



# IWRM Action Plan, Nepal

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## Acronyms

1	CHAL	Chitwan-Annapurna Landscape
2	DHM	Department of Hydrology and Meteorology
3	DoFSC	Department of Forest and Soil Conservation
4	DNPWC	Department of National Parks and Wildlife Conservation
5	DoLS	Department of Livestock Services
6	DoWRI	Department of Water Resource and Irrigation
7	FFEWS	Flood Forecasting and Early Warning System
8	FY	Fiscal Year
9	LAPA	Local Adaptation Plan of Action
10	MoEWRI	Ministry of Energy, Water Resources & Irrigation
11	MoFE	Ministry of Forest and Environment
12	MoFAGA	Ministry of Federal Affairs and General Administration
13	MoLJPA	Ministry of Law, Justice and Parliamentary Affairs
14	MoPIUT	Ministry of Physical Infrastructure, Urban Development and Transport Management (Province Governments)
15	MoITFE	Ministry of Industry, Tourism, Forest and Environment (Province Governments)
16	MoALD	Ministry of Agriculture and Livestock Development
17	MoWS	Ministry of Water Supply
18	NAP	National Adaptation Plan
19	NAPA	National Adaptation Program of Action
20	PCTMCAP	President Chure-Terai Madhesh Conservation Area Program
21	WECS	Water and Energy Commission Secretariat

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## 1. Executive Summary

Nepal is committed to pursue the 2030 agenda of Sustainable Development Goals. It has mainstreamed the SDG through its periodic national development plans since the fiscal year 2016/17. Since water resources have the potential of contributing significantly in the social and economic transformation of its people, sustainable development and management of its water resources is a high priority of the Government of Nepal. Integrated water resources management (IWRM) has been adopted in its national policies, plans and strategies related to water resources. However, Nepal has been lagging behind in implementation for several reasons. This has been brought to surface by the 2020 survey on degree of IWRM implementation which was led by UNEP, the custodian of the SDG 6.5.1. The overall IWRM score of Nepal was 37, which was just a marginal increment from its baseline score of 33 in 2017. Among the four components of IWRM implementation, the 2020 survey showed that Nepal lagged behind the most in the “Enabling Environment” component, with a score of 27. The next weak component was the “Management Instruments” (score 36). The survey indicated that the situation in “Institutions and Participation” component was fairly better (Score 51).

With the aim of accelerating the process of IWRM implementation in the country, Government of Nepal has prepared this action plan in consultation of all the relevant stakeholders in government, non-government, academia, private sector and multi-lateral development partners. A team of experts prepared a baseline document assessing the current status of the initiatives taken for implementing IWRM in Nepal. This document was reviewed by a Task Force Team which consisted of experts and senior government officials related to water and its ancillary sectors and was chaired by the Secretary of Water and

Energy Commission Secretariat (WECS), the government focal point for SDG 6.5.1. Together with the Task Force Team, a list of priority actions were identified and elaborated. This list of actions were discussed, refined, and endorsed through consultative workshops in which stakeholders from relevant government, non-government, academia, development partners and private sectors took part.

This Action Plan aims to address the challenges that have been hindering the implementation of IWRM in Nepal. Altogether, there are 21 action programs in the plan. Among these, four priority actions are directed at improving the “Enabling Environment”, the weakest component of IWRM implementation in Nepal at present. There are the four actions to reinforce “Institutions and Participation”, four actions which are essential for strengthening the “Management Instruments” and one action to ensure “Financing”. All of these 14 actions are necessary to be taken up in order to speed up IWRM implementation in the country. The other five actions are aimed at the ongoing projects or programs where opportunity lies to demonstrate how adding IWRM elements could substantially enhance not only their targeted outcomes but also help contribute in sustainable management of water resources in the corresponding areas. The results could be the showcases for other projects in future.

Political will and determination to act and allocate financial resources, and build capacity are the building blocks for implementing this action plan. It is contemplated to be completed in a period of 4 years. The action plan is envisaged to remove the hindrances and accelerate the process of IWRM implementation to a great extent. It is also envisioned that Water and Energy Commission Secretariat, the apex water policy advisory body and the focal point for SDG 6.5.1, will continue to take the lead in advocating for and realizing the execution of this action plan effectively.

## 2. Strategic Context

Nepal has committed itself to pursue the 2030 agenda for sustainable development as a means of transforming the social and economic conditions of its people in a sustainable manner. The promulgation of the new constitution of Nepal coincided with the adoption of 2030 Agenda for Sustainable Development by the United Nations in 2015. This constitution reflects the Nepalese people's aspiration of institutionalizing far-reaching political changes for sustainable, equitable and inclusive social and economic development. This aspiration resonated well with the Sustainable Development Goals (SDGs). Nepal internalized and mainstreamed the SDG through its 14<sup>th</sup> National Development Plan (2016/17-2018/19) and continued in the 15<sup>th</sup> National Development Plan (2019/20-2023/24). The priority given to SDG is evident from the fact the Prime Minister himself chairs the High-Level Steering Committee on SDGs. The Vice-Chairman of the National Planning Commission (NPC) oversees its implementation and monitors the progress. The review in 2020 not only monitored the progress but also highlighted the challenges, particularly in mainstreaming the SDG at sub-national levels. Also, it took note of the challenges in resource mobilization, data management, and coordination, and in monitoring and evaluation.

### 2.1 Integrated Water Resource Management in Nepal

Importance of water resources in Nepal's economic and social development needs no overemphasis. The available water resources have a large potential for development, but the extent of its utilization has remained low. Although irrigation and hydropower generation are the two large scale uses, drinking water supply, navigation, environmental, recreational and religious uses are equally important for

Nepal. Therefore, sustainable development and management of water resources is at the heart of social and economic transformation of the country. The benefits are not only for Nepal but also for the riparian countries particularly in terms of controlling flood and flow augmentation for dry periods in the downstream countries.

Since the Earth Summit in 1992, following its Agenda 21, Nepal has formulated its national Water Resources Strategy in 2002. Integrated water resources management is one of the key strategic principles adopted in the strategy. It recognized river basin as a management unit for sustainable water resources and environmental conservation. National Water Plan (2005) adopted this strategy. However, implementation of the Plan remained poor mainly due to weak financing capability and poor coordination. Furthermore, the political upheaval in the country, which led to a change in governance system, has also its toll in implementing the plan effectively. One positive impact of this Plan is the revamping of the legal and institutional provisions which secured water resources development in the mainstream agenda including in the new constitution of Nepal (2015). Integrated Water Resources Management (IWRM) is now accepted as one of the key policy principles for national water resources development in the country. To this effect, Government of Nepal has formulated a new national Water Resources Policy in 2020, in which IWRM and river basin plan implementation are well addressed. A new Water Resources Bill has also been drafted in the same spirit.

At the planning level, River Basin Management Plans are in preparation, and Irrigation Master Plan (2019) has already been prepared following the integrated water resources management principles. There exists several policies and strategies that have direct or indirect link to water resource management. Important ones are the

Irrigation Policy (2014), the National Water Supply & Sanitation Policy (2014), Water-Induced Disaster Management Policy (2015), National Forest Policy (2019), the Forestry Sector Strategy (2016-2025), the Chitwan-Annapurna Landscape (CHAL) Strategy and Action Plan (2016-2025), National Ramsar Strategy and Action Plan (2018-2024), National Climate Change Policy (2019), National Adaptation Plan (NAP), the National and Local Adaptation Programs of Actions (NAPA, LAPA), and the Nationally Determined Contributions (NDC). However, IWRM is not sufficiently emphasized or incorporated in many of these policy instruments. As a result, conventional sectoral approach continues in practice.

## 2.2 The SDG 6.5.1: Degree of Integrated Water Resources Management Implementation

Dedicated specifically to water and sanitation, the SDG 6 – *Ensure Availability and Sustainable Management of Water and Sanitation for all* – has a cross-cutting dimension. It plays important role in the linkages among all the 17 SDGs. Among the 8 targets and 11 indicators in SDG 6, the target 5 is the implementation of integrated water resources management (IWRM) - *By 2030, implement Integrated Water Resources Management at all levels, including through transboundary cooperation as appropriate*".

The indicator SDG 6.5.1 is the measure of the *Degree of integrated water resources management (IWRM) implementation* in countries, and it is measured with respect to the four key components of IWRM implementation. They are:

- **Enabling environment:** Policies, laws and plans to support IWRM implementation.

- **Institutions and participation:** The range and roles of political, social, economic and administrative institutions and other stakeholder groups that help to support implementation.
- **Management instruments:** The tools and activities that enable decision-makers and users to make rational and informed choices between alternative actions.
- **Financing:** Budgeting and financing made available and used for water resources development and management (apart from drinking water supply and sanitation) from various sources.

UNEP - the custodian of the SDG 6.5.1 Indicator – has been monitoring the status/progress globally. It monitors through a survey instrument which contains 33 questions, each has thresholds with scores to assign on a scale of 0 to 100 (Very low to Very high). A global baseline status was established in 2017 and the progress against this baseline was monitored in 2020. UNEP reported that the global average indicator score in 2017 was 49, which increased to 54 in 2020. UNEP came to a conclusion that the global rate of progress need to double in order to achieve the target.

## 2.3 Findings from SDG 6.5.1 Survey (2020) in Nepal

Nepal's baseline score for indicator SDG 6.5.1 was 33 in 2017. The same increased to only 37 in 2020. This was lower than the average score for Southern Asia, which was 41.

Nepal lagged behind the most in the "Enabling Environment" component, with the lowest score of 27. It fared relatively better in "Institutions and Participation" (score 51), followed by "Management Instruments" (Score 36) and "Financing" (Score 32).

Based on the challenges and the ways forward reported in the SDG 6.5.1 survey in 2020, Government of Nepal, under the aegis of Water and Energy Commission Secretariat (WECS), the focal point, carried out a thorough assessment and analysis of the situation<sup>1</sup>. This document was assessed by a Task Force team (Annex 1) which consisted of representatives from various water related government line ministries and departments, relevant international non-profit organizations and development partners. During the process, a list of priority actions were identified which would precisely address the challenges and fill up the gaps that were hindering the implementation of IWRM in the country.

The Baseline Document as well as the listed priority actions were evaluated by the concerned stakeholders during a consultation workshop, which was held in virtual platform (due to Covid-19 restrictive situations in the country) on the 2<sup>nd</sup> of March 2022 (Annex 2). A total of 18 participants took part in this workshop (Annex 3) and provided their suggestions and comments. After incorporating the comments and suggestions from the participants, a draft IWRM Action Plan was prepared, which was again reviewed by the Task force Team. The revised version of the draft Action Plan was presented to the concerned stakeholders for further discussion, comments, suggestions and endorsement in yet another consultation workshop held on the 7<sup>th</sup> of July, 2022 (Annex 4 & 5). The updated version of that draft is the present IWRM Action Plan, which is envisaged to be implemented in Stage-3 of the SDG 6 IWRM Support Program.

