

Stakeholder Consultation Report

SDG 6.5.1, Degree of Implementation of IWRM

Pakistan

September 28, 2023



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in collaboration with

Pakistan Water Partnership (PWP)

Stakeholder Consultation Report on SDG 6.5.1

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Stakeholders Consultation Report on SDG 6.5.1

Executive Summary

The office of Chief Engineering Adviser/Chairman Federal Flood Commission (O/o CEA/CFPC), jointly with Pakistan Water Partnership (PWP) conducted a multi-stakeholder consultation to assess the degree of implementation of Integrated Water Resources Management (IWRM) i.e. Sustainable Development Goal (SDG) Indicator 6.5.1 in Pakistan for reporting cycle 2023. The National Focal Point for SDG 6.5.1, Mr. Ahmed Kamal, Chief Engineering Adviser/Chairman Federal Flood Commission (CEA/CFPC) initiated the stakeholders consultation process in June 2023 through sending official communications (via email and mail) to key stakeholders asking them to complete an online questionnaire through IWRM portal. Stakeholders included federal and provincial government organizations, academic institutes, public and private sector organizations and NGOs. Accordingly, 32 responses were received within the deadline of August 15, 2023.

Following the above, O/o CEA/CFPC and PWP jointly organized a multi-stakeholder workshop in Islamabad on August 21, 2023 at Best Western Hotel, Islamabad which was funded by UNEP-DHI Centre on Water and Environment through Global Water Partnership (GWP). Invitations were sent to the above mentioned stakeholders along with the survey questionnaire; few participants from remote areas who work at grass root level in areas with severe water scarcity, were also invited. More than 40 participants attended the workshop in person, whereas some participants also attended the workshop online through a dedicated link provided by the O/o CEA/CFPC.

Mr. Sardar Muhammad Tariq, Chief Executive Officer, Pakistan Water Partnership opened the workshop and explained the participants about SDG Indicator 6.5.1. He recalled the efforts of Global Water Partnership (GWP) to include water and sanitation as a separate goal in Sustainable Development Agenda 2030. He spoke about the concept of IWRM and informed that Pakistan has been working on IWRM even decades before the term IWRM was coined in 1996. He mentioned that the Water and Power Development Authority (WAPDA) Act of 1958 explicitly emphasizes on coordinated development and management of water, land, and energy resources, which is the essence of IWRM. Referring to country's first ever National Water Policy (NWP) approved in April 2018, he stated that policy guidelines have been prepared on the concept of IWRM. He then explained the application of IWRM principles in the context of Pakistan by stating that the total water entering Pakistan through transboundary rivers are governed under Indus Water Treaty (IWT) of 1960 between India and Pakistan and distributed among the provinces according to the Inter-Provincial Water Apportionment Accord of 1991. Both Indus Water Treaty 1960 and Inter provincial WAA 1991 are governed by the inbuilt dispute resolution mechanism.

The Chief Executive Officer, Pakistan Water Partnership further clarified that within the Provinces, all sub sectors, using water, are provided share based on IWRM pillars i.e. social equity, economic efficiency and environmental sustainability. The final outflow caters to maintain river biodiversity before discharging into the sea. **Figure 1** highlights the concept of IWRM being practiced in Pakistan.

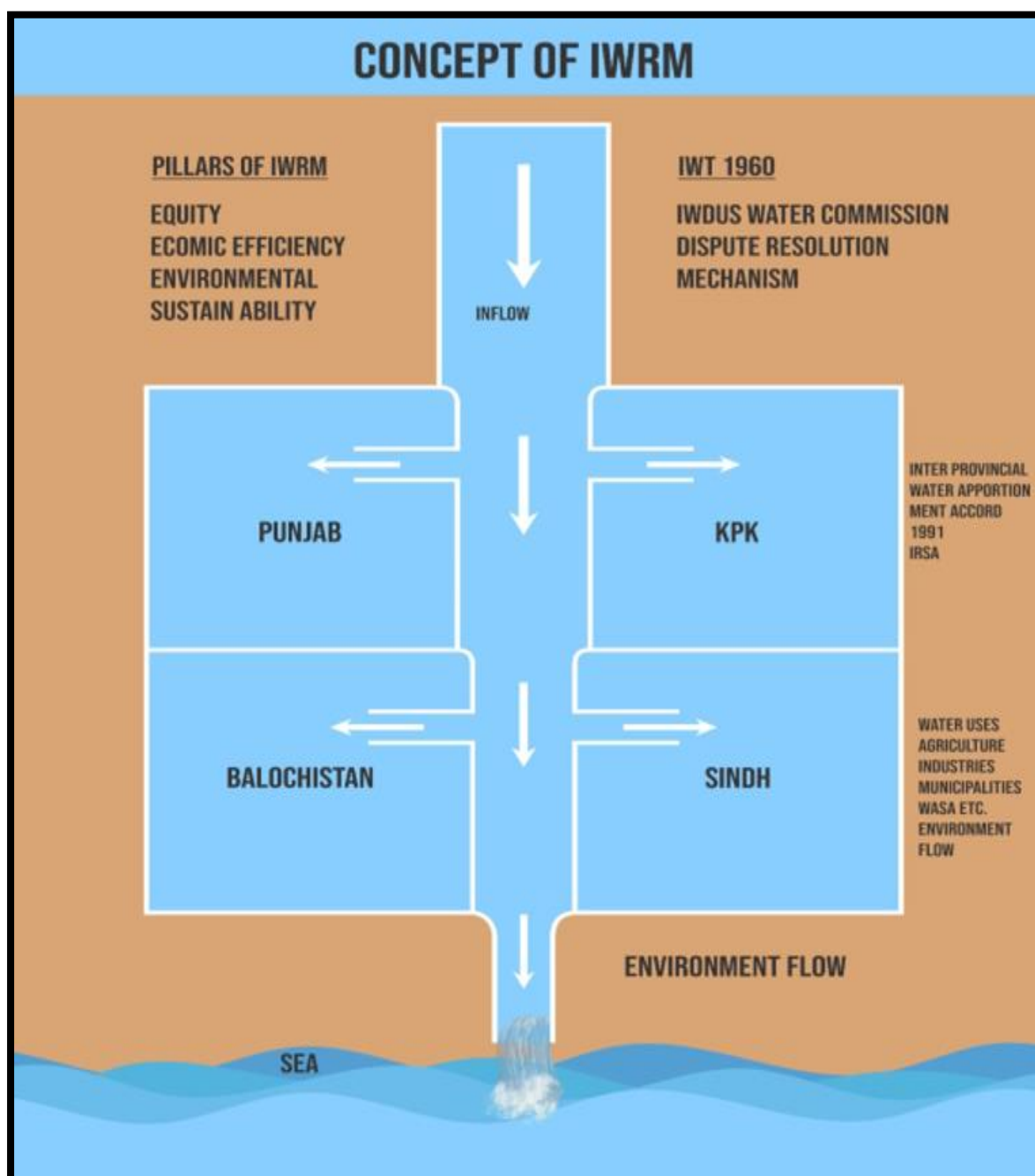


Figure 1: IWRM Principles as applied to Pakistan

Mr. Ahmed Kamal, CEA/CFPC presented the recent developments in the water resources sector of Pakistan. He stated that Pakistan has become highly vulnerable to climate induced natural disasters i.e. droughts/ heatwaves, cyclones, floods and erratic monsoon rains like the unprecedented above-normal rains and subsequent heavy torrential and pluvial flooding experienced in 2022 monsoon, especially in the provinces of Sindh and Balochistan. He pointed out that one of the important lessons learnt from 2022 floods was to ensure in future the sustainable spatial water & land use planning and improve flood forecast & early warning system. For this purpose, a dense telemetry network of instruments is direly needed for acquiring real time hydro- meteorological information. Federal Flood Commission (FFC) alongwith WAPDA, PMD, Provincial Irrigation Departments (PIDs) and other stakeholders,

thus formulated the country's first ever National Master Plan for Flood Telemetry for improved flood forecasting and real time warning dissemination in the country. The expanded telemetry network will ensure that exact/real-time estimate of flood discharges, entering from secondary and tertiary rivers into River Indus and its main tributaries (Jhelum, Chenab, Ravi, Sutlej & Kabul rivers), is available to PMD/FFD Lahore for precise flood forecasting & issuance of flood warning. Besides, this regular supply of real-time flow data will also ensure to have fair water balance in the country.

Regarding implementation process of National Master Plan for Flood Telemetry, National Focal Person apprised that Phase-I of the Telemetry Master Plan (of installation of 457 out of total 707 stations) has been included in umbrella PC-I of updated Flood Protection Sector Project-III (FPSP-III) approved by ECNEC¹ on June 27, 2023. The updated FPSP-III is Phase-I of updated National Flood Protection Plan-IV (NFPP-IV) which is being updated with support from Asian Development Bank in line with the directions of the Government of Pakistan issued in wake of 2022 floods. The updated NFPP-IV would, inter alia, include climate resilient interventions like Early Warning & Telemetry Systems, NbS², Urban Flood Risk Management, Structural Measures for Riverine, Pluvial, Coastal Flooding and GLOFs³ (e.g. Dikes, Dams, and Drainage), Hill Torrents Management works and the Institutional & Legal Framework.

The Workshop facilitator, Mr. Muhammad Ukasha, briefed the participants on the methodology for scoring the SDG Indicator 6.5.1. Following this thirty three (33) survey questions covering four (04) dimensions of IWRM were scored in two (02) facilitated discussion sessions. During facilitated session, detailed discussion was carried out to score each question. All questions were scored with the agreement of the participants. The overall score of SDG Indicator 6.5.1 for Pakistan came out to be 63, which is 8 points better than survey of 2020. However, the implementation status remained at "Medium-High" level. **Table 1** compares the section wise scores of surveys conducted in 2020 and 2023.

Table 1: Comparison of sectionwise scores for surveys conducted in 2020 and 2023

Section	Average Score for 2020	Average Score for 2023
Section 1: Enabling Environment	61	76
Section 2: Institutions and Participation	60	67
Section 3: Management Instruments	49	54
Section 4: Financing	53	55
Indicator 6.5.1 score = Degree of IWRM implementation (0-100)	56	63

¹ Executive Committee of National Economic Council

² Nature based solutions

³ Glacial Lake Outburst Floods

The participants discussed in detail the recent interventions in water sector including approval of implementation framework of the first ever National Water Policy (NWP) and its emphasis on IWRM implementation at different levels. The forum discussed the current conditions of transboundary water management arrangements and recommended measures to improve them. The participants noted that stakeholder consultations for water resources planning, development and management has substantially increased in last few years, e.g. for formulation of (i) NWP Implementation Framework, (ii) updated National Flood Protection Plan-IV, including for its Phase-I i.e. updated FPSP-III; (iii) National Master Plan on Flood Telemetry; (iv) National Master Plan on Flood Drainage; & (v) National Watershed Management Plan etc.

Institutional arrangements for implementing IWRM were discussed and efforts being taken for capacity building of Ministry of Water Resources and associated departments (PCIW, O/o CEA&CFFC, IRSA and PCRWR), to lead effective IWRM implementation, were appreciated and encouraged. The forum discussed that monitoring of surface water is being improved at most of the levels, however, monitoring of groundwater is unsatisfactory. The participants appreciated increased role of gender in IWRM activities and suggested to further strengthen the mechanism in order to make planning process more inclusive. However, the participants were concerned about the arrangements made so far for control of water pollution and protection of water-related ecosystems.

In the concluding remarks, Mr. Sardar Muhammad Tariq, CEO PWP thanked all the participants for making the workshop successful. He suggested that Ministry of Water Resources to play active role in collecting information on efforts and financial support by the Government and donor agencies for improving the level of implementation of sustainable development goals in Pakistan. The Ministry's response was positive and encouraging. Mr. Ahmed Kamal, CEA/CFFC, National Focal Point for SDG 6.5.1 summarized the key findings.

The participants took active part in assigning scores to the survey questions and setting national targets to be achieved by 2030. Completed survey instrument and its annexes representing the collective effort of the multi-stakeholders participation can be found in the end of the report as [SDG651_2023_IWRM_Survey_EN_filled](#).

1. Preface

The United Nations Environment Programme (UNEP) plays a Pivotal & Key Role in tracking the overall progress and supporting UN Member States for achieving 17 SDGs and associated 169 targets through 244 indicators. SDG-6 is a dedicated goal on water and sanitation to ensure availability and sustainable management of water and sanitation for all. It includes 8 targets and associated 11 indicators. Indicator 6.5.1 tracks the degree of Integrated Water Resources Management (IWRM) Implementation in countries and the National SDG 6.5.1 score represents a degree of Implementation of IWRM on a scale of 0 to 100 (Very low to Very high).

Ministry of Water Resources on February-18, 2020 designated the Chief Engineering Advisor for Ministry of Water Resources and Chairman, Federal Flood Commission (the CEA & CFFC) as the National Focal Point to report Pakistan's progress to UNEP on SDG Indicator 6.5.1, as a degree of Integrated Water Resources Management (IWRM) Implementation. To get feedback of the key stakeholders on SDG 6.5.1 Questionnaire, organizing a consultative workshop is an essential requirement set by the UNEP.

Quality progress on Indicator 6.5.1 for Pakistan was collected through a Survey Questionnaire available at <http://iwrmdataportal.unepdhi.org/currentdatacollection> as 'SDG 6.5.1 Survey Instrument 2023'. Two similar workshops were also successfully organized in Islamabad in 2017 and 2020 by the Office of CEA/CFFC, Ministry of Water Resources in collaboration with Pakistan Water Partnership (PWP).

