data collection period was on the reporting process and which stakeholders were involved in reporting.

To improve transparency and increase confidence in results, you are invited to provide a brief overview of the reporting process. e.g. main actors involved; meetings/workshops held; other means of gathering inputs from stakeholders; and finalisation/approval processes. Also note the main challenges/strengths of the process. Use as much space as needed.

Focal Point affiliation	Central Water Commission-Central Government organisation under the Ministry of Jal Shakti.
Brief process overview: The SDG 6.5.1 Survey instrument was sent to 48 numbers of identified stakeholders through email explaining the purpose of this activity. The matter was also further explained telephonically to these stakeholders as and when required. The office of Focal point has been continuously engaged in stakeholder consultation as well as in furnishing the information pertaining to Central water Commission. A face to face consultation workshop couldn't be organised because of pandemic situation of Covid-19, however, it was not a constraint in reporting process as the matter was handled expeditiously by Focal point and his team. IWRM is in nascent phase in India, therefore, an elaborate capacity building and training on its various dimensions is required. In this regard, a request for conducting a workshop involving international experts as resource persons has already been made.	

Stakeholder groups	Level of engagement(mark with 'X')			Additional information (e.g. which stakeholder organisations were involved)
	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			
Other SDG focal points	x			<i>(e.g. FPs from other indicators)</i>
<i>Please add rows if required</i>				