### **3. Overarching Goals and Priority Objectives of the Action Plan**

The main purpose of this Action Plan is the acceleration of IWRM implementation for sustainable water resources development and management in Nepal. IWRM ensures optimum and beneficial utilization of water resources, inclusive and equitable distribution of benefits, and conservation of environment and ecosystems which are essential for social and economic transformation of the country.

The main goal of the Action Plan is to support Nepal in optimal utilization of its water resources for a socially equitable and inclusive, environmentally secure and economically prosperous Nepal. The Action Plan is envisaged to contribute in strengthening the newly established federal governance system by empowering all the three tiers of governments through meaningful engagement in managing water resources under their jurisdiction, as envisioned by the Constitution of Nepal.

The objective of the Action Plan is to overcome the challenges which have been hindering the implementation of IWRM in Nepal. It targets the weakest areas within the important frontiers of IWRM implementation in Nepal, namely (i) Enabling Environment; (ii) Institutions and Participation; (iii) Management Instruments; and (iv) Financing.

It is envisaged that WECS, the national focal point for SDG 6.5.1 and also the apex body for planning and policy formulation for the Government of Nepal in water and energy sectors, will take the necessary lead in realizing

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<sup>1</sup> Both the 2017 and 2020 surveys, as well as the two-page results summaries, are available for download from: <http://iwrmdataportal.unepdhi.org/countrydatabase>

the implementation and monitoring of this action plan in the country.

## 4. Overview of the Action Plan

The Action Plan consists of 21 priority actions, among which, four actions are targeted at improving the Enabling Environment, four at Institutions and Participation, and the other five at strengthening the Management Instruments. Ensuring the investment in these actions is itself an important priority action. At the same time, five actions have also been identified which are aimed at the ongoing activities where opportunity exists for incorporating IWRM. These are described below.

### 4.1 Priority Actions to strengthen Enabling Environment

**Purpose:** The 2020 survey has shown that Nepal lagged the most in the Enabling Environment component (score 27). Hence, a set of actions are proposed here that emphatically address the existing challenges that are hindering IWRM implementation in the country. The purpose is strengthening the enabling environment essential for implementing IWRM.

#### Priority Action No.1: Promulgation of an Umbrella Policy on IWRM

**Objective:** Institutionalization of the political commitment to implement IWRM at all the three tiers of governments under the newly established federal system.

**Rational:** The existing policies on water supply and sanitation, hydropower development, forest, environment, terrestrial and freshwater ecosystem and biodiversity provide only a subordinate focus on IWRM. Most of these policies and the laws were developed under the erstwhile unitary governance system. Hence,

their enforcement is problematic in the present context of federal governance system in any way. The new National Water Resources Policy (2020) incorporates the principles of IWRM and river basin management. However, there is no policy that binds together the sectoral policies when it comes to water resources management aspect. Though envisaged by the Constitution, province and local governments do not have yet any policy that can guide their development programs in water sector. Hence, there is an urgent need for a national umbrella policy which can lead to IWRM implementation from every concerned sectors synergistically in the country. A province level IWRM policy, in concurrence to the national policy, is also a necessity for implementation at province and local government levels. The implementation of province level umbrella IWRM policy would place the provincial and local governments into an important position in terms of devolution of authority and responsibility in water resource management, and thus help in strengthening the federal governance system in Nepal.

**The Action:** The process of formulating the umbrella policy and legislation on IWRM implementation can be executed through MoEWRI, who should take the lead in advocating for the envisaged umbrella policy in the first place, and then in drafting the policy in coordination with MoFE, MoFAGA, WECS, MoWS, MoALD, MoLJPA and other relevant ministries and departments at the federal level, and also the relevant ministries at the province level. The drafting process should be carried out through a Task-force to be formed under the MoEWRI, with members from these organizations. The umbrella policy should provide a comprehensive outlook to freshwater ecosystems which holds the key to sustainable water resources management in the country. It should contribute into effective implementation of the river basin management plans (currently under preparation), while meeting the water



related sectoral development goals and strategies. During the process, areas also should be identified in the sectoral strategies and policies where additional provisions or amendments may be required. Care must be taken that the umbrella policy contributes in complying with the Convention on Biological Diversity, UN Framework Convention on Climate Change, Paris Agreement, UN Forest Instruments, Sendai Framework for Disaster Risk Reduction and other international conventions and treaties to which Nepal is a party. In concurrence to this umbrella policy, a model umbrella IWRM policy would be drafted for the provincial governments. The MoEWRI should take the lead and prepare this draft in consultation with the province and local governments. After customizing to suit the local situations, the province government should endorse and implement the policy at their levels.

**Link to the SDGs:** SDG 6.5.1 in particular, and all the SDG 6 in general; SDG 13 SDG 15.

**Time Frame:** One to two years.

### **Priority Action No.2: Harmonization of the existing national policies and laws on natural resources converging to build focus on IWRM**

**Objective:** Integrated land, water resources and environment management

**Rational:** Separate policies and laws exist for managing various natural resources. Sectoral policies also exist on hydropower, irrigation, water supply, forest management, physical infrastructures, urban development, waste management, tourism development, and others. Most of these existing policies and laws have a narrow focus on the sectoral interests which were again developed under unitary governance system. These policies and laws are inadequate or outmoded in the present context of federal governance system and in the perspective of the objectives of IWRM. Hence, there is an urgent

need to harmonize these sectoral policies and laws and bring them to converge and play their due roles in implementing IWRM from their respective sectors.

**The Action:** The action should be undertaken in steps. Firstly, with the support of Nepal Law Commission, MoEWRI needs to identify those policies and laws which need harmonization from the perspective of IWRM and customization to suit to the present federal government system. Important ones are the National Environment Policy (2019), Forest Policy (2019), Climate Change Policy (2019), Forest Policy (2020), Environment Protection Act (2019), Forest Act (2019), Electricity Act (1992), Hydropower Development Policy (2001), and others. Next, the MoEWRI, with support of WECS, should initiate the consultation process to advocate for the need of harmonization. It's a positive sign that some concerned federal line ministries have already commenced their process and harmonized/revised the respective policies and laws; National Water Resources Policy (2020) and draft Water Resources Bill (2021) are the examples. It would be worthwhile coordinating with other related ministries at the federal and provincial governments to streamline and consolidate the process of harmonizing the remaining policy and laws to converge on IWRM, wherever necessary. It is important that the process harmonizes with the international conventions and protocols such as Convention on Biological Diversity, Paris Agreement, Sendai Framework for Disaster Risk Reduction, and Convention on Wetland of International Importance etc. to which Nepal is already a party.

**Link to the SDGs:** SDG 6.5.1, 5.3.1, 6.3.2, and 6.6.1 in particular, and SDG 13 and SDG 15

**Time Frame:** About one year for the first step, and about two years to complete the harmonization process.

### **Priority Action No. 3. Develop a framework to roll IWRM at the local government/watershed level**

**Objective:** IWRM implementation at the local level

**Rational:** In the absence of knowledge and the felt-value of integrated approach, the local governments are proceeding with conventional approach to meet their sectoral interests. This has been the main cause of adverse impact on water resources and environment. Drying up of spring water sources, depletion of groundwater resources and inundation are some of the rising man-made problems observed at the local level as a result of the uncoordinated development activities.

**The Action:** MoEWRI with technical support of WECS should take the lead in developing a framework in keeping with the umbrella water resources policy and (new) water resources legislation, in association with the province and local governments for rolling out IWRM at the local government and the watershed level. This framework, once endorsed by the local and province governments, would provide guidelines to water resources management in particular, and infrastructure development programs in general, at the local level.

**Link to the SDGs:** SDG 6.5.1 and SDG 6.b.1 in particular, and SDG in general

**Time Frame:** About one year for developing the IWRM Framework.

### **Priority Action No. 4: Development and implementation of local IWRM plan by the local governments.**

**Objective:** Localization of IWRM implementation

**Rational:** Same as above, explained in Priority Action No.3.

**The Action:** Following the IWRM Framework, the local governments should prepare their local IWRM plan at watershed scale and implement them. The province governments prepare their sub-basin scale IWRM plans taking into consideration of the watershed scale local plans. With financial and technical support from bilateral and multilateral development partners, WECS/MoEWRI leads this campaign and helps build capacity, and provides the necessary technical data based on the river basin management plans. WECS guides and supervises the whole process and makes sure these plans are not contradictory to the river basin plans.

A couple of examples exists in Nepal where attempts of integrated management of natural resources has been made at local level; for example, integrated management of water resources in Begnas Lake in Kaski District, and Local Water Resources Management Committee in Tinau River in Gandaki Province, Local Water Parliaments in Ilam district in Province 1 and in Melamchi in Bagmati Province. With the adoption of the Umbrella IWRM policy and the establishment of IWRM implementing agencies at federal, province and local governments' level, the local governments may initiate formulating local IWRM plans in these watershed as pilot cases. Subsequent replication should be started in other provinces

**Link to the SDGs:** SDG 6.5.1, SDG 6.b.1, SDG 6.3.1, SDG 6.4.1, SDG 6.6.1

**Time Frame:** Two to four years

## 4.2 Priority Actions to strengthen Institutions and Participation

### Priority Action No. 5: Assign an organizational container at federal and province level with mandate to implement IWRM

**Objective:** Implementation of IWRM at all levels.

**Rational:** At present, no institution has the mandate of implementing IWRM in the country, nor the management of water resources as such. The responsibility that too vaguely, is fragmented across a number of government ministries and departments which are mandated specifically to only utilizing the water resources. As a result, conventional sectoral approach has been the norm in water resources development projects at all levels of governments with little or no concern towards sustainability of the resources. IWRM provides an answer to this present situation, but there is at present no institution that can act to this effect. As a result, development works are proceeding uncoordinated which is leading to adverse environmental impacts as well as conflicts over the water resources. WECS is an apex body but its mandate is limited to policy advisory role.

**The Action:** WECS, under the MoEWRI should function as the organizational container and the DoFSC/MoFE should be the complementing agency for IWRM implementation at federal level. These arrangements need to be established by appropriate legislation. The MoEWRI together with WECS should take the lead in drafting an organizational structure which expands and enhances the scope of operation and authority of WECS enabling it to enforce the river basin management plans in an integrated manner effectively. This new construction of WECS should be established through an act.

Hence, the MoEWRI should also draft a bill to this effect and the Government of Nepal should enact it.