For conducting SDG 6.5.1 Survey for 2023, a communication was made with UNEP on March 16, 2020 seeking collaboration of PWP; a country chapter of Global Water Partnership (GWP) which focuses on supporting countries to achieve the water-related Sustainable Development Goals (SDGs), particularly via SDG 6.5 target on IWRM.

Adopting a proactive approach, sample response on 'SDG 6.5.1 Survey Instrument 2023' alongwith supportive material was shared with all concerned federal and provincial organizations on July 21, 2023 requesting them to prepare their similar institutional inputs through an online survey available at IWRM portal for finalization during the Consultative Workshop. Besides consistent follow up of the case through reminders dated August 10, 2023 and August 16, 2023, preliminary inputs were received from sizable number (32) of organizations.

In order to obtain cogent feedback from all the main stakeholders, in collaboration with Pakistan Water Partnership (PWP), a one-day Consultative Workshop was organized by O/o CEA & CFFC, Ministry of Water Resources on August 21, 2023 at Best Western Hotel, Club Road, Islamabad.

The honorable Secretary, Ministry of Water Resources was invited to grace the occasion as Chief Guest and formally inaugurate the Workshop, however, because of a major shuffle in federal bureaucracy, he could not come. Key findings of the consultative conference and Way Forward regarding assessment and monitoring of SDG indicator 6.5.1 in future are described in the succeeding sections of this report.

2. Conclusions from facilitated discussions on Section 1: 'Enabling Environment'

The forum was apprised that implementation framework for the first ever National Water Policy (NWP) has been approved. Given that NWP is entirely based on the evolvement of Integrated Water Resources Management (IWRM) at all levels, implementation strategy and framework for action specifically addresses IWRM implementation through 163 identified interventions on ground. Three (Punjab, Sindh & Khyber Pakhtunkhwa) of four Provinces got approved their respective provincial water policies that are prepared according to the guidelines of NWP with emphasis on IWRM. Based on this, dedicated Water Regulatory Authorities stand established in the province of Punjab & Khyber Pakhtunkhwa. Water Policy in Balochistan is also being prepared.

In addition, National Water Conversation Strategy has been also prepared according to which major reservoirs will be constructed in next 5-10 years. Stakeholders consultative process for updation of National Flood Protection Plan-IV (NFPP-IV) has been completed on August 29, 2023, its final report is likely to be submitted within October 2023. Besides, a National Master Plan on Flood Drainage is also being prepared in order to address inter-provincial concerns related to drainage of torrential flash flooding.

National Climate Change Policy and National Adaptation Plan also includes measures to ensure implementation of IWRM on order to adapt and fight climate change. The participants, however, generally noted that most of the issues raised and recommendations made still remain unimplemented.

a) What are the main challenges to progress in the country?

- The inadequate surface water supplies have led to excessive abstraction of the groundwater to meet irrigation demands.
- Groundwater management/ monitoring mechanism is weak
- As far as the enabling environment is concerned, transboundary water management arrangements have not significantly improved over last few years. Environmental flows are not part of transboundary agreement i.e. Indus Basin Treaty (IBS) 1960.
- Lack of sustainable spatial/ land & water use planning
- Water use efficiency and water productivity is low
- Environmental flows to preserve aquatic ecosystem have been rarely achieved.
- Available database of canal withdrawals and river reach losses is not reliable for national/ provincial scale monitoring and compliance.

b) How can the main challenges be addressed?

- Enhance reliance on surface water supplies through construction of new storage dams. Urban groundwater abstractions be supplemented by surface water.
- Promote real time monitoring of the groundwater and update the groundwater maps/ Atlas etc.
- Provinces to pass respective Groundwater Regulatory Acts and enact them through Water/ Groundwater Regulatory Authorities (As already enacted in Punjab & Khyber Pakhtunkhwa provinces while yet to be established in Sindh & Balochistan).
- Disaster-development nexus should be studies in order to promote flood-adaptive water and land use

- Re-visiting the transboundary water arrangement as per the current and future scenarios. There is an immediate need to coordinate with Afghanistan on sharing of Kabul river basin.
- Measures for enhancing water use efficiency and increased productivity through climate resilient cropping patterns and introducing low delta crops
- Expansion of telemetry system for harmonizing the water distribution between provinces – Proper water accounting at the provincial level should be put in place.
- Provinces to put more emphasis on controlling pollution of surface and groundwater resources.
- Realistic water pricing system in order to recover also the investment cost for groundwater recharge projects

c) At the question level or in general, what is the perceived rate of progress, and what is the likelihood of reaching High or Very high implementation by 2030? Is there a need for national (interim) target setting (which may be taken up in more detail in Stage 2 of the SDG 6 IWRM Support Programme)?

- Pakistan has set its National Developmental Goals (NDGs) in line with the SDGs. Thus, NWP Implementation Framework and National Water Conservation Strategy have been prepared to be followed at the National and Sub National level with proper monitoring and reporting mechanism.
- Government of Pakistan has increased the funding for water sector projects and started the construction of two (02) mega dams to overcome vast variations in seasonal water availability for food security and environment sustainability. On the other hand, enabling environment depends on the socio-political conditions of the country.
- In the light of current political fiasco, the country is not likely to achieve High implementation status by 2030 unless specific immediate interventions are under taken with firm commitment.

d) What are the major point's stakeholders do not agree on and why?

- The stakeholders' mostly agreed with no major opinion of difference. Some aspects where stakeholders were not satisfied are reflected in the scoring pattern.

e) Other Interesting Points of note from the discussion?

- Ministry of Water Resources to lead the effective implementation of IWRM. In this respect, process for the institutional reforms/ capacity building of the departments attached with the Ministry, has already started.
- Office of the Pakistan Indus Water Commissioner (O/o PCIW) responsible for Indus waters treaty should be made proactive with its capacity enhancement and quality leadership
- Pollution of fresh water bodies and over extraction of ground water needs immediate attention of Policy Makers. Tube wells inventory including domestic, Industrial, commercial , agricultural etc. needs to be prepared and monitoring mechanism be put in place.
- Over use of water in agriculture sector needs serious and immediate attention

- Under climate change and global warming, the Policy Makers should also look towards the coastal region for water and food security instead always looking towards Himalaya melting glaciers in the north as water basket
- To cater for rapid growth in the population and urbanizations, coastal areas development with livelihood opportunity needs attention
- Environmental protection act (EPA) needs to be strictly enforced to address water borne diseases and reduce mortality rate
- Water conservation, recycling of water and rain water harvesting should be encouraged to address water security issues
- Flood waters in particular of hill torrents need to be tapped and diverted to irrigate barren lands/deserts of Punjab, Sindh and Balochistan

3. Conclusions from facilitated discussions on Section 2: 'Institutions and Participation'

The forum discussed the institutional arrangements at different levels and participation of stakeholders to support the implementation of IWRM. The forum was of the opinion that there are various organizations at federal and provincial levels dealing with the water sector. Strong coordination among these organizations was evident during the 2022 floods. To effectively lead the implementation of IWRM, mechanisms to strengthen the collaboration between the stakeholder organizations is essential. The participants appreciated the process of consultation with different stakeholder groups for formulation of NWP Implementation Framework and other related plans/projects/activities.

a) What are the main challenges to progress in the country?

- There are many organizations in the country managing water resources at different levels. These organizations are well coordinated, however, collaborations needed to be developed for accelerated and effective implementation of IWRM.
- The O/o PCIW is looking after implementation of Indus Basin Treaty transboundary water management now and in the future. The existing arrangements are insufficient to address the problems with resolving disputes need to be improved.
- Although water is a provincial subject, this mandate would seem to lie at the provincial level. However, as the floodwater crosses provincial borders and as the spatial development (encroachment of flood plain, development of structures) affects storm water removal/ evacuation, it becomes a federal issue. At federal level the O/o CEA & Chairman Federal Flood Commission is the most appropriate entity to coordinate integrated floodwater management.
- The existing competencies of Office of CEA/ CFFC mainly revolve around the core subjects of civil and electrical engineering mainly focusing on river hydrology, river hydraulics, catchment hydrology, dams & barrage engineering, power engineering with traditional practices being used at country-wide basis. Due to shortage of technical staff owing to non-filling of vacant posts and challenging water sector issues in the country, there is dire need to restructure the O/o CEA/ CFFC and transform it into a National Engineering and Flood Management Authority, by filling of vacant positions and provision of additional staff as well as provision of new tools/ technologies to handle water sector issues.
- Public and private sector consultations have seen marked increase in all aspects of water sectors including policy formulation and its implementation management

- Planning Commission of Pakistan has a special cell dealing with SDGs. They have been extended the invitation but the Cell representatives were unable to attend the Workshop due to prior other engagements.

b) How can the main challenges be addressed?

- Develop collaboration among government organizations for water resources planning and management. Ministry of Water Resources to continue leading the efforts to achieve IWRM at all levels and provide a platform for collaboration among the concerned organizations.
- Office of CEA/ CFFC should be transformed into an Authority by also giving the organization some administrative and regulatory roles to ensure holistic flood management in the country. Development of standards is an essential responsibilities assigned to regulatory bodies. O/o CEA/CFFC may be authorized to regulate flood plains and associated land-use besides to develop and enforce standards with respect to a large number of areas including flood resilient construction; protection of below ground structures; anti flooding devices for buildings; flood protection products; flood control materials etc.
- Capacity of local level organizations to implement water laws implementation is inadequate and need immediate attention.
- Transboundary water management organization should be research driven and consist of highly skilled professionals competent enough to advise government of Pakistan in resolving transboundary issues/disputes in line with treaty's clauses safeguarding Pakistan's interest and capable of dealing future implications of the Treaty.
- Enhance the capacity of the local level organizations mandated to implement local water laws and related legislations.
- The forum agreed to the Public-Private Partnership (PPP) approach for developing and managing water resources.
- The NWP implementation framework and National Water Conservation Strategy prepared for expediting actions of National Water Policy needs to be implemented in letter and spirit.

c) At the question level or in general, what is the perceived rate of progress, and what is the likelihood of reaching High or Very high implementation by 2030? Is there a need for national (interim) target setting (which may be taken up in more detail in Stage 2 of the SDG 6 IWRM Support Programme)?

There are serious efforts underway to enhance the capacity of organizations including Ministry of Water Resources to lead the implementation of IWRM. To achieve High status for the "Institutions and Participations" dimension of IWRM implementation, consistency and continuity of leadership, conducive environment and increased collaboration among organizations and other stakeholders need to be ensured. However, under the prevailing economic and political conditions, it is difficult to maintain the pace and achieving High status of IWRM implementation seems challenging.

d) What are the major points stakeholders do not agree on and why?

Participants had a difference of opinion on the following points:

- Coordination between government authorities on implementing IWRM is not efficient.
- There is no single organization who is maintaining record of all SDG's in respect of financial support and implementation status.
- One of the participant was of the view that there is no organization that can implement all elements of IWRM by itself.

e) Other interesting points of note from the discussion?

National Water Weeks were held in 2021 and 2022 were great success where multiple stakeholders interacted to solve critical water resources challenges of Pakistan.

4. Conclusions from facilitated discussions on Section 3: 'Management Instruments'

The forum discussed that the capacity of federal level organizations to monitor surface water availability has been enhanced. For example, Telemetry system of IRSA is conceived now and work initiated for its implementation on ground, moreover, plans are underway to monitor small channels through installation of telemetry systems at 457 locations. The participants stressed that groundwater monitoring is limited. The Water Apportionment Accord (WAA) tool of IRSA, which is developed with the assistance of Commonwealth Scientific and Industrial Research Organization, has improved IRSA's capacity to automate the process of fair distribution of waters of Indus river among provinces.

It was discussed that implementation of "Management Instruments" for pollution control and protection of water-related ecosystems is lacking. However, participants appreciated that with the initiation of Recharge Pakistan and Living Indus Initiative projects, the management of ecological health of river Indus and dependent ecosystems will improve.

The forum shared serious concern on the non-continuous sharing of the data by India which is the violation of Indus Basin Treaty. It was suggested to build capacity in collecting and processing remote sensing information to analyze transboundary waters.

Mr. Ahmed Kamal, CEA/CFPC, apprised the forum about the advancements in disaster risk reduction measures including installation of new Weather Radars and Procurement of mobile radars to monitor localized system for generating floods. He informed that updated National Flood Protection Plan-IV (NFPP-IV) is expected to be finalized in October, 2023. Besides, JICA will be conducting embankment assessment to strengthen existing flood protection and mitigation network. He added that model River Act, already prepared in 2016, has been shared with the provinces in order to delineate the river width and mark the encroachment zones.

Participants were informed that data and information sharing arrangements have improved since the last reporting period. Representatives from Ministry of Climate Change & Environmental Coordination apprised about climate dashboard and MIS portal developed by the Ministry through which data is freely accessible to all including general public.

a) What are the main challenges to progress in the country?

- Irrigation consumes over 90% of the country's water resources. Irrigation practices are highly unsustainable and result in loss of significant amount of water. Water returns in term of unit of land and water are one of the lowest in the world.
- Very limited implementation of pollution control laws.
- Limited management of water-related ecosystems.
- Inadequate groundwater management plans.
- Uncertainty in availability of transboundary water data for flood management.
- More work need to be done to bring water data into public domain for easy access.

b) How can the main challenges be addressed?