Similarly, at the province level, the MoPIUT should function as the organizational container and the MoITFE should complement in implementing IWRM. The provincial governments should also establish this arrangement through their own legislation enacted by the respective governments.

At the local government level, an entity (unit or section) with adequately capacitated staff should be identified with a mandate for IWRM implementation at the local government level.

**Link to the SDGs:** SDG 6.5.1 and SDG 6.b.1 in particular, and SDG in general

**Time Frame:** One to Two years

### Priority Action No. 6. Capacity building for implementing and compliance of IWRM policy and water related laws

**Objective:** Effective implementation of IWRM at all levels

**Rational:** Capacity for implementing IWRM is low at present. This situation is inevitable as there is no practice and no organizational container that has a mandate to implement IWRM and integrated watershed/river basin management in the country. Human resources are sufficiently knowledgeable about the dimensions of IWRM but the ways and means of realizing IWRM principles into practice are lacking in the country. So, capacity building is the key to internalizing, conceptualization and integration of IWRM in water resources development projects which ultimately will lead to IWRM implementation. Capacity building is thus a priority action needed for the water professionals, managers, policy makers and decision makers at all levels of governments and the stakeholders as well.

**The Action:** There is only one university in the country that has been conducting master's degree program in interdisciplinary water resources management since 2007. Only a limited few water professionals in the government institutions have some exposure to IWRM that too through short-term training courses only. This situation has to improve significantly and rapidly. At least to start with, the water professionals in the organizations that are assigned to the IWRM organizational container (Action No. 3) have to be trained sufficiently in order to build their professional and thus the institutional capacity. Development partners, including bilateral and multi-lateral agencies can play a crucial part in this area. To begin with, qualified professional could be positioned in the mandated organizations and invest on them to develop their implementing capacity at federal and province levels. At the same time, professionals in the local government can be trained as they have a key role in localizing IWRM implementation. The academic institutions need support in expanding their programs, and research. The research-knowledge-education-policy-practices interface needs to be developed and consolidated.

**Link to the SDGs:** SDG 6.5.1 and SDG 6.b.1 in particular, and SDG in general

**Time Frame:** To be started immediately after the organizational container/s is/are assigned, and to be continued thereafter.

**Priority Action No. 7. Multi-stakeholders' platforms (MSPs) at local watershed, sub-basin and basin levels**

**Objective:** Localization of IWRM agenda

**Rational:** The localization of IWRM agenda can be effectively integrated into the watershed management programs in the country. This holds

importance given that local governments are entrusted to implement natural resources management programs that are built on watershed management practices. Contrarily, policies and programs on watershed management in the present context are narrowly focused, weakly threaded to emerging ecological concerns and also deficiently financed. Existing focus is almost entirely on conservation of soil and water resources in the headwater, protection of vital infrastructures from potential risks of landslide and mass wasting (e.g. roadside erosion control) and control of sedimentation in the water infrastructures and restoration of degraded land. Some of the emerging concerns, e.g. increasing use of agricultural chemicals and their residues entering into the water bodies, spring-shed management, management of urban and rapidly urbanizing watersheds and managed groundwater recharge remain out in the focus of existing programmatic approach of watershed management.

The need of an organization constituted with broad-based participation of public, private, community and civic entities to function as interlocutor and mediator on basin wide management of water and other natural resources is evident. There are evidences of such an organization playing instrumental roles in promoting sensible uses of water and care for aquatic ecosystems in the domestic and international water systems. A river basin organization (RBO), which is widely acclaimed for basin wide governance and management of water resources, would not be an easy to achieve proposition without a grass-root apparatus that support the higher level mechanism. Political will and institutional resistance to commissioning RBOs outside the direct control of government ministry is another serious hurdle. Hence, multi-stakeholder platforms at watershed, gradually progressing upward to sub-basin and basin levels, is a promising solution to supporting IWRM implementation through their assigned role in

prospecting, advocacy, process monitoring and auditing, mediation and information dissemination in their jurisdictions. Their demonstrated contributions in resolving outstanding and emerging challenges and conflicts would help establish their credence. Once their credence and demonstrated contributions start consolidating, MSPs could constructively contribute and organizationally grow into RBOs as they gain knowledge and experience with time. All these new systems to establish and grow require a strong political will backed by a sustained financing and legislation.

**The Action:** MoEWRI/WECS in coordination with provincial MoPIUT take the lead in initiating the formation of multi-stakeholder's platforms (MSPs) at watershed (Palika), and then at sub-basin and basin levels subsequently. MSPs can be constituted under convenorship of local governments at the watershed level, provincial government ministry (MoPIUT) at the sub-basin level and RBOs or WECS/ MoEWRI at the national level with broad based participation of civil society, CBOs, private sector and independent professionals. Co-convenor at each level should be designated from civic entities. MoFE would be a close working partner to the MoEWRI in every step.

The MSPs at each level need to be trained and their capacity built on advocacy, mediation and communication (information dissemination). They also need support to further advocacy for reforms in policies and practices.

**Link to the SDGs:** SDG 6.5.1, SDG 6.b.1

**Time Frame:** Two years

### **Priority Action No. 8: Gender Equality and Social Inclusion (GESI) mainstreaming guidelines and action plan for their implementation at all levels to assure their targeted internalization at each level**

**Objective:** Leaving no one behind from the benefits of water resources development

**Rational:** Gender Equality and Social Inclusion (GESI) mainstreaming in water resources management goes beyond the issue of integration of women. It is not just about increasing women's representation in water users' associations and committees, which is the current practice, nor is it creating a new general legal framework on gender protection, although these actions may be necessary. Gender mainstreaming is about the access to benefits from a water development project and an active role in management of water resources. It should be a built-in concept in the technical design of a project, and women should be in a position to define and assert for their requirements. Gender mainstreaming is about fully integrating all gender perspectives such as differences in needs, uses and practices, and access to resources, vulnerabilities and impacts, adaptation and mitigation capacity. This has to come into fruition in water planning, management and decision-making.

A number of gender mainstreaming strategies and policies have been formulated and adopted in implementation in different sectors in Nepal. However, such strategies and policies are not always accompanied by concrete action plans, nor are they adequately funded. As a result, such measures and mechanisms are often not fully implemented, nor monitored and evaluated. Some efforts have been made in this direction, such as gender mainstreaming guidelines have been prepared and endorsed for implementation in irrigation and water-induced disaster reduction sub-sectors. However, these fragmental efforts

are not sufficient to implement IWRM across the board in true sense.

Lack of internalization of these guidelines at every differentiated levels of implementation does not provide a legally enabling environment for their actual enforcement. Though action plans and guidelines are instruments of institution and participation, in Nepal's context, they also become a factor for an enabling environment as the appropriate internalization of these guidelines at each differentiated local level actually help GESI mainstreaming.

**The Action:** The existing gender equality and social inclusion policies, strategies and guidelines for water sub-sectors need to be thoroughly reviewed and evaluated in terms of access to benefits from water resources development projects and in sustainable water resource management, as mentioned above. A gender mainstreaming guideline specific to supporting meaningful implementation of IWRM needs to be developed for implementation in each sub-sector within the water sector, and this should be made mandatory at federal, province and local government level.

The GESI Mainstreaming Guidelines (2015) for Irrigation and Water-Induced Disaster Management sub-sectors has delineated a step-by-step procedure for integrating GESI into projects, from project identification to implementation stages. Starting from a review of these guidelines, and its improvisation where needed, GESI mainstreaming guidelines should be prepared for other water related sub-sectors, and should be implemented by all the three levels of governments in Nepal.

Building of capacity at all levels to internalize and apply the guidelines in the relevant tasks at the units of all levels of government should be an integral part of this priority action. The relevant civil service and political entities in the federal,

provincial and local government units should be identified and provided exposure to GESI mainstreaming in IWRM process through "learning-by-doing" exercises.

**Link to SDGs:** SDG 6.5.1, SDG 5

**Time Frame:** Two years

### 4.3 Priority Action Areas to strengthen Management Instruments

**Purpose:** This is another area where Nepal has been lagging behind hindering implementation of IWRM in the country. The score for this component was 36 in the SDG 6.5.1 survey in 2020.

#### Priority Action No. 9: Expand the network of hydro-meteorological stations across the country

**Objective:** Expand and strengthen the hydro-meteorological database and enhance climate and hydrological variation management capacity.

**Rational:** Hydrological and climate data are the key instruments for water resources management. However, the hydro-meteorological stations are thinly placed across the country at present. Water quality monitoring network is even sparser. DHM has installed flood forecasting and early warning systems (FFEWS) in some flood prone rivers in the country. Limited meteorological and hydrological stations is a serious constraint in understanding the hydro-meteorological processes and the variabilities, limiting the effectiveness of water resource management and water-induced disaster management.

**The Action:** Expand the DHM network of hydro-meteorological and water quality monitoring stations across the country, especially

in the upper mountains and headwater of the major river basins. Installing automatic data collecting stations with telemetric data transfer systems will be the viable option. Additional investment would become necessary in DHM and the MoEWRI will need to seek external financial support for this action. This action would directly contribute in Nepal's commitment on Convention of the World Meteorological Organization and also to the UN Framework Convention on Climate Change, Sendai Framework for Disaster Risk Reduction and Paris Agreement.

**Link to the SDGs:** SDG 6.5.1, SDG 6.b.1, SDG 6.3.2, SDG 5.4.2

**Time Frame:** Two to three years.

#### **Priority Action No. 10: Promote citizen's science in hydro-meteorological monitoring**

**Objective:** Ensuring people's participation in water resource management

**Rational:** Relying on DHM alone to meet the needed expansion and operation of the hydro-meteorological and water quality monitoring stations for local level water resources management would be unrealistic within the time frame of SDG. Involving local citizens can become an accelerating force in this field. This approach has additional advantage of exposing local people directly to the health of water resources and thus advocate for sustainable management of water resources available in their area.

**The Action:** Promote citizen's science in hydro-meteorological and water quality monitoring by inviting the citizen's groups, Community Based Organizations (CBOs) and local schools to collaborate in establishing and monitoring hydro-meteorological and water quality stations. A mechanism should be developed to share the data to the proper repository organisation, which is

DHM. DHM would analyse and archive the data and make them accessible to all the concerned bodies. DHM would lead this action and coordinate with the MoFAGA in order to implement it through the provincial and local governments.

**Link to the SDGs:** SDG 6.5.1, SDG 6.b.1, SDG 6.3.2, SDG 5.4.2

**Time Frame:** Two years

#### **Priority Action No. 11: Establish at least one rainfall, snow and temperature station by each local government**

**Objective:** Empowering local governments in water resources management

**Rational:** As stated above, DHM alone cannot own and run the meteorological stations across the country. Moreover, the local governments are envisaged to function as the custodian of water and other natural resources in their jurisdiction. Therefore, entrusting the local governments in establishing and running at least one rainfall, snow and temperature station in their jurisdiction should be of their interest considering the value added by the information produced for local level policy, planning and decision making.

**The Action:** DHM/MoEWRI and MoFAGA should support the local governments in establishing at least one meteorological stations in each municipality (local government unit). Government of Nepal should prioritize this activity and invest with the financial support of bilateral and multilateral agencies. DHM would provide all the necessary technical and capacity building support to the local governments.

**Link to the SDGs:** SDG 6.5.1, SDG 6.b.1, SDG 6.3.2, SDG 5.4.2

**Time Frame:** Three to five years

**Priority Action No. 12: Develop a mechanism for data sharing by local governments, citizen's groups, CBOs and school and operationalize a national database centre.**

**Objective:** A national hydro-meteorological and water quality data centre is established for water management from watershed to river basin level.

**Rational:** Data collection is not sufficient by itself. It should be disseminated to a level where proper analysis and interpretation useful to management of water could be carried out. Therefore, a mechanism is necessary to disseminate the data for analysis and make the results to the water managers, researchers, and the policy and decision makers at all levels. At present, DHM collects and analyses the hydro-meteorological data at the federal government level, and disseminates to the general public. Because of the limited stations, such data are not sufficient to address the needs of watershed scale water management. With expanded network and with the involvement of citizens and local government bodies, the depth and scope of data usefulness will increase to a large extent.

**The Action:** DHM/MoEWRI and MoFAGA mobilize the province and the local governments for data collection and data sharing. Together with MoFAGA, DHM/MoEWRI develops a robust mechanism for data sharing and dissemination of the results.

**Link to the SDGs:** SDG 6.5.1, SDG 6.b.1, SDG 6.3.2, SDG 5.4.2

**Time Frame:** Two years

**Priority Action No. 13: Establish baseline (status) of freshwater ecosystem and aquatic biodiversity**

**Objective:** Healthy freshwater ecosystem and sustainable ecosystem services.

**Rational:** Ecosystem and biodiversity management comes within the responsibility of Ministry of Forest and Environment (MoFE) at the federal level and Ministry of Industry, Tourism, Forest and Environment (MoITFE) at the provincial level. But within MoFE, the responsibilities for freshwater ecosystem management stands divided between the Department of Forest and Soil Conservation (DoFSC), to the extent of interconnection between terrestrial and aquatic biodiversity and water bodies located in the forest ecosystem, and the Department of National Parks and Wildlife Conservation (DNPWC) for its responsibilities on the conservation of wildlife, both terrestrial and aquatic, and their habitat inside protected areas, national parks and RAMSAR sites. As far as fishery is concerned, capture fishery (both lake and riverine), which holds large segment of aquatic biodiversity and importance in contributing to local economy and livelihoods, DNPWC is only partly concerned and much of its attention goes to protection of large aquatic animals and endangered species. Culture fishery (aquaculture) on the other hand comes entirely in the domain of Ministry of Agriculture and Livestock Development (MoALD) where Nepal Agricultural Research Council (NARC) holds research and development responsibility and Department of Livestock Services (DoLS) for technology transfer and promotional activities. As a result, no institution is responsible for the monitoring or managing the freshwater ecosystem and biodiversity in totality, which is essential for maintaining sustainable water resources in the country.

**The Action:** A freshwater ecosystem baseline need to be established against which the ecosystem health could be monitored. This can be done by documenting the state of freshwater ecosystems and terrestrial and aquatic biodiversity in the country. It can be initiated across major river basins at the earliest building on the knowledge and the information



documented through project based activities completed in the past. The local governments should map, document and quantify the freshwater ecosystems, terrestrial and aquatic bio-diversity at the watershed level. Provincial government entities (e.g. MoITFE) aggregates the information at the sub-basin levels and the federal government entities (e.g. MoFE) at the basin and national levels. A freshwater ecosystem information system need to be developed in GIS platform and this would be updated periodically through watershed health monitoring system. This action should be implemented by the MoFE/DNPWC as the lead agency. International organizations relevant to this field would support the ministry with technical and financial assistance.

**Link to the SDGs:** SDG 6.5.1, SDG 6.3.2, SDG 5.4.2, and SDG 6.6.1

**Time Frame:** Three years

#### **Priority Action No. 14: Identify and establish indicators for monitoring freshwater ecosystem health.**

**Objective:** Establish a monitoring system to measure the ecosystem health which can guide the sustainable water resources management decisions.

**Rational:** The main objective of IWRM is to maintain sustainable water resources (bodies). Sustainable ecosystem health is an indicator as well as the goal of sustainable water resources management. Therefore, monitoring of ecosystem health is an essential part of IWRM implementation. The monitoring parameters should be few in number but representative of the type ecosystem (index parameter) and should also be easy to monitor. Hence, a set of minimum index parameters (indicators) has to be identified and established for different types of ecosystems in the country. This action has been separately listed here because of the importance of

developing a robust but practical monitoring indicators since this is the instrument for achieving the objectives specified in the previous action no. 13. This action will directly contribute in enhancing the compliance of international conventions such as Convention on Biological Diversity, Ramsar Convention on Wetlands and other related conventions.

**The Action:** MoFE should constitute a multidisciplinary team consisting of freshwater biologists, ecologists, hydrologists, water quality and environment specialists who will study the existing ecosystems and identify and recommend a set of index indicators appropriate to the water body for monitoring their ecosystems. Monitoring should range from watershed to sub-basin and basin levels. Complete with standard operating procedure (SOP), a monitoring system and data analysis system is to be developed. Once endorsed, MoFE in partnership with province and local governments conducts the monitoring at an optimal time interval. External financial assistance would be required for this activity.

**Link to the SDGs:** SDG 6.5.1, SDG 6.3.2, SDG 5.4.2, SDG 6.6.1

**Time Frame:** Two years.

#### **4.4 Priority Actions to Improve IWRM Financing**

**Purpose:** As the SDG 6.5.1 survey in 2020 revealed, financing in IWRM implementation has been poor in Nepal. The reason is that there is not yet any kind of institutional infrastructure in place which implements IWRM and whose investment could be accounted for into this category. The action plan is meant for bridging this major gap, and hence any investments on this plan should be counted as the investment in IWRM for the time being in Nepal. In this context, however, there is a need for monitoring

the investments in this action plan which should be carried out with high priority.

### **Priority Action 15. Lobbying and Monitoring the Investments in the IWRM Action Plan**

**Objective:** Lobbying for investments and monitoring the financing in the action plan implementation.

**Rational:** The IWRM action plan needs to be owned and prioritized by the Government of Nepal. Subsequently, it has to motivate its line ministries to incorporate IWRM elements into their legislations, policies, plans and programs while supporting them with additional financial resources required for such inclusions. Government of Nepal cannot meet all the financial requirements alone, and it needs to mobilize the international funds and multilateral and bi-lateral development partners in order to meet the financial gap. The assigned IWRM Implementing Agency (suggested to be the WECS for this role) has to function on behalf of the Government to this effect.

**The Action:** Once the WECS is assigned the IWRM implementing agency, it should assume the role of motivating, mobilizing and monitoring the investments in this action plan from different sources, different levels of governments, as well as the from the international, multi-lateral and bi-lateral funding agencies and development partners.

Link to the SDGs: SDG 6.5.1 in particular and the SDG 6 altogether.

### **4.5 Priority Action Areas where IWRM could be demonstrably implemented**

**Purpose:** The main purpose of the actions proposed in this section is to take advantage of the ongoing programs or plans where incorporating some elements of IWRM could

substantially enhance their impact/success. Since the formulation of Water Resources Strategy and the National Water Plan, a number of policies have been revised to incorporate the elements of IWRM. Again, a number of initiatives are being undertaken which have multi-sectoral dimensions with implications on water resources management but the integration side has been left in shadow. The present action plan has explored and found some opportune projects and programs where an intervention or two could add value to water resource management and thus effectuate the implementation of IWRM in the concerned areas. They are described briefly in the following sections.

### **Priority Action No. 16: Formulate Policy and Law to implement Integrated River Basin Management Plan**

**Objective:** To implement integrated water resources management in river basin management.

**Rationale:** Government of Nepal has been preparing river basin plans for all the major river basins in Nepal. It is based on the IWRM principles. This project is being undertaken under the aegis of WECS and is financially supported by The World Bank. Though planned to be completed by 2020, there has been some delay in its completion due to the Covid-19 pandemic.

It is obvious that the plan itself does not translate into action unless it is backed by supportive legislation and policy. It is the opportune time to fill up this need.

**The Action:** The main action is the formulation of a policy backed by a law to implement the river basin plans. This action is envisaged to be led by WECS under the MoEWRI. Support of MoFE, MoWS and MoFAGA would be necessary in formulating the required policy and law. Since the plan involves sub-basin level management, local governments will need to implement at

watershed level and the provincial governments at sub-basin level. Laws and policies are also needed for provincial and local governments in order to support the basin plan implementation.

**Link to the SDGs:** SDG 6.5.1, SDG 6.b.1

**Time Frame:** One to two years.

### **Priority Action No. 17: IWRM Implementation guideline for multi-purpose and inter-basin water transfer projects**

**Objective:** Sustainable utilization and equitable distribution of benefits from water development projects, the core value of IWRM principles

**Rational:** Irrigation Policy (2070 BS) and National Water Resources Policy (2020) have assigned priority to reservoir based and inter-basin water transfer based multi-purpose water use projects. A draft Water Resources (management and regulation) Bill (2020) has provisioned, among others, water resource development based on river basin planning, reservoir based and inter-basin water transfer type project development for multiple water uses. All of these have to adopt IWRM principles for developing, operating and managing water resource projects in the country.

Bheri-Babai Diversion Multipurpose Project is an inter-basin water transfer project. The water is diverted from the water surplus Bheri river basin to water deficient Babai river basin through a 12.2 km long tunnel. The project will provide year-round irrigation on 51,000 ha of land in Banke and Bardiya districts in Karnali Province (Mid-West Nepal) and produce 46.8 MW electricity. Started in FY 2011/12, the construction work is scheduled to complete in FY 2023/24.

This project involves several aspects of integration. Among others, water and benefit sharing between upstream and downstream,

water allocation between irrigation and hydropower generation (including under changing climatic conditions), benefit sharing among the irrigation users and others. Hence, it is a fertile ground for IWRM implementation. Though the project has considered integration of the physical aspects, focus on social and environmental aspects of integration is in evolving stage. Their need will become more and more evident once the project comes to its operation and management stage. A timely intervention will fetch a far reaching advantage in its smooth operation and management without any disputes and hurdles.