- Introduction of water conservation technology and techniques, and high efficiency irrigation system. Training of farmers to enable them to optimally utilize the water resources and to make them aware of their critical role in water management.
- Move towards planting crops that require less water and have more economic value.
- Pakistan is already facing climate change impacts. For sustainable cropping pattern revised agro-climate zoning of whole of Pakistan has to be carried out
- Capacity building of organizations responsible for implementing the National Environmental Quality Standards (NEQS) to effectively control the water quality.
- Establishment of consortium of government organizations, NGOs and private sector to raise the awareness on management and conservation of water-related ecosystems. Encourage practices to protect such ecosystem and recommend implementation framework for legislations pertaining to the protection of water-related ecosystems.
- Provinces need to expedite the process of formulation and implementation of groundwater regulatory act and establishment of groundwater regulatory authorities as guided by the NWP.
- Pakistan shall make use of global and remote sensing datasets that are available through multiple platforms to access transboundary waters.
- The forum put a strong emphasis on the creation of unified national dataset that shall be publicly available.

c) At the question level or in general, what is the perceived rate of progress, and what is the likelihood of reaching High or Very high implementation by 2030? Is there a need for national (interim) target setting (which may be taken up in more detail in Stage 2 of the SDG 6 IWRM Support Programme)?

Management Instruments are one of the main focus of national and provincial (where applicable) water policies, however, in some fronts the progress is slow or stagnant e.g. pollution control and management of water-related ecosystems. There is a dire need to set immediate dedicated targets to improve on these aspects. The transboundary water management is an issue of great concern, which requires due consideration and cooperation of regional and global stakeholders. In addition fresh water bodies which existed in abundance either have come under new housing schemes or their catchment areas have been subject to encroachments and water bodies have disappeared over the time. These water bodies played a positive role in ground water recharge and maintained atmospheric moisture.

d) What are the major points stakeholders do not agree on and why?

The stakeholders' mostly agreed with no major opinion of difference. Some aspects where stakeholders were not satisfied are reflected in the scoring pattern.

e) Other interesting points of note from the discussion?

- Most aspects of "Management Instruments" dimension of IWRM are covered in NWP.
- Management tools for public needs to be user friendly and easily understandable.
- Telemetric system is important to get real time data for better water management to enhanced water benefits
- Use of satellite technology to monitor real time water flows including Transboundry rivers to manage the flooding with in the country is urgently needed.

5. Conclusions from facilitated discussions on Section 4: 'Financing'

The forum highly appreciated that "Financing" for water resources activities has increased from 3.4% in 2020 to 16% in 2023 of Annual Public Sector Development Programme (PSDP) allocation. The involvement of Supreme Court of Pakistan has helped a lot in enhancing water sector financing and through public funding effort Supreme Court has collected PKR 10 billion for construction of major reserviors. It is expected that water sector financing will significantly increase through the international commitments under Loss & Damage Facility established during COP 27.

a) What are the main challenges to progress in the country?

- Revenue generation and collection from the use of water is inadequate to meet future development and O&M cost
- Slow disbursement of funds due to inadequate capacity of organizations to carry out projects and programmes at the required pace
- Thin spreading of water sector through Annual Development Programme is mainly responsible for cost overrun and time over run. Priority needs to be set to fully finance limited priority interventions.

b) How can the main challenges be addressed?

- Main focus needs to be on realistic water pricing mechanism for each sub sector of water and water revenue collection
- Realistic allocation of funds as planned in approved PC-I
- Capacity building of organizations to accelerate funds utilization by completing activities on time

c) At the question level or in general, what is the perceived rate of progress, and what is the likelihood of reaching High or Very high implementation by 2030? Is there a need for national (interim) target setting (which may be taken up in more detail in Stage 2 of the SDG 6 IWRM Support Programme)?

- Approved NWP stipulates the gradual increase of water sector allocation to 20% of PSDP in year 2030. In order to fully utilize the envisaged budget in NWP and achieve

High status, capacity enhancement of relevant organizations to manage and effectively disburse these funds is required.

- A new water pricing structure has to be introduced in each sub sector of water uses including the river management.
- Funds are diverted on other SDG's and targets for which no record is available. Proper inventory needs to be maintained.

d) What are the major points stakeholders do not agree on and why?

The stakeholders' mostly agreed with no major opinion of difference.

e) Other interesting points of note from the discussion?

- Substantial funds are required for proper functioning of Ministry of Water Resources to lead effective IWRM implementation in the country.
- Organizations dealing with water sector need technical professionals in the key positions for better water management
- General lack of record keeping makes some vital SDGs interventions going unnoticed.

6. Next Steps

Mr. Sardar Muhammad Tariq, CEO PWP, thanked all the participants in attending physically the workshop in extreme times and giving their valuable input for the completion of the survey. He mentioned that we came a long way since last reporting period and we expect to be at a better position by the next reporting round in 2026. He mentioned that we need to keep moving as still a lot need to be done specifically in groundwater, environmental flows, ecosystems, and management of transboundary waters. The external factors such as climate change entail significant threat to water-food-energy nexus of the country. He further explained that over 400 million gallons of polluted industrial and domestic waste from Karachi city is daily being dumped in to the Karachi sea which has disastrous effect on marine life, the future food basket of Pakistan.

Mr. Ahmed Kamal, CEA/CFPC, National Focal Point for SDG Indicator 6.5.1, added that water is the life-line of the country and poor management of flood waters resulted in loss of water whose economic value is equal to billions of dollars. Sustainable development of water resources in line with the SDG-6 targets is critical for the well-being of upcoming generations. He mentioned that as a next step, priority action areas to accelerate implementation of IWRM can be extracted from the workshop report and plan(s) to address those action areas need to be formulated. He thanked his team and PWP professionals for successfully organizing the event. He also thanked UNEP-DHI and GWP for their support in organizing this 3rd Country Stakeholders Conference on SDG Indicator 6.5.1.

In the end, Mr. Sardar Tariq and Mr. Ahmed Kamal gave souvenirs to the Area Water Partnerships Representatives who were working in remote areas to ensure food and water security for vulnerable groups, as well as the youth coordinator from PWP who offered their support for the implementation of IWRM activities. Both the dignitaries were especially appreciative of the efforts made by the Area Water Partnership while working in the Cholistan desert in temperatures as high as +50 °C.

Annex 1

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List of participants

**List of Participants for the One Day Stakeholders Workshop on Sustainable Development
Indicators 6.5.1 on IWRM in Islamabad- 21st August, 2023**

Sr.#	Name	Designation	Organization	Address	Tele	Email
1.	Mr. Sardar Muhammad Tariq	Chief Executive Officer/Ex-Advisor on Large Dams (MOWR)	Pakistan Water Partnership (PWP)	Village & Post Office Kot Najibullah, Haripur	03028505538	smtariq@pwp.org.pk
2.	Mr. Ahmad Kamal	Chief Engineer Advisor / Chair FFC	Ministry of Water Resources, GOP	Plot#6 Attaturk Avenue, G-5/1, Islamabad	0300-5278981	ifmengineer@gmail.com
3.	Mr. Sahibzad Khan	Director General	Pakistan Meteorological Department	Pitras Bukhari Rd. H-8/2, Islamabad,	(051) 9250360	sahibzad@gmail.com
4.	Prof. Dr Shaheen Akhtar	Head of Department International Relations, Editor Journal of Contemporary Studies	National Defence University,	E-9 Islamabad,	03215208475	shaheenakhtar.2020@gmail.com
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10.	Dr. Pervaiz Amir	Agriculture Economist	Asianic International	House -3, Street -35, F-8/1 Islamabad	03005055560	p.amir2010@yahoo.com

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23	Eng. Zafar Iqbal	Superintending Engineer (Floods-II)	Ministry of Water Resources, GOP	Plot#6 Attaturk Avenue, G-5/1, Islamabad	0301-7801859	zispak2001@gmail.com
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Annex 2: Agenda

3rd Country Stakeholder Workshop for SDG 6.5.1

Best Western Hotel,

6 Club Rd, Near Rawal Dam Interchange Islamabad

Monday Aug 21, 2023

Programme

09:30 – 10:00 Hours	Registration of Participants (30 min)
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10:00-10:30 Hours	Welcome and Introduction (30 min)
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- Welcome and Introduction to the meeting by Sardar Muhammad Tariq, Chief Executive Officer Pakistan Water Partnership.
- Official Opening of the meeting by Ministry of Water Resources high-ups.
- Brief presentation of the stakeholders participating by Mr. Ahmed Kamal, Chairman Federal Flood Commission/Focal Point SDG 6.5.1

10:30-11:00 Hours	SDG 6.5.1 - Background and overview (30 min)
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- Presentation on SDGs implementation and progress status in Pakistan, speaker TBD
- Background to SDG 6.5.1 and the survey, and an overview of the questionnaire by Dr. Muhammad Ukasha, Facilitator.

11:00-11:15 Hours	Tea Break (15 min)
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11:15-13:15 Hours	Facilitated discussions (2 h)
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Section 1 and 2: 'Enabling Environment' and 'Institutions and Participation'

- Introduction and support to understand the sections
- Roundtable discussions

Q1a: What is the status of policies, laws and plans to support Integrated Water Resources Management (IWRM) at the national level?

Q1b: What is the status of policies, laws and plans to support IWRM at other levels?

Q2a: What is the status of institutions for IWRM implementation at the national level?

Q2b: What is the status of institutions for IWRM implementation at other levels?

- Reporting back and discussion - including agreeing on scores for the questions under section 1 and 2 in the questionnaire and capture 3-5 key points from the discussion for the narrative sections to support the rationale or capture divergences

13:15-14:00 Hours	Lunch/Prayer Break (45 min)
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14:00-16:30 Hours	Facilitated discussions Continued (2½ h)
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Facilitated discussions Continued on Section 3 and 4: 'Management Instruments' and 'Financing'

- Introduction and support to understand the section and the questions
- Roundtable discussions

Q3a: What is the status of management instruments to support IWRM implementation at the national level?

Q3b: What is the status of management instruments to support IWRM implementation at other levels?

Q4a: What is the status of financing for water resources development and management at the national level?

Q4b: What is the status of financing for water resources development and management at other levels?

- Reporting back and discussion - including agreeing on scores for the questions under section 3 and 4 in the questionnaire and capture 3-5 key points from the discussion for the narrative sections to support the rationale or capture divergences

16:30-16:45 Hours	Tea Break (15 min)
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16:45-17:30 Hours	Wrap up and Closing of the meeting (45 min)
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- Follow up on any loose ends from the previous discussions by Mr. Ahmed Kamal, Chairman Federal Flood Commission/Focal Point SDG 6.5.1
- Agree on next steps for follow up and monitoring of the SDG 6.5.1 indicator by Mr. Ahmed Kamal, Chairman Federal Flood Commission/Focal Point SDG 6.5.1
- Wrap up and closing remarks of the workshop by Sardar Muhammad Tariq, Chief Executive Officer Pakistan Water Partnership.

Annex 3: Facilitator's Comments

The number and diversity of stakeholder's who participated in the workshop is encouraging. Representation from gross root level was ensured by PWP through inviting the members of Area Water Partnerships (AWPs) of remote areas.

The participants actively took part in the scoring process and confidently raised their concerns. Most of the questions were scored after rich discussions and agreement of the present stakeholders.

Support of UNEP-DHI and GWP was instrumental in successfully organizing the workshop. Many opportunities for supporting Stage-2 of the IWRM implementation process can be extracted from the multi-stakeholder consultations.

The facilitator is very much thankful to PWP, GWP, O/o CEA/CFFC and UNEP-DHI for providing this opportunity.

Annex 4: Photos







SDG Indicator 6.5.1: Survey

DEGREE OF INTEGRATED WATER RESOURCES MANAGEMENT (IWRM) IMPLEMENTATION

Reporting Year: **2023**

Country	Pakistan
 	
Submission Form	
Date of submission	28 th September 2023
National SDG 6.5.1 Focal Point information	
Name, Job title	Mr. Ahmed Kamal, Chairman Federal Flood Commission & Chief Engineering Adviser
Organisation	Office of the Chief Engineering Advisor/ Chairman Federal Flood Commission, Ministry of Water Resources
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	
Were other institutions/stakeholders involved and consulted in the reporting process for this indicator?	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(Please provide further details on the consultation process in Annex C)</i>	
If yes, please indicate the mode(s) of consultation (please provide further details in Annex C):	
<input type="checkbox"/> Phone calls <input type="checkbox"/> Email exchanges <input type="checkbox"/> In-person meetings <input checked="" type="checkbox"/> Dedicated stakeholder workshop(s) <input checked="" type="checkbox"/> Other (please specify): Online survey	
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 for country reporting on Sustainable Development Goal (SDG) indicator 6.5.1: “Degree of integrated water resources management (IWRM) implementation”. The indicator is measured on a scale of 0 – 100, calculated based on scores from approximately 30 questions in this survey, covering different aspects of IWRM. Indicator 6.5.1 measures progress towards target 6.5: “By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate”. The target supports the equitable and efficient use of water resources, which is essential for social and economic development, as well as environmental sustainability. The actions to achieve target 6.5 directly underpin the other water-related targets within SDG-6: “Ensure availability and sustainable management of water and sanitation for all”. Further guidance on completing this survey is provided in the SDG indicator 6.5.1 [Monitoring Guide](#). Both this Survey and the Monitoring Guide are available in six UN languages (Arabic, Chinese, English, French, Russian and Spanish), and Portuguese, available on the [IWRM Data Portal](#).