**The Action:** As mentioned above, this project is an opportune ground for implementing IWRM. It could become a showcase for IWRM implementation in a large and relatively complicated water project in the country. The successful operation and management of this project would pave the way to implementing IWRM in other similar projects which have been planned, such as Sun Kosi-Marin Diversion Project, which is next in line for development. An IWRM implementation framework developed for the Bheri-Babai project can be replicated to other similar projects. MoEWRI/DoWRI, with technical support of WECS should take the lead in this activity.

**Link to the SDGs:** SDG 6.5.1

**Time Frame:** Three years

### **Priority Action 18: Initiate and organize Multi-stakeholders' Platform (MSPs)**

**Objective:** Integrated land, water and other natural resources management at local level.

**Rational:** Broad based participation of public, community and civic entities is necessary to function as interlocutor and mediator in basin-wide management of water and other natural resources. MSPs can play important roles in six

areas of IWRM implementation, viz. prospecting, advocacy, process monitoring and auditing, and mediation and information dissemination in their jurisdictions. Ministry of Forest and Environment is implementing Chitwan-Annapurna Landscape (CHAL) Strategy and Action Plan (2015), which has the objective of integrated river basin approach to climate-smart conservation and sustainable development practices in the Chitwan-Annapurna landscape. This landscape area is mostly in the Gandaki river basin, one of the large river basins in the country. The key strategy related to water resources include, inter alia, to (i) promote integrated water use and management through river basin and sub-basin scale plans that balance multiple use of water including hydropower generation, desired environmental flows and services, (ii) promote watershed conservation for healthy ecosystem services, (iii) ensure conservation and sustainable use of aquatic ecosystem services to provide desired environmental flows, and (iv) reduce climate change and natural disaster risks for economic prosperity. It envisages to integrate basin and sub-basin scale climate adaptation plans into socio-ecological interventions and development plans. All of these are linked with water and are in line with IWRM. However, there is no involvement of DHM, which collects the hydro-meteorological data through its basin office, nor the MoEWRI which is mandated to manage and develop water resources. It would therefore be in the interest of the MoFE as well as the MoEWRI to work together in this program.

**The Action:** MoFE and WECS/MoEWRI work together in the constitution and functioning of the multi-stakeholders' platforms (MSPs) at watershed, sub-basin and basin levels in the CHAL Landscape program. Implementation of IWRM would be the binding thread for these two ministries. An institutional mechanism need to be worked out for this purpose. This action will not only help achieve the goals of the CHAL strategy but also bring fruit to water resources

management in an integrated manner. This could be another project to demonstrate IWRM implementation in Nepal.

**Link to the SDGs:** SDG 6.5.1

**Time Frame:** Two to three Years

### **Priority Action No. 19: Integrated watershed and Water Resources Management in Chure Terai Madhesh region**

**Objective:** Integrated land, surface water and groundwater management

**Rational:** Chure range (or the Siwaliks) is the southern foothills of the Himalayan mountain system. It extends all across the Himalayan mountain range and thus across the country in Nepal. It is a fragile mountain range composed of loosely consolidated Quaternary fluvial sedimentary rocks. All the large and medium rivers originating in the higher Himalayas and the Mahabharat Range flow across this range. A number of smaller rivers originates also from this mountain range. The Terai Plain, or the Madhesh, is the bread basket of Nepal and is home to half of the Nepalese population. The fragile Chure range is under threat due to expanding human encroachment.

After the eradication of malaria in the 1950's, human settlements and economic activities increased not only in the Terai plains, but also encroachment into the Bhabar zone and the Chure range has soared. This has impacted adversely on the forest resources endangering the wildlife and biodiversity in the otherwise pristine Chure and Bhabar ecosystem. Chure is the watershed and Bhabar is the main recharge zone for the groundwater resource, the main source of water for drinking and irrigation use for the people in Terai. To check further deterioration, government of Nepal started the President Chure Terai Madhesh Conservation Program (PCTMCP) in 2071 BS with a goal of conserving and sustainably managing the resources and

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improve the ecosystem services in the Chure region. It is a multifaceted program for sustainable management of land, water, vegetation and biodiversity resources in the Chure, Bhabar and Terai regions.

**The Action:** As the scope of the program suggest, there is ample opportunity to introduce IWRM components and demonstrate IWRM implementation in practice. The ways and means can be explored and proper mechanism can be developed to incorporate IWRM into this program.

**Link to the SDGs:** SDG 6.5.1

**Time Frame:** Two to Three Years

### **Priority Action No. 20: Integration of IWRM in climate change adaptation and mitigation plans and programs**

**Objective:** Sustainable climate change adaptation and mitigation through IWRM

**Rational:** As a Party to the UNFCCC, Kyoto Protocol and the Paris Agreement, Nepal has prepared National Adaptation Programme of Action (NAPA) in 2010 prioritizing the urgent implementation of climate change adaptation programmes. Nepal's NAPA includes 9 priority programmes one of which is dedicated specifically to water resources sector. It targets at empowering vulnerable communities through sustainable management of water resources and clean energy supply. It focuses on managing water resources for sustainable harvesting to secure water supplies using a combination of climate proofing, climate risk management and water use technologies. Local Adaptation Plan for Action have also been prepared in 2011 (and re-issued in 2019). Nepal has also developed its National Adaptation Plan (NAP) and its Nationally Determined Contribution (NDC) programs.

Nepal has accessed several funding sources for implementing its NAPA; viz. Green Climate Fund, LDC Fund, UK and EU Funds. Although water features prominently in NAPA, LAPA and NDC, all these programs are being implemented by MoFE without any involvement of the MoEWRI or WECS. Therefore, coordination between these two ministries, at the least, are necessary if these programs are to succeed. IWRM could be a uniting goal to bring these two key ministries together for climate resilient water resources management and development under these programs.

**The Action:** MoFE and MoEWRI should develop a framework together and integrate IWRM elements into the ongoing and the future climate change adaptation programs. At the same time, IWRM could add greater value to LAPA at the province and local government levels.

**Link to the SDGs:** SDG 6.5.1

**Time Frame:** Two Years

## 5. Overview of actions

#	Title of the action	Brief description of the action	Expected results	Realisation Time	Lead organisation to ensure action takes place	Estimated costs	Water-related aspects targeted
<b>Enabling environment</b>							
1	<b>Priority Action No.1:</b> Promulgation of an Umbrella Policy on IWRM.	Formulation of a federal umbrella policy on IRWM implementation that provides a comprehensive outlook to managing freshwater ecosystems, which holds the key to sustainable water resources management in the country.  In concurrence to this federal umbrella policy, a model umbrella IWRM implementation policy would be drafted for the provincial governments. After customizing for the local situations, the province government should endorse and implement the policy.	Institutionalization of political commitment to implement IWRM at federal and province government levels	1-2 years	Lead: MoEWRI/WECS		SDG 6.5.1 in particular, and SDG 6 in general, SDG 13 and SDG 15; Constitution of Nepal (2015); Convention on Biodiversity, UN-Framework Convention on Climate Change, Paris Agreement, UN Forest Protocol, Sendai Framework for Disaster Risk Reduction etc.
2	<b>Priority Action No.2:</b> Harmonization of the existing national policies and laws on natural resources converging to build focus on IWRM	The action should be undertaken in steps. Firstly, with the support of Nepal Law Commission, MoEWRI needs to identify those policies and laws which need harmonization and customization from the perspective of IWRM and the federal government system. Next, the MoEWRI, with support of WECS, would lead the harmonization process in consultation with other related ministries at the federal and provincial governments.	Integrated land, water resources and environment management	About one year for the first step, and about two years to complete the harmonization process	Lead: MoEWRI Supporting: WECS and Nepal Law Commission.		SDG 5 and SDG 6.5.1 in particular; SDG 13 and SDG 15
3	<b>Priority Action No.3:</b> Develop a framework to roll IWRM at the local	With technical support of WECS, MoEWRI should take the lead in developing a framework, in association with the province and local governments for rolling out IWRM at the local government and the watershed level. This framework, once endorsed by the local and	Enhanced capability of local level for the effective IWRM implementation	About one year for developing the IWRM Framework.	Lead: WECS/MoEWRI Supporting Partners: Federal, and Provincial line		SDG 6.5.1 and SDG 6.b.1 in particular, and SDG 6 in general

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#	Title of the action	Brief description of the action	Expected results	Realisation Time	Lead organisation to ensure action takes place	Estimated costs	Water-related aspects targeted
	government/watershed level	province governments, would provide guidelines to water resources development in particular, and infrastructure development programs in general, at the local level			ministries and Local Governments		
4	<b>Priority Action No.4:</b> Development and implementation of local IWRM plan by the local governments.	Following the IWRM Framework, the local governments should prepare their local IWRM plan at watershed scale and implement it. The province government prepare their sub-basin scale IWRM plans taking into consideration of the watershed scale plans. WECS guides and supervises the whole process and makes sure these plans are not contradictory to the river basin plans.	Localization of IWRM implementation	Two to four years	Lead: Local governments Supporting Partners: WECS and MoFE.		SDG 6.5.1, SDG 6.b.1, SDG 6.3.1, SDG 6.4.1, SDG 6.6.1
<b>Institutions and participation</b>							
5	<b>Priority Action No.5:</b> Assign an organizational container at federal and province level with mandate to implement IWRM	Appropriate legislation to establish WECS under the MoEWRI as the organizational container and the DoFSC/MoFE as the complementing agency for IWRM implementation at federal level. Similarly, legislation to assign the MoPIUT as the organizational container and the MoITFE as the complementin agency for implementing IWRM at the province level. . At the local government level, an entity (unit or section) should be identified with a mandate for IWRM implementation at the local government level	Effective Implementation of IWRM at three tiers of government	One to Two years	Lead: MoEWRI Supporting: WECS, MoFE, at Federal level, and MoPIUT and MoITFE of the Province Governments		SDG 6.5.1 and SDG 6.b.1 in particular, and SDG 6 in general
6	<b>Priority Action No.6:</b> Capacity building for compliance of	Capacity building of the water professionals in the organizational containers at all the three levels of governments, with the support of the development partners.	Effective implementation of IWRM at all levels	To be started immediately after the organizational container/s	Lead: WECS/MoEWRI Co-Lead: MoFE, Supporting Partners: MoPIUT,		SDG 6.5.1 and SDG 6.b.1 in particular, and SDG 6 in general