About the survey

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

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

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

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

How to complete the survey

Scoring: For each question, enter a score between 0 and 100, in increments of 10.. It is not possible to omit questions⁴. The score selection is guided by descriptive text for six thresholds, which are specific to each question. If a country judges the degree of implementation to be between two thresholds, the increment of 10 between the two thresholds may be selected. The potential scores that may be given for each question are: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100.

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

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

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

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

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

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

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

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

⁴ If the country judges the question to be ‘not applicable’, you can enter ‘n/a’. However, the survey has been designed to be relevant to all countries, and an ‘n/a’ response is unlikely.

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

Progress and differences since previous reporting rounds

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

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

Data collection and submission

A broad stakeholder engagement process is encouraged to complete the survey. This helps to increase stakeholder participation and ownership of water management and decision-making processes, and makes the completed survey a more robust and useful diagnostic tool for further discussions and planning. SDG 6.5.1 Focal Points are asked to fill in the Reporting Process Form in Annex C to increase transparency and stakeholder confidence in the results at all levels. The extent and mode of stakeholder engagement is up to each country, and further guidance is provided in the [Monitoring Guide](#). [Coordination with Focal Points for other SDG indicators is encouraged where feasible and relevant.](#)⁵

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

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

⁵ Monitoring of 6.5.1 is being done as part of the UN-Water initiative on integrated monitoring of SDG 6 ([IMI-SDG6](#)). Support is provided in collaboration with UN-Water members and partners. For a list of questions that relate to other SDG indicators (mainly in section 3), please see Annex 3 of the Monitoring Guide.

Part 2 – The survey

1 Enabling environment

This section covers the enabling environment, which is about creating the conditions that help to support the implementation of IWRM. It includes the most typical policy, legal and planning tools for IWRM⁶. Please refer to the glossary for any terms that may require further explanation. **Please take note of all footnotes as they contain important information and clarification of terms used in the questions and thresholds.**

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

1. Enabling Environment							
		Degree of implementation (0 – 100)					
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
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.	Based on IWRM, being used by the majority of relevant authorities to guide work.	Policy objectives consistently achieved .	Objectives consistently achieved, and periodically reviewed and revised.
Score	80						
Status and progress: The first-ever National Water Policy (NWP) that is based on IWRM was approved in April 2018. Since the last reporting round in 2020, there has been significant progress in the achievement of policy objectives. For example, construction of two large new water storage reservoirs (Mohmand dam and Diamer Basha dam) has been started. Furthermore, the annual funding of IWRM and water resources development has been increased from 3.4% to whopping 16% of Public Sector Development Programme (PSDP). National water conservation strategy (NWCS) by the Ministry of Water Resources (MOWR) has been prepared under the guiding principles of IWRM set out in the NWP. Over the reporting period (2020-2023), there are many other initiatives taken by different stakeholders in connection with strengthening IWRM implementation in Pakistan, e.g. Update of National Flood Protection Plan-IV (NFPP-IV), National Master Plan on Flood Telemetry, Drainage Master Plan and Establishment of Regional Flood Forecasting and Early Warning Centres, besides Recharge Pakistan Project by World Wide Fund (WWF) and Living Indus Initiative by United Nations Development Programme (UNDP) both in collaboration with the Ministry of Climate Change & Environmental Coordination (MOCC & EC). Moreover, more than 400 small and medium dams have been approved to be constructed in 2-3 years. National Adaptation Plan (NAP) prepared by MOCC is a cross-cutting document which inter-alia includes adoption of IWRM practices and suggest groundwater policies. These all initiatives are aligned with the objectives and timelines of NWP.							
Way forward: Rigorous and continuous monitoring of IWRM activities and their outcomes to identify gaps and areas of improvement. Increased engagement of all stakeholders to sensitize them of IWRM progress and to accelerate the process by integrating experiences of stakeholders.							

⁶ For examples of good practices of policies, laws and plans, please see the tools, case studies, and resources in the Global Water Partnership (GWP) [IWRM ToolBox](#).

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.	Based on IWRM, being applied by the majority of relevant authorities.	Based on IWRM and all laws are being applied across the country.	Based on IWRM and all laws are enforced across the country, and all people and organizations are held accountable.
Score	70					

Status and progress: Water Apportionment Accord (WAA) of 1991 is a national law that governs the distribution of waters of river Indus among the four provinces of the country. Indus River System Authority (IRSA) was established to enforce WAA. IRSA is comprised of 5 members, one from each province and the fifth member represents the federal government. The chairmanship of IRSA is rotated among all members on annual basis. IRSA since its inception has been judiciously carrying out its mandate of distributing water among provinces, however, there are concerns raised by the provinces on inequitable distribution. To support this telemetry system has been conceived on which the practical work has been started. Moreover, a high-level committee has been established to ascertain the fairness of distribution using Acoustic Doppler Current Profiler measurements. With the help of Commonwealth Scientific and Industrial Research Organization, IRSA during the period of 3rd reporting round has developed a WAA tool. This tool automates the decision-making process to ensure fair distribution of water following WAA clauses. In addition to WAA, a river act was proposed in 2016 to discourage encroachment of floodplains. Punjab and Khyber Pakhtunkhwa provinces have adopted the Act, whereas Sindh and Balochistan provinces, and region of Gilgit-Baltistan has started the legislative process to adopt the act.

Way forward: There is no national groundwater law present in the country. Groundwater is a major source of fresh water and is being depleting at an alarming rate. There is a dire need to bring legislation for managing groundwater sustainably within the umbrella of IWRM. Furthermore, environmental flows are required to be enforced.

	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	80					

Status and progress: Over the currency of the reporting period (2020-2023), MOWR prepared, received government's approval, and started implementing the NWP implementation framework (NWP-IF 2018-2030)). NWP-IF initially included 32 priority actions which have been increased to 40 in view of the lessons learnt from devastating 2022 floods faced by the country. Accordingly, updated NWP-IF is under approval process; its link may not be provided till its approval by National Water Council. This is indeed the successful implementation of NWP clauses that the achievements outlined in survey question 1.1a above have been achieved during the reporting period. Moreover, at national level attached departments of MOWR have developed plans with reasonable achievements such as Water and Power Development Authority (WAPDA)'s 2050 vision, implementation of updated National Flood Protection Plan-IV (NFPP-IV, 2015-2025) by Federal Flood Commission (FFC), successful negotiation of Office of the Pakistan Commissioner for Indus Waters (O/o PCIW) with Indian counterpart on timely data sharing and upgradation of Hydromet network by Pakistan Meteorological Department (PMD) by adding 250 new stations in different ecological zones across the country.

Climate change considerations: National Climate Change Policy (NCCP, updated 2021) and recently approved National Adaptation Plan (NAP, 2023) have sections on and clear linkages to IWRM in context of climate change impacts and adaptation. Furthermore, MOCC in collaboration with other stakeholders is carrying out interventions to build capacity to adapt to climate resilient water practices. For example, "Transforming Indus Basin with Climate Resilient Agriculture and Water Management" is a 6 yearly project (2021-2026) being implemented by Food and Agriculture Organization of the United Nations and Glacial Lake Outburst Floods (GLOF) project with UNDP.

Way forward: Groundwater management (quantity and quality) plans to be developed and implemented. To ensure survival of the water related ecosystems, plans need to be in placed and enforced to ensure that upper riparian should provide sufficiently clean water to downstream users.

1.2 What is the status of policies, laws and plans to support IWRM at other levels?

		Degree of implementation (0 – 100)					
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
a. Sub-national ⁷ water 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.	Based on IWRM, being used by the majority of relevant authorities to guide work.	Based on IWRM and policy objectives consistently achieved by a majority of authorities.	Based on IWRM and objectives consistently achieved by all authorities, and periodically reviewed and revised.
Score	80						
<p>Status and progress: Punjab and Sindh as well as Khyber Pakhtunkhwa have developed and are implementing provincial level water policies that are based on the guidelines of NWP. Whereas Balochistan province is in process of finalizing and tabling policy for approval of the respective provincial cabinet. Provinces are working on preparation of groundwater regulatory authorities and framework; this initiative align with the NWP as well as provincial water policies. Capital Development Authority has prepared and implementing a legislation to manage the depleting and deteriorating groundwater conditions of the capital city. NAP interventions being downscaled to provincial levels to bring in local practices in adaptation to climate change. Food security and forest conservation policies at inter-alia includes IWRM at different levels being prepared at provincial levels.</p> <p>Most importantly there are irrigation laws in each province which stipulates regulations to manage and distribute irrigation water. Rotation-based water distribution among different sectors and users being carried out as per the clauses of these laws.</p>							
<p>Way forward: More communication around initiatives to implement IWRM is required to engage large number of stakeholders ranging from local communities to private sector. Groundwater laws need to be developed and implemented. More work is needed to utilize the state-of-the-art tools and technologies to revisit and revise the policies whenever deemed necessary.</p>							

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

b. Basin/aquifer management plans⁸ 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	80					
<p>Status and progress: Most of the country falls within the boundaries of Indus basin, therefore, responses to national level IWRM plans are relevant here. Moreover, Balochistan Water Resource Revival Programme is studying the areas outside the boundaries of the Indus basin. The programme has divided the province in 18 hydro basins to characterize their hydrology and subsequently prepare management plans for those.</p> <p>Under the national water plan, sub-basin telemetry system is being prepared to improve monitoring of river flows at 707 points where 457 telemetry stations will be installed for small rivers. Flood forecasting and management has seen great improvement at sub-basin levels, e.g., Flood Forecasting Division (FFD) of PMD has planned to establish six new regional centres to enhance regional forecasts, mobile radars procured and in operation to generate nowcast at critical locations, and installation of 3 full-scale weather radars in country to anticipate rainfall rates, track cyclones and improve weather forecast for aviation purposes.</p> <p>Karez system in Balochistan province is being worked out to improve development and management of aquifer sources. Moreover, small ponds and dams are being constructed across the country to improve recharge to groundwater sources. Groundwater atlas for different regions being prepared with special emphasis to urban areas. Rainwater Harvesting (RWH) guidelines for different regions are being prepared. As a pilot study, rooftop RWH setup installed at MOWR, for which guidelines to upgrade are in process.</p>						
Way forward: More work needed for aquifer level management plans. State-of-the-art technologies required to be utilized to support IWRM implementation at different levels.						

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
c. Arrangements for transboundary water management.⁹	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 .

⁸ 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.

⁹ For 'transboundary' definition, see Annex A. All transboundary level questions should reflect the situation in most of the 'most important' transboundary basins/aquifers, which should be listed in the 'status and progress' field. An 'arrangement' should be a formal commitment, and may be referred to as a bilateral or multilateral agreement, treaty, convention, protocol, joint declaration, memorandum of understanding, or other arrangement between riparian countries on the management of a transboundary basin/aquifer. Arrangements may be interstate, intergovernmental, inter-ministerial, interagency or between regional authorities. They may also be entered into by sub-national entities.

Score	70						
Status and progress: Indus Basin Treaty (IBT) is the only transboundary water management arrangement of the country. Since its inception in 1960, the implementation of the treaty has been somewhat dwindling. However, more recently (within past few months), after the intervention of third parties, the data sharing arrangements has been resumed; transboundary flood data sharing remained suspended for 2-3 years however it has been restarted during the Monsoon 2023. The IBT does not have provisions for groundwater sharing and environmental flows. In addition, no climate change considerations are part of IBT. Also, no renegotiations and/or revisions are carried out in the provisions of IBT since its inception in 1960. No transboundary arrangement for Kabul River is in place to manage the resources among Pakistan and Afghanistan. With increasing diversions in Afghanistan region, it is becoming extremely important to develop and implement arrangement for managing and sharing water resources of the Kabul River Basin.							
Way forward: Treaty with Afghanistan on Kabul River. Inclusion of groundwater, environmental flows, and climate change impacts in the IBT. Use of remote sensing and other information and tools to produce datasets for transboundary water management.							
d. Sub-national water resources regulations ¹⁰ (laws, decrees, ordinances or similar). ¹¹		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.	Based on IWRM, some regulations being applied in the majority of jurisdictions.	Based on IWRM and all regulations being applied in the majority of jurisdictions.	Based on IWRM and all regulations being applied and enforced in all jurisdictions, and all people and organizations are held accountable.
Score	70						
Status and progress: Mentioned in the response to survey question 1.2a above that irrigation laws have been practiced and adopted by each province.							
Way forward: Groundwater and environmental flow laws needed to be established and applied.							

¹⁰ Sub-national includes jurisdictions not at national level, such as: states, provinces, prefectures, counties, councils, regions, or departments. In cases where there are no explicit sub-national regulations, please answer this question by considering how national regulations are being implemented at sub-national levels. Responses should consider the highest, non-national level(s) as appropriate to the country. In the status description, please explain which level(s) are included in the response.

¹¹ This question has replaced question 1.2d from the baseline survey instrument, which was for federal countries only.

2 Institutions and participation

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

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

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

2. Institutions and Participation						
		Degree of implementation (0 – 100)				
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)
2.1 What is the status of institutions for IWRM implementation at the national level?						
a. National government authorities¹² 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 roles and responsibilities to lead IWRM implementation, and the capacity¹³ 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).
Score	70					
Status and progress: MOWR is the apex body of the government of Pakistan that deals with the water resources planning, development, and management at the national level. Inter-alia one of its primary mandates is to implement NWP (that is based on IWRM). Ministry is supported by its 5 attached departments namely i) IRSA, ii) WAPDA, iii) O/o PCIW, iv) Office of the Chairman Federal Flood Commission / Chief Engineering Adviser (O/o CFFC / CEA) which is also national focal point for SDG indicator 6.5.2., and v) recently included Pakistan Council for Research in Water Resources (PCRWR) which was previously under the Ministry of Science and Technology.						

¹² ‘Government authorities’ could be a ministry or ministries, or other organizations/institutions/agencies/bodies with a mandate and funding from government.

¹³ ‘Capacity’ in this context is that the responsible authorities should have the required knowledge and technical skills, including planning, rule-making, project management, finance, budgeting, data collection and monitoring, risk/conflict management and evaluation. Beyond having the technical capacity, authorities should also have the financial capacity to actually be leading the implementation of these activities.

Each of the attached departments has its own mandate(s) which addresses one or more aspects of the IWRM elements. MOWR acts as a central point of all IWRM activities being undertaken by its attached department and reports them to government of Pakistan. MOWR all together with its attached departments, therefore, leads the implementation of IWRM at national level. According to their mandate(s), attached departments have reasonable capacity to lead IWRM elements. For example, IRSA with availability of WAA tool is managing waters of river Indus more fairly among the provinces. Moreover, the planned telemetry system on Indus Basin Irrigation System will enhance capacity of IRSA to make more informed decisions for water distribution. There have been many capacity building initiatives within the Ministry and attached departments to support implementation of IWRM. PCRWR has been awarded research projects to improve water management in Doabs and Cholistan area, and to work on saline agriculture within the arid regions of the country. Furthermore, MOWR has partnered with 12 developmental sector organizations to collect and analyze data on IWRM activities being implemented by these organizations.

Way forward: Increase coordination among the attached departments and inter-developmental initiatives to fully appreciate the integrated nature of water management.

		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
b. Coordination between national government authorities representing different sectors¹⁴ on water resources policy, planning and management.		No information shared between different government sectors on water policy, planning and management.	Information on water resources, policy, planning and management is made available between different sectors.	Communication: Information, experiences and opinions on water resources, policy, planning and management are shared between different sectors.	Consultation: Opportunities for different sectors to take part in water resources 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 relating to water resources planning and management.	Co-decisions and co-production: Coordination through jointly agreed upon processes and power is shared between different sectors on joint policy, planning and management activities.
Score	70						
Status and progress: Coordination among the national level government organizations have seen improvement over the reporting period, specifically during the floods of 2022. The government moved towards developing more collaborative approaches to plan, develop and manage water resources. For example, implementation plan of NFPP-IV has been developed in close coordination with other organizations including MOCC & EC whereby not only NWP guidelines were adhered, guidelines from NCCP and NAP has been considered. Besides Office of CEA/CFPC (National Focal Point) is a multi-stakeholder platform to deliberate on issues related to planning, development and management of water resources including the integrated flood risk management. In the aftermath of climatically invigorated 2022 floods, its capacity building and strengthening, through institutional reforms, is being considered on priority basis.							
Climate change considerations: MOCC & EC is the main coordination body for climate change activities in the country. MOWR and MOCC & EC works in close coordination on matters related to IWRM or water resources planning, development, and management. Climate change (or MOCC & EC) considerations are given due importance by MOWR in all the							

¹⁴ Relates to coordination between the government authorities responsible for water management and those responsible for other sectors (such as agriculture, aquaculture, energy, climate, water supply and sanitation, tourism, municipal use, mining and industry, environment etc.) that are dependent on water, or impact on water (including surface water / groundwater considerations).

activities.							
Way forward: Increase collaboration with more relevant departments / organizations such as Federal Water Management Cell of Ministry of Food Security and Research (MONFSR).							
c. Public participation¹⁵ in water resources policy, planning and management at national level.		No information shared between government and the public on policy, planning and management of water resources.	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 in relation to policy, planning and management of water resources.	Consultation: Government authorities regularly use information, experiences and opinions of the public in relation to policy, planning and management of water resources.	Collaboration: Mechanisms¹⁶ established, and regularly used, for the public to take part in relevant water resources policy, planning and management processes.	Representation: Formal representation of the public in government processes contributing to decision making on important issues and activities in relation to water resources.
Score	70						
Status and progress: Public hearing (at the inception) of all projects is carried out as per the national guidelines to hear from the communities and other relevant stakeholders including academia. Communities are encouraged to take part in water related activities.							
<p>National water week was organized for the first time in 2021. Following this 2nd national water week was organized in 2022. International Water Management Institute (IWMI) took lead in organization of these events and made these events success with collaboration from MOWR. Multiple stakeholders fully engaged during the two water weeks sharing their experience and opinions on implementing IWRM activities. These events set forth a mechanism to engage public in water resources planning, development, and management. Participants included professionals from government, development sector, civil sector, private sector, academia and general public. Participants were invited through letters and emails. The event was publicly advertised (through social media platforms e.g., Facebook, Twitter, and LinkedIn) to encourage participation of anyone interested in attending the events. The event had some hybrid sessions that are attended by in-person and online participants.</p> <p>This year National Water Week has been scheduled for Dec 04-08, 2023. All stakeholders at federal & provincial/ local level including private sector are invited to attend. This year's theme is "Transformative Pathways for Water and Food Systems in a Climate Resilient Pakistan". Details at https://pcrwr.gov.pk/pakistan-water-week-2023/#About</p> <p>Hashoo Foundation lead the civil and developmental sector consortium in the preparation of NWP implementation framework. The consortium was joined by IWMI, Water-Aid and IUCN. The consortium worked on inclusion of gender and communities in preparation of NWP implementation framework. Islamic Relief worked with communities within floodplains and hill torrents. Public was actively engaged in other activities as well for example, PCRWR developed crop water requirement app considering input from the farmers, Asian Developmental Bank and Netherland missions visited flood effected areas and engaged with the effected community to gather their input for emergency response, and Karot hydropower authority to share data on flow and reservoir level with Margalla committee for managing biodiversity of Margalla hills.</p>							
Way forward: More events (across the country) imitating national water week needs to be organized for enhancing public outreach and participation in decision making. Also, laws							

¹⁵ 'The public' includes all interested parties who may be affected by any water resources issue or intervention. They include organizations, institutions, academia, civil society and individuals. They do not include government organizations. The private sector is addressed separately in the next question, and vulnerable groups are addressed separately in question 2.2c.

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

and regulations for strengthening the mechanisms involving public participation needed to be in place.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
d. Private sector¹⁷ 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: Mechanisms¹⁸ are established, and regularly used, and rooted in the transparent and accountable involvement and partnership of the private sector.	Representation: Effective private sector involvement in water resources development, management and use is established in a transparent way and with proper accountability mechanisms ¹⁹ in place.
Score	60					
<p>Status and progress: The two national water weeks organized during the currency of the reporting period provided an avenue and platform for private sector to showcase their capacity to collaborate with public organizations and other stakeholders for strengthening IWRM activities in the country. Number of private sector firms showcased their products and tools that aid achieving sustainable water resources development and management. Some of the private entities collaborating with PCRWR are (1) Sawaie Agro Eco System services, private sector extension services; 2) Buraq Integrated Solutions, telemetry systems, Automatic Weather Stations, Early warning systems; & 3) Golden Pump, (Pvt) Ltd. Sumersible pumps, ground water turbines, Solar DC pumps</p> <p>Way forward: Develop mechanism to actively collaborate with the private sector organizations. This may include facilitating establishment of consortium of private sector organizations representing consulting firms, ecotourism firms, firms that manufacture water related equipment such as flow measurement devices, water and wastewater treatment units etc., and other firms that may show interest.</p>						

¹⁷ Private sector includes for-profit businesses and groups. Private sector actors may include water users (from across sectors, e.g. agriculture, food and beverage, energy, manufacturing, mining, etc.); water and sanitation service operators; water-related technology providers; and the financial providers participating through investments in water initiatives (definition adapted from [Sustainable Water Partnership \(2017\)](#)). It does not include government, civil society or public academic institutions. While this question is mainly focused at the national level, please respond at the level that is most relevant in the country context. Please explain this, including differences between implementation at different levels, in the 'Status and progress field.

¹⁸ Mechanisms can include policies, laws, strategies, plans, or other formal operational procedures for private sector participation.

¹⁹ See description of "accountability mechanisms" in Annex A: Glossary

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
e. Developing IWRM capacity. ²⁰	No capacity development specific to water resources management.	Occasional water resources management capacity development, generally limited to short-term / ad-hoc activities.	Some long-term capacity development initiatives on IWRM are being implemented, but geographic and stakeholder coverage is limited .	Long-term capacity development initiatives on IWRM are being implemented, and geographic and stakeholder coverage is adequate .	Long-term capacity development initiatives on IWRM are being implemented, with effective outcomes, and geographic and stakeholder coverage is very good .	Long-term capacity development initiatives on IWRM are being implemented with highly effective outcomes, and geographic and stakeholder coverage is excellent .
Score	60					
<p>Status and progress: During the currency of the reporting period, some significant capacity building initiatives have been taken by the government. Most prominent of those is the automation of decision-making by IRSA on distribution of water. With adoption of WAA tool developed by CSIRO, IRSA's capacity to make informed decisions have been significantly improved. Equitable distribution of water among stakeholders is key to successful implementation of IWRM. Therefore, this step significantly improves the national capacity in implementing IWRM.</p> <p>Other initiatives as outlined in few of the above survey questions also indicate that at the national level long-term capacity of the government organizations has been improved. For example, MoU with Hungarian and Chinese governments, capacity building of farmers through crop water requirement app, and partnership with Center of Excellence in Water Resources and US-Pakistan Center for Advance Studies in Water at Mehran University of Engineering and Technology to train government professionals from the four provinces.</p>						
<p>Climate change considerations: MOCC & EC also took initiatives in the right direction by establishing a Water, Sanitation and Hygiene Cell, climate dashboard to monitor climate variability and related activities, and a Management Information System (MIS) to collect, analyze and share data on parameters including water quality. Moreover, MoCC & EC is running outreach programmes for the capacity building of communities to adapt to climate change. Capacity building of the vulnerable communities/ farmers is being done under various programs/ projects which have different timelines. PCRWR, MoWR is currently providing irrigation advisory services to 100.000 farmers in the country.</p>						
<p>Way forward: Continuously monitor the effectiveness of these and new initiatives to ascertain that they are making positive difference in efforts to reach implementation status of IWRM. More initiatives to be introduced in collaboration with private sector, academia, and development sector.</p>						

²⁰ IWRM capacity development: refers to the enhancement of skills, instruments, resources and incentives for people and institutions at all levels, to improve IWRM implementation. Capacity needs assessments are essential for effective and cost-effective capacity development. Capacity development programmes should consider gender balance and disadvantaged/minority groups in terms of participation and awareness. Capacity development is relevant for many groups, including: local and central government, water professionals in all areas - both public and private water organisations, civil society, and in regulatory organisations. In this instance, capacity development may also include primary, secondary and tertiary education, and academic research concerning IWRM.

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2.2 What is the status of institutions for IWRM implementation at other levels?						
	Degree of implementation (0 – 100)					
	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
a. Basin/aquifer level²¹ organizations²² 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 ²³ 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						
70						
Status and progress: MOWR and its attached departments are responsible for IWRM implementation in the Indus basin which covers most of the area of Pakistan. Other small river basins do not necessarily have organizations; therefore, they are looked after by MOWR and/or provincial irrigation departments. Aquifer level organizations are not present in the country and any groundwater related activities are taken care by WAPDA or irrigation departments. Small dam organization looks after the construction and operation of small dams in different parts of the country. Numerous development sector organizations including UNFAO and IWMI are working on climate smart water management in different agricultural landscapes of the country.						
Way forward: Establishment of groundwater authority as envisaged in the NWP is essential to implement IWRM in true letter and spirit.						

²¹ At the basin/aquifer level, please include only the most important river basins, lake basins and aquifers for water supply or for other reasons. These basins/aquifers likely cross-administrative borders, including state/provincial borders for federal countries. The basins may also cross national borders, but this question refers to management of the portions of basins within each country. Question 2.2e refers specifically to transboundary management of basins/aquifers shared by countries.

²² Could be organization, committee, inter-ministerial mechanism or other means of collaboration for managing water resources at the basin level.

²³ For the definition of 'capacity' in this context, see footnote 13. Beyond having the capacity, authorities must also actually be leading the implementation of these activities.

b. Public participation²⁴ in water resources policy, planning and management at the local level. ²⁵	No information shared between government and the public on policy, planning and management at the local level.	Information on water resources, policy, planning and management is made available to the public at the local level.	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: Mechanisms²⁶ established, and regularly used, for the public at the local level 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	70					
<p>Status and progress: Community participation during implementation of GLOF project by UNDP in collaboration with MOCC was ensured. 10 million population benefitted with the early warning initiative in GLOF. Community was at the heart of the design of the dissemination procedure and therefore the activity created large impact.</p> <p>After COP-27, 83 irrigation channels approved in the Gilgit-Baltistan region out of which 24 channels are designed and will be operated on community-based experiences. Local disaster risk reduction committees have been established to effectively reduce and manage impacts for disasters including floods, droughts and other water related disasters. MOCC's living Indus initiative planned 25 interventions using input from the public. These interventions are resulting in dolphins to come back in the river Indus. Development of fishery industry as result of initiatives based on community input.</p> <p>Area Water Partnerships (AWPs) established by Pakistan Water Partnership (PWP) solely relies on the mechanisms that encourages collaboration of local community with other stakeholders to develop and manage local water resources. AWP's are present across the country even in the remotest areas of Thar and Cholistan deserts. AWP's are entirely composed of local representatives who identify needs of their population and suggest solutions that are then implemented by PWP with the help of donations and volunteer work. In addition, PWP arranges lectures of IWRM and related topics in universities across Pakistan specifically in the less privileged regions of the country.</p> <p>Water User Associations (WUAs) in some areas of Punjab and Farmer Organizations (FOs) in some areas of Sindh are established by the provincial irrigation and agriculture departments to empower the farmers to manage their irrigation water through participatory approaches.</p> <p>Climate journalism is being improved in the country and the journalist community has been taking active role and participation in spreading awareness on climate change, water resources management, ecology, and biodiversity. Number of other community-based initiatives are in progress e.g., solar pumping system shared by 3-5 families in 13 districts of Punjab, national watercourse improvement programme, community protection schemes by Pakistan Poverty Alleviation Fund from USD 220 million provided by National Disaster Risk Management Fund. All these initiatives are duly designed in collaboration with the local communities to identify their needs and capacity to adapt to different solutions.</p>						

²⁴ '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.