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#	Title of the action	Brief description of the action	Expected results	Realisation Time	Lead organisation to ensure action takes place	Estimated costs	Water-related aspects targeted
	IWRM polices and water related laws	Support the academic institutions in expanding their education and research programs.		are assigned, and to be continued thereafter.	MoITFE, and academic institutions		
7	<b>Priority Action No.7:</b> Multi-stakeholders' platforms (MSPs) at local watershed, sub-basin and basin levels	MoWRI/WECS in coordination with provincial MoPIUT take the lead in initiating the formation of multi-stakeholder's platforms (MSPs) at watershed (Palika), sub-basin and basin levels. Local governments institute MSPs at the watershed level, provincial government ministry (MoPIUT) at the sub-basin level and MoEWRI at the river basins and national level. MoFE would be a close working partner to the WECS/MoEWRI in every step. The MSPs at each level need to be trained and their capacity built on advocacy, mediation and communication (information dissemination).	Localization of IWRM agenda	Two years	MoWRI, WECS, MoPIUT, MoFE, Fedreal and Local Government		SDG 6.5.1, SDG 6.b.1
8	<b>Priority Action No.8:</b> GESI mainstreaming guidelines and action plan for IWRM implementation at all levels	Review the existing gender equality and social inclusion policies, strategies and guidelines for water and related sectors, evaluate in terms of IWRM. Develop and implement a GESI mainstreaming guideline specific to supporting meaningful implementation of IWRM implementation at federal, province and local government level.	Achievement of SDG of leaving no one behind from the benefits of water resources development	Two years	Lead: WECS/MoEWRI		SDG 6.5.1, SDG 5
<b>Management instruments</b>							
9	<b>Priority Action No.9:</b> Expand the network of hydro-meteorological	Expand the DHM network of hydro-meteorological and water quality monitoring stations across the country, especially in the upper mountains and headwater of the major river basins. Upgrade the stations for automatic	A strong hydro-meteorological database for better climate and	Two to three years.	Lead: DHM/MoEWRI		SDG 6.5.1, SDG 6.b.1, SDG 6.3.2, SDG 5.4.2; Convention of the World Meteorological Organization;



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#	Title of the action	Brief description of the action	Expected results	Realisation Time	Lead organisation to ensure action takes place	Estimated costs	Water-related aspects targeted
	stations across the country	data collecting stations with telemetric data transfer systems.	hydrological variation management capacity				UN Framework Convention on Climate Change; Sendai Framework for Disaster Risk Reduction; Paris Agreement
10	<b>Priority Action No.10:</b> Promote citizen's science in hydro-meteorological monitoring	Promote citizen's science in hydro-meteorological and water quality monitoring by inviting the citizen's groups, CBOs and local schools to collaborate in establishing and monitoring hydro-meteorological and water quality stations. Develop a mechanism to share data for analysis at DHM and the results for use by concerned agencies at federal, province and local levels.	Ensuring people's participation in water resource management	Two years	Lead: DHM Co-Lead: MoFAGA Implementing Partner: MoFAGA, Province and Local Governments		SDG 6.5.1, SDG 6.b.1, SDG 6.3.2, SDG 5.4.2; Convention of the World Meteorological Organization; UN Framework Convention on Climate Change; Sendai Framework for Disaster Risk Reduction; Paris Agreement
11	<b>Priority Action No.11:</b> Establish at least one rainfall, snow and temperature station by each local government	With the technical support of DHM/MoEWRI and coordination of MoFAGA, local governments establish at least one meteorological stations in each municipality (local government unit). Government of Nepal should prioritize this activity and invest with the financial support of bilateral and multilateral agencies. DHM would provide all the necessary technical and capacity building support to the local governments.	Empowering local governments in water resources management	Three to five years	Lead: Local Governments Supporting Partner: DHM/MoEWRI, and MoFAGA		SDG 6.5.1, SDG 6.b.1, SDG 6.3.2, SDG 5.4.2  Convention of the World Meteorological Organization; UN Framework Convention on Climate Change; Sendai Framework for Disaster Risk Reduction; Paris Agreement
12	<b>Priority Action No.12:</b> Develop a mechanism for data sharing by local governments, citizen's groups, CBOs and school and operationalize a	DHM/MoEWRI and MoFAGA mobilize the province and the local governments for data collection and data sharing. Together with MoFAGA, DHM/MoEWRI develops a robust mechanism for data sharing and dissemination.	Establishment of national hydro-meteorological and water quality data centre for water management from watershed to river basin level.	Two years	Lead: DHM/MoEWRI, Co-Lead: MoFAGA Implementing Partner: Local Governments		SDG 6.5.1, SDG 6.b.1, SDG 6.3.2, SDG 5.4.2; Convention of the World Meteorological Organization; Sendai Framework for Disaster Risk Reduction;

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#	Title of the action	Brief description of the action	Expected results	Realisation Time	Lead organisation to ensure action takes place	Estimated costs	Water-related aspects targeted
	national database centre.						
13	<b>Priority Action No.13:</b> Establish baseline status of freshwater ecosystem and aquatic biodiversity	Establish baselines of the freshwater ecosystems of the river basins and other important bodies in the country and develop a freshwater ecosystem information system in GIS platform accessible to all concerned users.	Maintaining Healthy freshwater ecosystem and sustainable ecosystem services.	Three years	Lead: MoFE		SDG 6.5.1, SDG 6.3.2, SDG 5.4.2, SDG 6.6.1; Convention on Biodiversity; Ramsar Convention on Wetlands
14	<b>Priority Action No.14:</b> Identify and establish indicators for monitoring freshwater ecosystem health.	Identify and establish a set of indicators feasible for monitoring the ecosystem health of different types of freshwater ecosystems in the country. Develop a monitoring system that is complete with standard operating procedure (SOP), a monitoring mechanism and data analysis system. Once endorsed, MoFE in partnership with province and local governments conducts the monitoring at prescribed time interval. External financial assistance would be required for this activity	Establishing a monitoring system to measure the ecosystem health which is the source for sustainable water resources	Two years.	Lead: MoFE,		SDG 6.5.1, SDG 6.3.2, SDG 5.4.2, SDG 6.6.1; Convention on Biodiversity; Ramsar Convention on Wetlands
<b>Financing</b>							
15	<b>Priority Action No. 15:</b> Lobbying and Monitoring the Investments in the IWRM Action Plan	Motivate, mobilize and monitor the investments in the IWRM Action Plan	Ensuring the financial resources to implement the IWRM Action Plan	Continuous	Lead: WECS/MoEWRI once WECS is officially assigned as the lead agency for IWRM implementation in Nepal		SDG g.5.1

SDG 6.5.1 IWRM Action Plan Stage 2 - Nepal

#	Title of the action	Brief description of the action	Expected results	Realisation Time	Lead organisation to ensure action takes place	Estimated costs	Water-related aspects targeted
<b>Priority areas where IWRM could be demonstrably implemented</b>							
16	<b>Priority Action No.16:</b> Formulate Policy and Law to implement Integrated River Basin Management Plan	Formulation of a policy and a law for the specific purpose of implementing the river basin management plans, which is being prepared at the moment. Since the plan also involves sub-basin level management, local governments will need to implement at watershed level and the provincial governments at sub-basin level. Laws and policies are also needed for provincial and local governments in order to support the basin plan implementation	Implementing IWRM through river basin management planning.	One to two years	Lead: MoEWRI Supporting Partner: WECS, MoEWRI, MoFE, MoWS and MoALD		SDG 6.5.1, SDG 6.b.1; Impetus to successful implementation of the River Basin Management Plan of the Government of Nepal.
17	<b>Priority Action No.17:</b> IWRM Implementation guideline for multi-use and inter-basin water transfer projects	The under-construction Bheri-Babai Multipurpose Diversion Project provides an opportune ground for implementing IWRM, which could become a showcase for IWRM implementation in other large and relatively complicated water projects in the country. A framework for IWRM implementation can be developed and applied in this project, which can be replicated to other similar projects.	Sustainable utilization and equitable distribution of benefits from water development projects, the core value of IWRM principles	Three years	Lead: MoEWRI Implementing Partners: DoWRI and WECS		SDG 6.5.1; Impetus to successful implementation of the River Basin Management Plan of the Government of Nepal.
18	<b>Priority Action No.18:</b> Initiate and organize Multi-stakeholders' Platform (MSPs)	Developing an institutional mechanism for MoFE and WECS/MoEWRI working together in the implementation of IWRM under the CHAL Landscape Strategy and Action Plan. A joint action in the constitution and operationalization of multi-stakeholders' platforms (MSPs) at watershed, sub-basin and basin levels. Implementation of IWRM would be the binding thread for these two ministries to work together.	Integrated land, water and other natural resources management at landscape scale.	Two to Three Years	Lead: MoFE Supporting Partner: WECS/MoEWRI		SDG 6.5.1; Impetus to successful implementation of the River Basin Management Plan of the Government of Nepal.

SDG 6.5.1 IWRM Action Plan Stage 2 - Nepal

#	Title of the action	Brief description of the action	Expected results	Realisation Time	Lead organisation to ensure action takes place	Estimated costs	Water-related aspects targeted
19	<b>Priority Action No.19:</b> Integrated watershed and Water Resources Management in Chure Terai Madhesh region	The scope of the President Chure-Terai Madhesh Conservation Area Program (PCTMCAP), under the MoFE has ample room for introducing and demonstrating the benefits from IWRM implementation. The ways and means has to be explored and proper mechanism need to be developed to incorporate IWRM into this program	Integrated land, surface water and groundwater management	Two to Three Years	Lead: PCTMCAP Supporting Partners: MoFE, WECS and MoEWRI		SDG 6.5.1; SDG 6.3.2, SDG 6.6.1, 6.b.1
20	<b>Priority Action No.20:</b> Integration of IWRM in climate change adaptation and mitigation plans and programs	Integration of IWRM elements into the NAPA, LAPA, and NCD programs, by developing a framework for MoFE and MoEWRI to work with this objective.	Sustainable climate change adaptation and mitigation through IWRM	Two Years	Lead: MoFE Supporting Partner: MoEWRI		SDG 6.5.1, SDG 6.3.2, SDG 6.6.1, SDG 13, SDG 15

## 6. Monitoring and Evaluation Framework

#	Title of the action	Expected results	Indicators	Target	Means of verification	Verification frequency	Risks and assumptions
<b>Enabling environment</b>							
1	<b>Priority Action No.1:</b> Promulgation of an Umbrella Policy on IWRM.	Institutionalization of political commitment to implement IWRM at federal and province government levels	-Formulation of Federal Umbrella Policy on IWRM backed by law.  -Formulation of model umbrella IWRM policy for provincial government to implement backed by provincial law.	2 years	-The Federal Umbrella Policy on IWRM in effect, backed by law  -Number of Provinces with Provincial Umbrella Policy in place backed by law	Bi-annual	<b>Risks:</b> Possibility of delay due to Political instability  IWRM overshadowed by water food energy nexus.  <b>Assumption:</b> WECS/MoEWRI takes effective leadership
2	<b>Priority Action No.2:</b> Harmonization of the existing national policies and laws on natural resources converging to build focus on IWRM	Integrated land, water resources and environment management	Numbers of existing policies and laws that are harmonized with focus on IWRM in the federal context.	3 years	-Number of policies and laws with IWRM focus -Records/ Documents of financing on IWRM	Quarterly	<b>Risk:</b> -Possibility of conflict due to sectoral interest among the line ministries <b>Assumption:</b> -Strong political will
3	<b>Priority Action No. 3.</b> Develop a framework to roll IWRM at the local government/watershed level	Effective implementation of IWRM at local level	-Establishment of IWRM implementation unit at the local level  - Scope of operation is well defined	1 year	-Number of municipalities that have a functional unit to implement IWRM in its municipality.  -Number of local projects that have incorporated IWRM element	Quarterly	<b>Risks:</b> -Lack of political commitment -Lack of financial resources and institutional mechanism to develop framework

SDG 6.5.1 IWRM Action Plan Stage 2 - Nepal

#	Title of the action	Expected results	Indicators	Target	Means of verification	Verification frequency	Risks and assumptions
4	<b>Priority Action No. 4:</b> Development and implementation of local IWRM plan by the local governments.	Localization of IWRM implementation	Development of local IWRM plans of watershed by the local governments.	2-4 years	-Number of municipalities (local governments) that prepares and implements watershed scale IWRM plans	Quarterly	<p><b>Risk:</b></p> <ul style="list-style-type: none"> <li>- Lack of human resources for preparing and implementing local IWRM plans</li> <li>- Lack of political commitment</li> <li>- Possibility of inter-watershed and inter-municipality conflict over water utilization</li> </ul> <p><b>Assumption:</b></p> <ul style="list-style-type: none"> <li>-Local governments receive adequate technical and financial support.</li> <li>-Capacity of MSPs are sufficiently built on IWRM</li> </ul>
<b>Institutions and participation</b>							
5	<b>Priority Action No. 5:</b> Assign an organizational container at federal and province level with mandate to implement IWRM	Effective Implementation of IWRM at three tiers of government	-Federal and Province governments assigns by law their suitable organizations with a clearly defined mandate of implementing IWRM in river basins and sub-basins approach. -Institutional mechanisms are in place among the	1 – 2 years	-IWRM implementing organizations are in place at all the three levels of governments. -Institutional mechanisms are in place for concerted action by the three levels of governments	Quarterly	<p><b>Risk:</b></p> <p>Absence / failure in recognition of the need for an institutional mechanism to implement IWRM across the country</p> <p><b>Assumption:</b></p> <p>All the three levels of governments are committed to IWRM for sustainable water resources management</p>

SDG 6.5.1 IWRM Action Plan Stage 2 - Nepal

#	Title of the action	Expected results	Indicators	Target	Means of verification	Verification frequency	Risks and assumptions
			three tiers of governments to mediate IWRM implementation from watershed to sub-basin and basin level				
6	<b>Priority Action No. 6.</b> Capacity building for compliance of polices and laws	Effective implementation of IWRM at all levels	Enhanced capability of institutions responsible for the IWRM implementation	To be started immediately and continued	-Number of capacity building programs conducted at each level of government  -Number of staff with enhanced knowledge in implementing IWRM  -Increased visibility and access to enrolment in academic IWRM courses	Quarterly	<b>Risk:</b> - Lack of sufficient funding <b>Risk:</b> -Lack of due priority to capacity building  <b>Assumption:</b> -External resources, funding as well as knowledge resources, becomes available
7	<b>Priority Action No. 7.</b> Multi-stakeholders' platforms (MSPs) at local watershed, sub-basin and basin levels	Localization of IWRM agenda to build on to integrated river basin management	Establishment of well functioning MSP platform	2 Years	-Number of watersheds, sub-basins and basins with operational MSPs.	Quarterly	<b>Risk:</b> -Politicalization of the MSPs -Marginalization of women and disadvantaged communities from MSP <b>Assumption:</b> -Avoid politicalization through the MSP formulation rules -GESI manistreaming is effective
8	<b>Priority Action No. 8:</b> GESI mainstreaming guidelines and action plan for IWRM	-GESI mainstreaming in all spheres of water resources management, at all levels.	GESI Mainstreaming Guidelines are prepared and	2 Years	-GESI Guidelines for MSPs -GESI Guidelines for water resources development planning, and development	quarterly	<b>Risk:</b> -Low priority in preparing and implementing GESI guidelines

SDG 6.5.1 IWRM Action Plan Stage 2 - Nepal

#	Title of the action	Expected results	Indicators	Target	Means of verification	Verification frequency	Risks and assumptions
	implementation at all levels	-“Leave no one behind”	implemented in all spheres of water resources management		-GESI disaggregated data		-Lack for human and financial resources <b>Assumption:</b> -Financial and human resources become available
<b>Management instruments</b>							
9	<b>Priority Action No. 9:</b> Expand the network of hydro-meteorological stations across the country	-Sustainable management of water resources with the help of sound understanding hydrology and meteorology.	Number of hydrological and meteorological stations in the network with the real time data collection capability.	2-3 Years	-Number of hydrological and meteorological station added to the network	Quarterly	<b>Risk:</b> Lack of financial and human resources  <b>Assumption:</b> DHM is provided with adequate with financial and human resources
10	<b>Priority Action No. 10:</b> Promote citizen’s science in hydro-meteorological monitoring	Local people are directly involved in managing their local water resources.	Number of hydro-meteorological stations monitored by local citizen’s groups across the country.	2 Years	-Number of citizen’s groups formed and trained for collecting hydro-meteorological data -Number of stations monitored by citizen’s groups	Quarterly	<b>Risk:</b> -Lack of trust on the citizen’s groups -Lack of capacity among the citizen’s groups -Lack of fund to support the citizen’s groups <b>Assumption:</b> -Citizen’s groups are adequately trained and funded -Quality of data is upheld
11	<b>Priority Action No. 11:</b> Establish at least one rainfall, snow and temperature station by each local government	Local governments are involved and empowered in water resources management	Number of municipalities (local governments) that establishes and monitors at least one meteorological	3-5 Years	Number of municipalities with meteorological stations established and monitored.	Quarterly	<b>Risk:</b> -Lack of funding to establish and run the meteorological stations -Lack of technical capability and human resources. <b>Assumption:</b>



SDG 6.5.1 IWRM Action Plan Stage 2 - Nepal

#	Title of the action	Expected results	Indicators	Target	Means of verification	Verification frequency	Risks and assumptions
			station within their territory.				-DHM provides the technical support to the local governments -Federal government provides financial support to the local governments.
12	<b>Priority Action No. 12:</b> Develop a mechanism for data sharing by local governments, citizen's groups, CBOs and school and operationalize a national database centre.	A strong database and reliable analysis for better planning and sustainable management of water resource in the country	Institutional arrangement is in place for data flow from local levels to DHM and analysis result from DHM to the local levels.	2 Years	National hydro-meteorological and water quality data centre	Quarterly	<b>Risk:</b> -Maintaining quality of data <b>Assumption:</b> -Capacity building of the local bodies that collects data is effective
13	<b>Priority Action No. 13:</b> Establish baseline status of freshwater ecosystem and aquatic biodiversity	Baseline status of freshwater ecosystem and the ecosystem services are documented	Number of river basins with primary data on baseline freshwater ecosystem and their services	3 Years	-Documentation of baseline data and analysis -database on bio-diversity in river systems	Quarterly	<b>Risk:</b> - Lack of funding <b>Assumption:</b> -Governments gives priority and allocate sufficient financial resources.
14	<b>Priority Action No. 14:</b> Identify and establish indicators for monitoring freshwater ecosystem health.	Easy to record indicators are in place for monitoring the water bodies for their health of freshwater ecosystems in the country.	Number of water bodies that have defined monitoring indicators.	2 Years	Number of water bodies that have defined monitoring indicators.	Quarterly	<b>Risk:</b> - Lack of funding -Lack of capacity and human resource <b>Assumption:</b> -Funding will be made available -Capacity will be developed
<b>Financing</b>							

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#	Title of the action	Expected results	Indicators	Target	Means of verification	Verification frequency	Risks and assumptions
15	<b>Priority Action No. 15:</b> Lobbying and Monitoring the Investments in the IWRM Action Plan	Assured financing of the IWRM Action Plan for strengthening the IWRM implementation components and thus establish a sound foundation for IWRM implementation in the country	Government establishing the IWRM implementing agencies at all the three levels of governments;  Number of priority actions that are financed adequately  Number of priority actions successfully completed on targeted time period	First one year for establishing the IWRM implementing agencies at the three levels of governments  Then continued till all the priority actions are completed	Number of priority actions taken-up, and subsequently the number of priority actions completed	Quarterly	<b>Risks:</b> Delay in establishing the IWRM implementing agencies at federal, province and local governments  Lack of interest in funding by the governments Lack of interest of funding by the international, multi-lateral and bilateral development partners  <b>Assumption:</b> With the completion of the River Basin Management Plans, Government of Nepal would give priority to its implementation  Development partners will fulfill their commitments towards sustainable development goal, climate change mitigation, and other international conventions
<b>Priority areas where IWRM could be demonstrably implemented</b>							
16	<b>Priority Action No. 16:</b> Formulate Policy and Law to implement Integrated River Basin Management Plan	IWRM is implemented effectively though river basin management plans enforced by law and policy.	Policy, Law and institutions are in place for implementing the Integrated River Basin Management Plan	1-2 Years	Policy and law are promulgated by the government to put into effect the river basin management plans	Quarterly	<b>Risk:</b> -Policy and law are not formulated when the river basin management plans are ready.  <b>Assumption:</b> -WECS and MoEWRI expedites the process without any delay.