²⁵ Examples of 'local level' include municipal level (e.g. cities, towns and villages), community level, basin/tributary/aquifer/delta level, and water user associations.

²⁶ Mechanisms can include policies, laws, strategies, plans, or other formal operational procedures for public participation.

Way forward: Initiatives like AWP, WUAs, and FOs needed to be replicated across the country under the joint supervision of public, civil and development sectors. Mechanisms for collaboration needed to be strengthened with clear roles, responsibilities, and accountability.

		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
c. Participation of vulnerable groups in water resources planning and management. ²⁷		Participation of vulnerable groups not explicitly addressed in laws, policies, or plans.	Vulnerable groups partially addressed , but no explicit procedures in place. ²⁸	Some procedures in place , but limited budget and human capacity for implementation.	Transparent 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 through accountability mechanisms ²⁹).	Meaningful³⁰ and regular participation of vulnerable groups, as appropriate, and participation is monitored through accountability mechanisms.
Score	70						
Status and progress: Active participation of vulnerable groups in design and implementation of GLOF project activities implemented by UNDP in collaboration with MOCC. Gender and Child Cell of National Disaster Management Authority (NDMA) plays active role in ensuring participation of women and children who are one of the most vulnerable groups during an emergency in planning relief and rehabilitation work. Resilient Recovery, Rehabilitation and Reconstruction Framework (4RF) document for Pakistan has been designed keeping in view the challenges faced by the vulnerable groups. It was finalized in 2022 and presented in the International Climate Conference co-hosted by the UN & Government of Pakistan in Geneva in January 2023. Therefore, the Planning Commission of Pakistan has notified to include participation of vulnerable works in all climate change related funds and projects. Most importantly over the reporting period, through inclusion of vulnerable groups, Pakistan was able to secure funding of USD 150 million each from Asian Development Bank, and a funding of USD 253 million from Islamic Development Bank. Establishment of loss & damage fund in wake of devastating 2022 floods in parts of the country is a result of integration of vulnerable groups establishing case for climate justice.							
Way forward: Capacity building of vulnerable groups to enhance awareness about IWRM implementation specifically in the context of climate change through outreach programmes and encouraging participation in planning processes.							

²⁷ Vulnerable groups: groups of people that face economic, political, or social exclusion or marginalisation. They can include, but are not limited to: indigenous groups, ethnic minorities, migrants (refugees, internally displaced people, asylum seekers), remote communities, subsistence farmers, people living in poverty, people living in slums and informal settlements. Also referred to as ‘marginalised’ or ‘disadvantaged’ groups. While women are often included in definitions of ‘vulnerable groups’, in this survey gender issues are addressed separately in question 2.2d. The score given for this question should reflect the situation for the majority of the vulnerable groups. This question has been added since the baseline to capture an element of stakeholder participation which is important in the context of ‘leave no-one behind’ – one of the key principles of Agenda 2030.

²⁸ ‘Procedures’ can include operational processes to, for example, raise awareness, reduce language barriers, and facilitate interaction with specific vulnerable groups.

²⁹ See description of “accountability mechanisms” in Annex A: Glossary

³⁰ ‘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 mainstreaming in water resources management. ³¹	No gender mainstreaming in water resources management.	Gender mainstreaming mechanisms and practices in water resources management being developed	Gender mainstreaming mechanisms exist (but limited implementation, budget or monitoring).	Gender mainstreaming objectives ³² partly achieved (activities implemented and partially monitored and funded).	Gender mainstreaming objectives mostly achieved (activities adequately monitored and funded).	Gender mainstreaming objectives consistently achieved and effectively address gender issues (activities and outcomes reviewed and revised and based on relevant accountability mechanisms ³³).
Score	60					
Status and progress: Gender perspective has been increasingly included in the water resources management. Female are joining water and related disciplines in much larger numbers than ever before. MOWR specifically consulted female and vulnerable groups which may be directly or indirectly affected by the construction of Mohmand and Diamer Basha dams, and implementation of updated NFPP-IV. NDMA pays special attention to widows and orphans during implementation of their rehabilitation projects post disaster. Sindh government implemented a social protection plan for flood affected females during emergency response to 2022 floods.						
Way forward: Gender mainstreaming is critical to water resources management. Therefore, elaborated mechanisms need to be devised to ensure active gender participation in						

³¹ Gender mainstreaming is about fully integrating gender perspectives in water planning, management, and decision-making, in a cross-cutting manner. Gender mainstreaming mechanisms can include frameworks, practices and tools aimed at achieving gender objectives related to women's participation, voice and influence in water resources management. See "Gender mainstreaming" in [Annex A \(Glossary\)](#), which contains links to the [Gender Checklist](#) (to support discussion on this topic), and a report on gender mainstreaming in water resources management. Gender mainstreaming mechanisms may originate within the water sector or at a higher level, but if they are primarily addressed at a higher level, then there should be evidence of gender mainstreaming within the water sector to achieve scores in this question. Any differences between implementation at national, local or transboundary levels can be explained in the 'Status and progress' field.

³² Gender mainstreaming objectives ultimately refer to equal participation and influence in water resources management at all levels. Ways of monitoring this include (please identify any of these or similar in the 'Status and progress' field): 1) Presence of Gender Focal Point responsible for gender policy and gender concerns in authorities that deal with water resources; 2) Gender parity in decision-making processes at all levels (e.g. in meetings or board members/committee members); 3) Presence of gender-specific objectives and commitments in strategies, plans and laws related water policy; 4) Presence and role of local women's groups/organizations receiving technical and/or financial support from government/non-government organizations involved in water resources management activities; 5) Budget allocation, and procedures for collection and analysis of sex-disaggregated data of local populations, when planning for water-related programmes / projects, including infrastructure; 6) Presence of measures for improving gender parity and equity in human resources (HR) policies of authorities. Source: adapted from [UNESCO WWAP Toolkit on Sex-disaggregated Water Data, 2019](#).

³³ See description of "accountability mechanisms" in Annex A: Glossary

IWRM or water resources management in all sectors and at all levels.						
	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
e. Organizational framework for transboundary water management. ³⁴	No organizational framework(s) for transboundary water management.	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	60					
Status and progress: O/o PCIW which oversees the implementation of IBT has been without any permanent Commissioner (i.e., head of the department) for quite a few years. Moreover, the department only studies the ongoing or upcoming projects by Indian government on the river Indus and its tributaries. Role of the department is narrow and limited and therefore, does not really safeguard Pakistan's rights on river Indus as per the IBT. In addition, there is no transboundary agreement between Pakistan and Afghanistan on sharing of the river Kabul.						
Way forward: Capacity building of O/o PCIW to undertake complex tasks related to transboundary water management including climate change impacts, groundwater, and environmental flows. Also, strengthening of department in undertaking legal routes is required.						
f. Sub-national ³⁵ authorities for leading IWRM implementation. ³⁶	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 ³⁷ 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	80					
Status and progress: Provincial irrigation departments and On Farm Water Management (OFWM) wings of provincial agriculture departments undertake the implementation of different IWRM elements as per their mandate. Provincial Environmental Protection Agencies are responsible for interventions to keep water quality in check. Water and Sanitation Agencies (WASAs) and Public Health Departments at district/city levels undertake water treatment and distribution, and wastewater collection, treatment and disposal. Number of WASAs have increased in past few years across the country indicating increased spread of wet utilities. Most of the organizations leading or implementing IWRM plans have dedicated Monitoring and Evaluation (M&E) wings/units that work independently to monitor and report the implementation of IWRM activities. Based on the findings /outcomes and recommendations of the M&E reports, organizations tailor their plans to improve and accelerate IWRM implementation. The executing agencies/ departments in particular the Provincial line departments have their own internal system of M&E besides Consultants are also engaged for mega projects. For federally funded projects, M&E by the federal level						

³⁴ An organizational framework can include a joint body, mechanism, authority, committee, commission or other institutional arrangement. Refers to international basins/aquifers.

³⁵ Sub-national can include, but not limited to: provincial, state, county, local government areas, council. In this case, sub-national should not include basin/aquifer levels as this is dealt with in question 2.2a. Answer this question for the highest sub-national level(s) that are relevant in the country, and specify what these are.

³⁶ 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.

³⁷ For the definition of 'capacity' in this context, see footnote 13. Beyond having the capacity, authorities must also actually be leading the implementation of these activities.

organizations (Planning Commission, FFC-MoWR, Pak Army/NDMA etc.) is also done.

Way forward: Capacity building of these organizations to undertake gap analysis for effective plan revisions. Also, either including groundwater management within the mandate of these organizations or establishment of separate bodies at district and provincial levels.

3 Management instruments

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

Terminology used in the questions:

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

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

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

3. Management Instruments							
		Degree of implementation (0 – 100)					
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
3.1 What is the status of management instruments to support IWRM implementation at the national level?							
a. National monitoring of water availability³⁸ (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	60					
Status and progress: Telemetry system for Indus River System Authority (IRSA) is conceived and work has practically started. In addition to IRSA’s telemetry, work is on progress for monitoring discharges of small rivers across the country. WAPDA has flood telemetry system to support flood forecasting. WAPDA’s SCARP monitoring organization has a network of piezometers to monitor groundwater levels, however, the temporal and spatial coverage is insufficient for management purposes. Work on groundwater monitoring on the other hand has picked up the pace, 1000 piezometers for WAPDA has been approved for revamping groundwater quality project. MOCC’s MIS is functional to monitor water quality.							
Way forward: Every drop of water counts, therefore, monitoring and measuring water is of extreme importance. More measurement programmes need to be placed and capacity building to use remote sensing datasets for monitoring water availability is required.							

³⁸ See definition of monitoring in Terminology at the beginning of section 3.

b. Sustainable and efficient water use management ³⁹ 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	50				
Status and progress: In IRSA's distribution setup, reservoirs work as an integrated system whose management has seen improvement by using WAA tool. This tool has been effective in consensus building among provinces on water distribution which in turn defines how each province allocates water among different sectors and users. In addition, high efficiency irrigation systems and responsive drip irrigation use has risen over the last few years. Groundwater extraction and recharge management still need to go long way to make any significant impact on efficient water use.						
Way forward: Agriculture sector at uses more than 90% of the country's water requires modernizations. For example, involvement and subsidies to private sector required for introduction of high efficiency irrigation systems across the country. Dry crop varieties need to be introduced. Building capacity to adapt climate resilient agriculture and water management practices.						

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
c. Pollution control ⁴⁰ 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	30					

³⁹ Management instruments include demand management measures (e.g. technical measures, financial incentives, education and awareness raising to reduce water use and/or improve water-use efficiency, conservation, recycling and re-use), monitoring water use (including the ability to disaggregate by sector), mechanisms for allocating water between sectors (including environmental considerations). Coordination with SDG indicator 6.4.1 Focal Point and results is encouraged when answering this question.

⁴⁰ Includes regulations, water quality guidelines, water quality monitoring, economic tools (e.g. taxes and fees), water quality trading programmes, education, consideration of point and non-point (e.g. agricultural) pollution sources, construction and operation of wastewater treatment plants, watershed management. Coordination with SDG indicator 6.3.2 Focal Point and results is encouraged when answering this question.

<p>Status and progress: MOCC is implementing a labs capacity building programme wherein more than 100 labs in Punjab and Sindh province have been established or revitalized. 3 months training programme conducted to train staff to run these labs. Training of local staff to start soon under the same programme. TURF scheme by State Bank of Pakistan during COVID caused boom in textile industry, however, that meant degrading water quality if appropriate treatment facilities not kept in place.</p> <p>Way forward: Introduction of blue line technology for sewage line monitoring to detect leakages and safeguard freshwater from polluting. Strong policies in place for industries, other sectors and upper riparian to ensure clean water delivery for other sectors and downstream users.</p>						
<p>d. Management of water-related ecosystems and biodiversity⁴¹ from the national level.</p>	<p>No management instruments being implemented.</p>	<p>Use of management instruments is limited and only through short-term / ad-hoc projects or similar.</p>	<p>Some management instruments implemented on a more long-term basis, but with limited coverage across different ecosystem types and the country.</p>	<p>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.</p>	<p>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.</p>	<p>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.</p>
Score	40					
<p>Status and progress: Number of initiatives are there to be completed in a time span of next 7-8 years improve water-related ecosystem health and biodiversity. For example, recently (2023) WWF received approval of recharge Pakistan project to develop / restore wetlands along river Indus to mitigate flooding and recharge groundwater. In addition, wetlands will contribute to improved ecosystem and biodiversity of river Indus and related systems. Furthermore, MOCC & EC and UNDP has introduced Living Indus Initiative, which in addition to other interventions, specifically aimed improving biodiversity and ecology of river Indus. GLOF project another collaborative effort to MOCC and UNDP is looking after the biodiversity of upper Indus basin. Restoring and establishment of National Parks are also underway.</p>						
<p>Way forward: Work required to define environmental flows. Enforcement of laws and regulations to ensure clean water discharge from upstream users to downstream users. All water resources interventions to include impact analysis on ecosystems and provide recommendations.</p>						

⁴¹ Water-related ecosystems include rivers, lakes and aquifers, as well as wetlands, forests and mountains. Management of these systems includes tools such as management plans, the assessment of Environmental Water Requirements (EWR), and protection of areas and species, to ensure ecosystem functions and services. Monitoring includes measuring extent and quality of the ecosystems over time. Consider coordination with SDG indicator 6.6.1 Focal Point and results, as well as with the post-2020 Global Biodiversity Framework (under the Convention on Biological Diversity), when answering this question.

	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 disasters⁴² from 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 of at-risk areas and groups.	Management instruments are implemented on a long-term basis, with very good coverage of at-risk areas and groups, and are effective .	Management instruments are implemented on a long-term basis, with excellent coverage of at-risk areas and groups, and are highly effective .
Score	80					
<p>Status and progress: Over the currency of the reporting period, number of long-term interventions have been initiated to manage water-related disasters. Flood Forecasting Division of PMD has planned to establish its regional centres in all the 4 provinces AJ&K and Gilgit-Baltistan region (Activity planned for completion in next 5 years). With the establishment of these regional centres, the capacity of federal and provincial authorities to reduce flood related disaster risks will be increased manifold. These centres will generate more localized flood forecasts and disseminate them to relevant stakeholders for actions. Mobile radar technology planned to improve monitoring and nowcast of localized flash flood events, will be beneficial in disaster risk reduction in critical areas. With the funding of the World Bank Group, PMD is installing 450 Automatic Weather Stations across the country. Additionally, under NFPP-IV 252 weather and 457 flood telemetry stations will be installed to improve flood monitoring and forecasting. NFPP-IV also includes improving design criteria and basing them on nature-based solutions to mitigate flood impacts. With support from JICA, embankment assessment program has been initiated. In the meanwhile, efforts have been started to upgrade WAPDA's surface hydrology program and Glacier Monitoring & Research Center.</p> <p>PMD is in process of procuring system to improve monitoring & modelling of upper atmosphere processes. This will significantly enhance the PMD's capability to forecast the atmospheric conditions that may lead to development of extreme events such as drought and floods. Installation of 3 new radars that have the capability to monitor rainfall over large spatial domains has also improved disaster risk reduction and management. One the radars that is installed in the coastal and most populous city has a capacity to track cyclone (such as Biper Joy that recently generated in Arabian Sea) movements with a lead time of 48 hours. Food and Agriculture Organization of UN is developing Anticipatory Action Protocols for floods and droughts in few districts of Sindh province in bid to enhance disaster risk management capacity. It is planned to replicate these efforts across the country.</p> <p>Climate change considerations: All the above-mentioned interventions directly contribute to providing information and data that are important to understand the pathways by which climate change impacts the occurrence, severity, and frequency of the water-related disasters. GLOF project is also building the capacity of stakeholders including local communities to identify risks associated with formation and outburst of glacial lakes with specific emphasis on climate change impacts on GLOFs.</p> <p>Way forward: With the increasing severity and frequency of disasters due to climate change, there is a dire need of developing protocols and regulations to improve disaster risk reduction and management. More efforts are required on war footing to identify potential disasters and multi-hazard risks associated with them. Collaboration within different government departments, development sector, NGOs, and communities have to be developed.</p>						

⁴² 'Management instruments' can cover: understanding disaster risk; strengthening disaster risk governance; investing in disaster risk reduction; and enhancing disaster preparedness. 'Impacts' include social impacts (such as deaths, missing persons, and number of people affected) and economic impacts (such as economic losses in relation to GDP). 'Water-related disasters' include disasters that can be classified under the following: Hydrological (flood, landslide, wave action); Meteorological (convective storm, extratropical storm, extreme temperature, fog, tropical cyclone); Climatological (drought, glacial lake outburst, wildfire); and severe pollution events. Coordination with SDG indicator 11.5.1 Focal Point and results is encouraged when answering this question.

3.2 What is the status of management instruments to support IWRM implementation at other levels?							
		Degree of implementation (0 – 100)					
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
a. Basin management instruments. ⁴³		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	70						
Status and progress: Given that Indus Basin covers most of the Pakistan area’s most of the management instruments mentioned in responses to survey questions in section 3.1 are relevant here. In addition to those, under Sindh Barrages Improvement Project, government of Sindh has taken many interventions including flood routing. Similar initiatives have been carried out by the government of Punjab such as flood routing models and hill torrents forecast. Furthermore, many projects are in pipeline to improve management of river Indus and its waters.							
WAA tool of IRSA is also a good addition to management tools. This tool has significantly improved IRSA’s capacity to fairly allocate water among provinces.							
Way forward: Tools and instruments to support integration of basin and aquifer management and estimate environmental flows. Adoption of remote sensing and geospatial applications for basin management.							
b. Aquifer management instruments. ⁴⁴		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						
Status and progress: Instruments for aquifer management are less in number and have limited geographic coverage. Groundwater monitoring network is insufficient temporally and							

⁴³ Basin and aquifer management: involves managing water at the appropriate hydrological scale, using the surface water basin or aquifer as the unit of management. This may involve basin and aquifer development, use and protection plans. It should also promote multi-level cooperation, and address potential conflict among users, stakeholders and levels of government. To achieve 'Very high (100)' basin and aquifer management scores, surface and groundwater management should be integrated.

⁴⁴ See previous footnote on basin management instruments, which also applies to aquifers.

spatially. Laws to control groundwater extraction or use are not widespread. However, some finances and efforts have been recently put in to improve aquifer management that includes approval to WAPDA to install 1000 piezometers across the country.

Way forward: This aspect of IWRM needs urgent attention at all levels. Groundwater monitoring network needed to be expanded and controls on groundwater use need to be established through laws and regulations. Furthermore, best management practices needed to be studied in context of climate change with focus on conjunctive surface water and groundwater use.

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
c. Data and information sharing within countries at all levels. ⁴⁵	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. Appropriate measures are in place to ensure data integrity ⁴⁶ .
Score	70					

Status and progress: Provision of data and information sharing arrangements have been core over the reporting period (2020-2023). This aspect of IWRM implementation is improving day by day as more and more arrangements have been conceived and implemented. With the introduction of WAA tool to IRSA's capacity, data sharing among provinces and federal departments. IRSA's telemetry system has been conceived, that would enable federal as well as provincial departments to access near real-time flow situation in major reservoirs and canals. PMD's agromet bulletins are accessible online. MOCC & EC has developed MIS portal and climate change dashboard those are accessible by all stakeholders including public. WAPDA's flood telemetry and that envisaged in NFPP-IV is accessible by relevant federal and provincial departments including National Disaster Management Authority, Provincial Disaster Management Authorities, Federal Flood Commission, PMD, and IRSA.

Other stakeholders such as development sector organizations are also working on data and information sharing through online portals, Apps, and text services. For example, Food and Agriculture Organization is working on development of a portal to collect, analyze, and disseminate agriculture, climate, and water information.

Way forward: Establishment and enforcement of laws and regulations to share data, ensure data integrity, and to discourage misuse of data. More funding need to be allocated for data sharing arrangement.

⁴⁵ Includes more formal data and information sharing arrangements between users, as well as accessibility for the general public, where appropriate.

⁴⁶ Data integrity is the maintenance of, and the assurance of, data accuracy and consistency over its entire life-cycle.

d. Transboundary data and information sharing <u>between</u> 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 . ⁴⁷	All relevant data and information are online and accessible between countries.
Score	50					
Status and progress: IBT explicitly covers data sharing arrangements between Pakistan and India. However, due to fragile relationship between the two countries, the arrangement is not fully implemented. As a result, data sharing suffers gaps. Data sharing has been restarted just at the start of year 2023.						
Way forward: Pakistan needs to develop own capacity to collect and analyze transboundary data using remote sensing products and geospatial applications.						

⁴⁷ E.g. institutional and technical mechanisms in place that allow for exchanging data as agreed upon in agreements between riparians (e.g. regional database or information exchange platform with a river basin organization including technical requirements for data submission, institutionalized mechanisms for QA and for analysing the data, etc.).

4 Financing

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

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

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

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

4. Financing						
	Degree of implementation (0 – 100)					
	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
4.1 What is the status of financing for water resources development and management at the national level?						
a. National budget ⁴⁸ for water resources infrastructure ⁴⁹ (investment 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. Accountability mechanism(s) ⁵⁰ in place.	Budget fully utilised for investment and recurrent costs, post-project evaluation carried out, budgets reviewed and revised. Accountability mechanisms are effective.
Score	70					
<p>Status and progress: Position of funds for water resources infrastructure is better from the previous reporting period. 2 major reservoirs are being built indicating funds being utilized. The national annual budget allocation for IWRM and water resources development increased from 3.4% to 16% of Public Sector Development Projects programme over the reporting period (2018-2023). More importantly, the supreme court of Pakistan collected PKR 10 billion through crowd funding to support construction of large reservoirs. This shows commitment of the government and public to water resources development as there is an increased awareness on water crisis in the face of climate change and population growth.</p> <p>Some of the non-schedule banks are also providing easy loans at a mark-up rate of 7% for water resources development. Moreover, amount of foreign funding through grants and loans increased during the reporting period.</p> <p>Way forward: Government to explore more avenues for securing funds for water resources development. Enhance institutional capacity to disburse funds effectively to ensure timely completion of the targets. Encourage water resources development through public-private partnership schemes to increase fund generation.</p>						

⁴⁸ Allocations of funding for water resources may be included in several budget categories or in different investment documents. Respondents are thus encouraged to examine different sources for this information. When assessing the allocations respondents should take account of funds from government budgets and any co-funding (loans or grants) from other sources such as banks or donors.

⁴⁹ Infrastructure includes 'hard' structures such as dams, canals, irrigation schemes, flood control, stormwater drainage etc., as well as 'soft' or 'green' infrastructure and environmental measures such as catchment management, sustainable drainage systems etc. The focus should be on infrastructure related to 'broader' water resources management, as opposed to infrastructure for drinking water supply or sanitation services (WaSH) (noting that WaSH financing is covered in the [GLAAS surveys](#)). Any differences in budget between water resources and WaSH infrastructure should be explained in the 'status and progress' field. Budgets should cover initial investments and recurrent costs of operation and maintenance.

⁵⁰ See description of "accountability mechanisms" in Annex A: Glossary

		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
b. National budget for IWRM elements ⁵¹ (investments and recurrent costs).		No budget allocations made for investments and recurrent costs of the IWRM elements.	Allocations made for some of the IWRM elements and implementation at an early stage.	Allocations made for at least half of the IWRM elements but insufficient for others.	Allocations for most of the IWRM elements and some implementation under way.	Allocations include all IWRM elements and implementation regularly carried out (investments and recurrent costs). Accountability mechanism(s) in place.	Planned budget allocations for all elements of the IWRM approach fully utilised , budgets reviewed and revised. Accountability mechanisms are effective.
Score	60						
Status and progress: The executing agencies are responsible for operation and maintenance of developments projects once completed. As per prevailing practice, 2% of project cost (Civil works) is kept for O&M activities.							
Climate change considerations: Recently approved NAP has budgeted activities related to IWRM implementation in context of climate change. Moreover, MOCC has budgeted WASH activities.							
Way forward: Exclusive funds for development and implementation of groundwater management and environmental flow need to be established.							

4.2 What is the status of financing for water resources development and management at other levels?						
	Degree of implementation (0 – 100)					
	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
a. Sub-national or basin budgets for water resources infrastructure ⁵² (investment and recurrent costs).	No budget allocated in sub-national or basin investment plans.	Some budget allocated in sub-national or basin investment plans but only partly covers planned investments.	Sufficient budget allocated for planned investments in sub-national or basin investment plans, but insufficient funds	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. Accountability

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

⁵² Refer to footnotes 47 and 48, from question 4.1a.

Score	60			disbursed or made available.		Accountability mechanism(s) in place.	mechanisms are effective.
<p>Status and progress: WAPDA, IRSA and FFC are the basin-level organizations. Sufficient funding has been allocated for some of the planned projects through public sector development programme.</p> <p>Due to flooding in 2022, most of the provincial budgets for infrastructure diverted to flood relief works.</p>							
<p>Way forward: Budget allocations for climate resilient designing, rehabilitation, and operation of water resources infrastructure.</p>							
b. Revenues raised for IWRM elements. ⁵³		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. Accountability mechanism(s) in place.	Revenues raised fully cover costs of IWRM activities. Accountability mechanisms are effective.
Score	60						
<p>Status and progress: IRSA collects water cess (i.e., amount charged for services) in lieu of the services provided to provinces and WAPDA. The collected amount moves to authority fund. IRSA is sponsoring 25% of the cost of its envisaged telemetry system through these funds. Sindh Irrigation and Drainage Authority manages 3 canals and collects service fee from the water users. It is required to approach the authority to ascertain amount of cost recovered from the collected fees. Similarly, Punjab Irrigation Department collects fee, however, the revenue generated does not cover the departmental expenses. Punjab province unlike other provinces has vast network of rivers and associated irrigation network hence running cost/O&M budget of Punjab Irrigation Department is considerably higher than the revenue it collects.</p>							
<p>Way forward: Revision of the service fee in line with the expenses incurred and to support implementation of IWRM elements. Mechanism need to be in place to share revenue and expenses data with the MOWR and national focal person of SDG 6.5.1.</p>							

⁵³ For 'IWRM elements', see above footnote. **Level:** revenues are likely to be raised from users at the local, basin, or aquifer levels, though may also be raised at other sub-national or national levels (please indicate which level(s) in the status and progress field). **Revenue raising** can occur through public authorities or private sector, e.g. through fees, charges, levies, taxes and 'blended financing' approaches. E.g. dedicated charges/levies on water users (including household level *if* revenues are spent on IWRM elements); abstraction & bulk water charges; discharge fees; environmental fees such as pollution charges, Payment for Ecosystem Services (PES) schemes; and the sale of secondary products and services.

		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
c. Financing for transboundary cooperation. ⁵⁴		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	20						
Status and progress: Insufficient funds for the Office of Pakistan Commissioner for Indus Waters (that looks after the implementation of IBT) to run its day-to-day tasks. Funds are entirely provided by the government of Pakistan. No progress in the funding status since last reporting period.							
Way forward: The office may be re-vitalized as transboundary water management body which may be driven by research. Therefore, the government needs to ensure sufficient funds for the office, data collection and analysis, legal cases in the international court, and other affairs. This is critical to look after this funding issue urgently to safeguard Pakistan's interest.							
d. Sub-national or basin budgets for IWRM elements ⁵⁵ (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 IWRM elements at sub-national or basin level and implementation at an early stage.	Allocations made for at least half of the IWRM elements at sub-national or basin level but insufficient for others.	Allocations for most of the IWRM elements at sub-national or basin level and some implementation under way.	Allocations include all IWRM elements and implementation regularly carried out (investments and recurrent costs). Accountability mechanism(s) in place.	Planned budget allocations for all elements of the IWRM approach at sub-national or basin level fully utilised , budgets reviewed and revised. Accountability mechanisms are effective.
Score	60						
Status and progress: Same as 4.1a and 4.2a. for basin-level budgets.							
Way forward: Same as 4.1a and 4.2a.							

⁵⁴ In this question "Member States (MS)" refers to riparian countries that are parties to the arrangement. "Contributions" refers to the annual share of funds agreed from MS national budgets to support the agreed TB cooperation arrangement. Regular funds obtained from for example, water user fees (e.g. hydropower charges) and polluter-pays fees based on existing regulation are also considered as sustainable funding. As variable and unsustainable, donor support should not be considered in the scoring, but may be referred to in the 'Status and progress' and 'Way forward' fields.

⁵⁵ 'IWRM elements' refers to all the activities described in sections 1, 2 and 3 of this survey that require funding, e.g. policy, law making and planning, institutional strengthening, coordination, stakeholder participation, capacity development, and management instruments such as research and studies, gender and environmental assessments, data collection, monitoring etc. This question has been added since the baseline survey, acknowledging the importance of funding being available at more 'operational' levels.

6 Indicator 6.5.1 score

How to calculate the indicator 6.5.1 score

Please complete the table below as follows:

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

Section	Average Scores (all values rounded to nearest whole number)
Section 1 Enabling environment	76
Section 2 Institutions and participation	67
Section 3 Management instruments	54
Section 4 Financing	55
Indicator 6.5.1 score = Degree of IWRM* implementation (0-100)*	63

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

Interpretation of the score

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

Quick QA checklist for the Focal Point

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

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

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

Annexes:

Annex A: Glossary

- **Accountability mechanisms:** provide ways for all partners to hold each other to account on the specific, measurable, time-bound actions they have committed to. In the context of this survey, they may include activities that increase [Transparency, Accountability, and Participation, and strengthen Anti-corruption \(TAP-A\)](#). Together, these form a framework for integrity.⁵⁶ For example, in relation to the financing questions in section 4, ‘accountability mechanisms’ typically include mechanisms that make data and information on budgets and expenditures publicly available, and enable participatory budgeting and monitoring of expenditure where appropriate. Such mechanisms should include functions to identify and address corruption and mismanagement.
- **Authorities:** could be ministry or ministries, or other organizations/institutions/departments/agencies/bodies with a mandate and funding from government.
- **Basins:** Includes rivers, lakes and aquifers, unless otherwise specified. For surface water, the term is interchangeable with ‘catchments’ and ‘watersheds’.
- **Federal countries:** Refers to countries made up of federated states, provinces, territories or similar terms.
- **Gender mainstreaming:** Gender mainstreaming is about fully integrating gender perspectives in water planning, management, and decision-making, in a cross-cutting manner. It is not just about increasing women’s representation on committees, or having a general national legal framework on gender equality, although those actions may be part of the overall framework. The dedicated [Gender Checklist](#) can be used as a discussion tool to help stakeholders to agree on the score for question 2.2d, and to inform the ‘status and progress’ and ‘way forward’ responses to that question. The Gender Checklist is derived from the report - [Advancing towards gender mainstreaming in water resources management](#) – which presents examples of some specific mechanisms, practices, and tools that have been developed and used by countries in order to progress with gender mainstreaming in water resources management. These have been grouped into six categories: (1) advocacy, high-level commitment, changing prevailing norms and stereotypes; (2) legislative and policy framework and governance; (3) human capital, financial resources, institutions, and support organisations; (4) women’s participation and parity; (5) monitoring activities to track and assess progress; (6) awareness raising, capacity development, and education.⁵⁷
- **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:

⁵⁶ Source: Water Integrity Network: Integrity Walls. <https://www.waterintegritynetwork.net/integrity-walls-tap/>

⁵⁷ Mainstreaming gender in resources management supports a range of targets in the SDGs, including under Goal 5 on achieving gender equality and empowering all women and girls (e.g. [SDG Target 5.5](#)). Furthermore, question 2.2d also addresses the call for gender disaggregated data in the 2030 Agenda (e.g. [SDG Target 17.18](#)).

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

Annex B: Key priorities and targets for IWRM implementation

- 1) What are the **priority action areas**⁵⁸ to advance IWRM implementation overall in the country? Include priorities/actions that are ongoing, already planned, and/or those that may be emerging based on the survey results. Where relevant, please also note the status of implementation of the priorities/actions (e.g. giving some indication of necessary follow-up).

Answer: To accelerate the IWRM implementation, the participants of the workshop agreed to the following priority action areas:

- Establishment of groundwater laws, policies, authority, and management plans to ensure sustainability of groundwater resources.
- Establishment of environmental flow laws, policies, and management plans to protect water-related ecosystems.
- Strengthening laws and policies to ensure clean water supply from upstream users to downstream users.
- In the wake of 2022 floods, climate change aspects need to be considered in all IWRM activities to make water sector climate resilient.
- Capacity building at each level for every stakeholder to improve water monitoring, modeling, and management.
- Encourage participatory approaches for IWRM implementation by increasing collaboration with public, vulnerable groups, private sector, civil sector, and academia.

2) **Target setting**

The intention of the table below is to encourage discussion among stakeholders on the likelihood of reaching the global targets⁵⁹, or on the need to establish national targets. It can also be used to inform regional and global processes about whether countries feel they are on track to meet the global targets or not, and if they prefer to set national targets.

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

⁵⁸ Priority action areas: could include any of the aspects covered in this survey, or others. E.g. improving cross-sectoral coordination; raising the profile of the importance of IWRM implementation at the highest planning and financing levels (advocacy); developing or implementing laws, strategies, plans, programmes, projects; improving revenue raising; improving monitoring and evaluation of implementation; increasing institutional capacity at national/basin/aquifer level; improving transboundary cooperation, etc.

⁵⁹ Average scores of 91 or above ('very high' category), for each of the four dimensions and the overall indicator score.

Section	Business-As-Usual (BAU) projected score for 2030*	National target for 2030**
Section 1 Enabling environment	40	80 (maintain the current status)
Section 2 Institutions and participation	70	80
Section 3 Management instruments	70	80
Section 4 Financing	70	80
Indicator 6.5.1 score = Degree of IWRM implementation (0-100)	63	80

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

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

3) Additional comments on target-setting:

Answer: Business-As-Usual (BAU) projection is based on the 3 reporting rounds and the socio-political condition of the country. Enabling environment has been projected to decrease due to unstable condition of the country. Country is facing political crisis and conditions of uncertainty is prevailing. Therefore, the participants agreed to lower the score. However, with an optimistic approach (when certain measures are placed) suggested to maintain current scoring as national target.

As far as Institutions and participation is concerned, the national focal person informed that the interim government is committed to introduce mechanism to strengthen institutional capacity across sectors. However, in the wake of current political situation, the participants suggested to keep BAU projected score similar to the 3rd reporting period's score. For national target, they suggested to slightly increase the implementation status.

For management instruments and financing, BAU scores of 70 was projected. These are based on the scores from 3 reporting periods. As national targets, participants suggested to keep score as 80. Targets were set to motivate the government and stakeholder to push work on these dimensions to accelerate IWRM implementation.

- 4) **Additional general comments** (e.g. related to the: status/challenges of IWRM implementation; country context; threats to water resources; impacts of climate change, or other):
Answer: Participants identified that deteriorating groundwater and surface water storage conditions, climate change, and frequent disasters are major threats to water resources and challenges to IWRM implementation.

Furthermore, they insisted that water is a highly technical subject that need to be dealt by technical people at all levels including policy makers. Continuation of policies is critical to the successful implementation of IWRM and water resources development plans. Therefore, political instability and changing leadership forces to take a new start that undermines the previous achievements.

Annex C: 6.5.1 country reporting process form

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

Focal Point affiliation	Chairman Federal Flood Commission / Chief Engineering Adviser, Ministry of Water Resources
<p>Brief process overview:</p> <p>National Focal Point for Indicator 6.5.1 initiated the process of reporting on SDG Indicator 6.5.1 in June 2023. Communications (emails and postal mails) were sent to different federal and provincial organizations dealing with water resources policy, planning, development and management, civil society organizations, NGOs, academic institutes, developmental sector organizations and other stakeholders to fill online questionnaire through UNEP-DHI's IWRM portal. The deadline was to submit the questionnaire was July 31, 2023, which was extended to August 15, 2023. Following this, the National Focal Point jointly with Pakistan Water Partnership (PWP) organized a multi-stakeholder workshop on Monday, August 21, 2023. The workshop was funded by UNEP-DHI Center on Water and Environment through Global Water Partnership. The workshop was attended by diverse stakeholders including federal and provincial government representatives from different departments, academia personnel, media personnel, grass root level people working on water issues, developmental sector experts, private sector experts and civil society/NGOs personnel. PWP hired the same water sector expert as facilitator who facilitated the 2nd round of reporting in 2020. One the conclusion of the workshop, the facilitator completed the survey questionnaire as per the agreed scoring and discussions that took place in the workshop and prepared a draft workshop report. The completed survey and report was submitted to the National Focal Point for SDG Indicator 6.5.1 through PWP. The Focal Point finalized the survey and report and submitted them to UNEP-DHI. See Pakistan's 2023 SDG 6.5.1 Stakeholder Consultation Report for further information.</p> <p>Any main points of difference in stakeholder opinion in answering the survey questions?:</p> <p>Some of the participants were of the view that assigned scores in few questions are slightly on the higher side. However, that does not had significant impact on overall implementation status of IWRM.</p> <p>Additional comments on the survey or supporting materials, if any:</p>	

Stakeholder groups	Level of engagement (mark with 'X')			Additional information (e.g. which stakeholder organisations were involved, how they contributed or were engaged, or any challenges faced)
	Low (given opportunity to contribute)	Medium (some input)	High (discussion/negotiation)	
National water agencies			X	Ministry of Water Resources and attached departments
Other public sector agencies		X		Ministry of Climate Change
Sub-national water agencies		X		Provincial Irrigation Departments and Provincial Agriculture Departments
Basin/Aquifer agencies			X	Indus River System Authority and Federal Flood Commission
Water User Associations	X			
Civil society		X		
Private sector	X			
Vulnerable groups		X		Representatives from Area Water Partnerships of remote and vulnerable areas
Gender expertise		X		Participation of female professionals from public sector and academia
Research/academia		X		National University of Sciences and Technology, and National Defence University
Transboundary expertise		X		Office of the Pakistan Commissioner for Indus Waters
Other SDG focal points	X			SDG wing of Ministry of Planning, Development and Special Initiatives
<i>Please add rows if required</i>				

Annex 6: Facilitator's Certificate



Muhammad Ukasha

successfully completed, received a passing grade, and was awarded this Cap-Net Certificate of Completion in

Training of Facilitators Course for SDG 6.5.1



A handwritten signature in blue ink, reading "Monika Weber-Fahr".

Monika Weber-Fahr
Executive Secretary
Global Water Partnership Organisation

A handwritten signature in blue ink, reading "Joakim Harlin".

Joakim Harlin
Head of the Freshwater Unit, UN Environment Programme
and Chief Manager of the UNEP-DHI Centre
UNEP-DHI Centre

A handwritten signature in blue ink, reading "Themba Gumbo".

Themba Gumbo
Director
Cap-Net UNDP

Certificate ID Number: 16a56d06534b43c18dfd1fca665591e8

July 15, 2020