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#	Title of the action	Expected results	Indicators	Target	Means of verification	Verification frequency	Risks and assumptions
17	<b>Priority Action No. 17:</b> IWRM Implementation guideline for multi-use and inter-basin water transfer projects	Sustainable utilization and equitable distribution of benefits from the water development projects, the core value of IWRM principles	-IWRM implementation guideline is formulated and endorsed for Bheri-Babai Diversion Multipurpose Project.	3 Years	-The IWRM Guideline is in place -The Guideline is followed in the project	Quarterly	<b>Risk:</b> -possibility of ambiguity in implementing guideline due to the limited knowledge and skill <b>Assumption:</b> -Capacity building program is conducted simultaneously
18	<b>Priority Action 18:</b> Initiate and organize Multi-stakeholders' Platform (MSPs) in the CHAL area	Integrated land, water and other natural resources management at local level in the CHAL area	-Number of MSPs in operation in the CHAL area	2-3 Years	Number of CHAL activities with IWRM elements	Quarterly	<b>Risk:</b> -Resistance to joint operation between MoFE and WECS/MoEWRI due to sectoral interests <b>Assumption:</b> IWRM becomes the common thread of cooperation between the two ministries
19	<b>Priority Action No. 19:</b> Integrated Water Resources Management at watershed level in Chure Terai -Madhesh region	Incorporation of IWRM in the President Chure Terai Madhesh Conservation Program for integrated land, surface water and groundwater management	A mechanism is developed and adopted for incorporating IWRM in its ongoing activities	2-3 Years	Number of activities implemented with IWRM elements	Every three Months	<b>Risk:</b> -Lack of understanding and cooperation between PCTMCP and WECS/MoEWRI <b>Assumption:</b> The umbrella IWRM policy brings the two organizations to work together
20	<b>Priority Action No. 20:</b> Integration of IWRM in climate change adaptation and mitigation plans and programs	Sustainable climate change adaptation and mitigation through IWRM	Number of climate change adaptation and mitigation programs implemented with IWRM elements.	2-3 Years	-Degree of IWRM incorporated in the NAPA, LAPA and NCDs	Quarterly	<b>Risk:</b> Possibility of viewing climate change and IWRM as a separate disciplines

## 7. Annexes

### Annex 1: The Composition of the Task Force Team for IWRM Action Plan Preparation.

<b>Name</b>	<b>Designation</b>	<b>Institution</b>
Saraju Kumar Baidya	Joint Secretary	Water and Energy Commission Secretariat
Gokarna Raj Panth	Senior Divisional Engineer	Ministry of Energy, Water Resource and Irrigation
Dr. Santosh kaini	Senior Divisional Engineer	Department of Water Resource and Irrigation
Er. Nisha Rijal	Senior Divisional Engineer	Department of Electricity Development
Rajit Ojha	Senior Divisional Engineer	Department of Water Supply and Sewerage Management
Jebin Tamrakar	Senior Divisional Engineer	Water Resource Research and Development Center
Kamala K.C	Reconstruction and WASH Advisor	Department of International Development
Dr. Nirman Shrestha		International Water Management Institute
Shailendra Guragain	CEO	Sambriddhi Energy Limited
Sriranjan Lacoul		JVS/ GWPO Member
Dr. Kapil Gnawali	Senior Divisional Engineer	Water and Energy Commission Secretariat

## Annex 2: The Agenda of the Consultative Workshop on IWRM Action Plan Preparation, 2 March 2022 (Virtual Platform).



**Stakeholders Consultation (Virtual)**  
on  
**SDG 6.5.1 IWRM Action Plan**  
Wednesday, March 2, 2022 (Falsun 18, 2078)  
Zoom Meeting

**Tentative Programme**



Time	Activity/s	Responsibility
12:15 – 12:30	Arrival of the Participants	
12:30 – 12:40	Introduction of the Participants	
12:40 – 12:50	Welcome and Purpose of the Consultation	Mr. Surya Nath Upadhyay, Secretary General, GWP Nepal/JVS
12:50 – 13:00	<b>Presentation 1: Water Quality Management - IWRM Perspective</b>	Mr. Stuart Warner
13:00 – 13:20	<b>Presentation 2: SDG 6.5.1 proposed IWRM Actions</b>	Dr. <del>Dilpa Ratna Kansakar</del> , Executive Committee Member, GWP Nepal/JVS
13:20 – 13:55	<b>Floor Discussion and Shortlisting of the Actions</b>	Moderator
13:55 – 14:00	Closing of the program	WECS

### Annex 3: List of Participants: Consultative Workshop on IWRM Action Plan Preparation, 2 March 2022 (Virtual Platform)

S.N	Name & Surname	Organisation	Designation/ Position	Type of Actor	Gender
1	Dibya Ratna Kansakar	Jalsrot Vikas Sanstha/ GWP Nepal	IWRM expert	National Government/ Academia	Male
2	Madhusudan Bhattarai	Independent Consultant	Freelancer	Academia	Male
3	Kalanidhi Poudyal	Water and Energy Commission Secretariat	Joint Secretary	National Government	Male
4	Upendra Gautam	CMS Engineering Consult	Freelancer	Private	Male
5	Surya Nath Upadhyay	Jalsrot Vikas Sanstha/ GWP Nepal	General Secretary	National Government	Male
6	Kapil Gnawali	Water and Energy Commission Secretariat	Senior Divisional Engineer	National Government	Male
7	Batu Uprety	Jalsrot Vikas Sanstha/ GWP Nepal	Climate Expert	National Government	Male
8	Ashutosh Shukla	Nepal Engineering College	Independent Expert	Academia	Male
9	Gokarna Raj Pantha	Ministry of Energy, Water Resource and Irrigation	Senior Division Engineer	National Government	Male
10	Sriranjan Lacoul	Former Government Agency	Secretary	National Government	Male
11	Nisha Rijal	Nepal Electricity Authority	Spokesperson	National Government	Female
12	Nirman Shrestha	Institute of Water Management	Consultant	International Organisation	Male
13	Rajesh Sada	WWF Nepal	Head of Fresh Water Program	International Organisation	Male
14	Stuart Warner	UNEP		International Organisation	Male
15	Som Nath Poudel	JVS/ GWP Nepal	Chairperson	NGO	Male

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<b>S.N</b>	<b>Name &amp; Surname</b>	<b>Organisation</b>	<b>Designation/ Position</b>	<b>Type of Actor</b>	<b>Gender</b>
16	Janak Jha	Water and Energy Commission Secretariat	Economist	National Government	Male
17	Tejendra GC	JVS/ GWP Nepal	Country Coordinator	NGO	Male
18	Neha Basnet	JVS/ GWP Nepal	Program Officer	NGO	Female

## Annex 4: Agenda of the Consultative Workshop in Draft IWRM Action Plan, 7 July, 2022



### Stakeholder Consultation Workshop on SDG 6.5.1 IWRM Action Plan

Venue: The Everest Hotel, Naya Baneshwor, Kathmandu

Date: July 07, 2022 Thursday (Asar 23, 2079)

Time: 2:00-5:00 PM

### Draft Program

Session Chair: Mr. Dinesh Kumar Ghimire, Secretary, WECS

Time (PM)	Activity/s	Responsibility
2:00 – 2:15	Arrival of the Participants	Tea, Cookies
2:15 – 2:30	Introduction of the Participants	
2:30– 2:40	Welcome Speech	Mr. Surya Nath Upadhyay, Secretary General, GWP Nepal/JVS
2:40– 3:20	<b>Presentation:</b> SDG 6.5.1 proposed IWRM Actions	Dr. Dibya Ratna Kansakar, EC Member, GWP Nepal/JVS
3:20 – 4:50	<b>Floor Discussion</b>	Moderator
4:50 – 5:00	Closing Remark by Session Chair	Mr. Dinesh Kumar Ghimire, Secretary, WECS
5:00 Onwards	Dinner	



## Annex 5: List of Participants: Consultative Workshop on Draft IWRM Action Plan, 7 July 2022

S.N.	Name	Gender	Organization	Type of Actor	Contact Number
1	Sabina Karmacharya	Female	Ministry of Urban Development	Government	9841450863
2	Ratna Pd. Lamichhane	Male	Ministry of Water Supply	Government	9841454600
3	Hari Bahadur Thapa	Male	Water and Energy Commission Secretariat	Government	9841390417
4	Sneha Bohaju	Female	Jalsrot Vikas Sanstha	Academic	9843531534
5	Ajay Bahu Nayju	Male	CE Construction	Private	9841392138
6	Shisir Bhattarai	Male	Ministry of Home Affair	Government	9852355111
7	Prakash Gaudel	Male	Nepal Electricity Authority	Semi-Government	9851156333
8	Janak Kumar Jha	Male	Water and Energy Commission Secretariat	Government	9849785045
9	Abian Marasini	Male	Water and Energy Commission Secretariat	Government	9860010853
10	Sunder Chaudhary	Male	Water and Energy Commission Secretariat	Government	9851149203
11	Kamal K.C.	Female	British Embassy, Kathmandu	INGO	9801912211
12	Surya Dav Gupta	Male	Water and Energy Commission Secretariat	Government	9851237051
13	Kiran Gautam	Female	Water and Energy Commission Secretariat	Government	9841289920
14	Pawan Chand	Male	Water and Energy Commission Secretariat	Government	9848753655
15	Prakash Shah	Male	Department of National Parks and Wildlife Conservation	Government	9860554706
16	Tripti Kharel	Female	Kathmandu Valley Water Supply Management Board	Semi-Government	9841367337
17	Hari Bar. Khatri	Male	Department of Electricity Development	Government	9840437327
18	Nisha Rijal	Female	Ministry of Federal Affairs and General Administration	Government	9841984201
19	Sabina Kharbuja	Female	Water and Energy Commission Secretariat	Government	9841725525
20	Dr. Kapil Gnawali	Male	Water and Energy Commission Secretariat	Government	9849186890
21	Sangita Shrestha	Female	Ministry of Agriculture and Livestock Development	Government	9851231960
22	Khem Raj Sharma	Male	Nepal Engineering College	Academic	9841471144
23	Aarti Shrestha	Female	Ministry of Law, Justice and Parliamentary Affair	Government	9841262436
24	Sunita Parajuli	Female	National Planning Commission	Government	9841773870

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25	Batu Uprety	Male	GWL Program/JVS	NGO	9841278643
26	Dr. Madhusudan Bhattarai	Male	JVS-Nepal	NGO	9851235925
27	Upendra Gautam	Male	JVS/CMS	NGO	9841234317
28	Sriranjan Lacoul	Male	JVS	NGO	9851023257
29	Gokarna Raj Pantha	Male	ERC	Government	9851083447
30	Shital Babu Regmee	Male	River Basin Planning	Independent Expert	9841523500
31	Som Nath Poudel	Male	JVS/GWP Nepal	NGO	9841205253
32	Laxman Sharma	Male	Asian Disaster preparedness Centre	INGO	9851146931
33	Dinesh Bhatt	Male	IWRMP, DWRI	INGO	9841682402
34	Chetman Budthapa	Male	Farmers Managed Irrigation System Promotion Trust	NGO	9841578667
35	Deepak Gyanwali	Male	Department of Environment	Government	9841379692
36	Surya Nath Upadhyay	Male	JVS Nepal	NGO	9851041112
37	Dibya Ratna Kansakar	Male	Lead Consultant IWRM Action Plan	Consultant	9841056982
38	Dinesh Kumar Ghimire	Male	Water and Energy Commission Secretariat ( Secretary)	Government	
39	Kalanidhi Poudel	Male	Water and Energy Commission Secretariat (Joint- Secretary)	Government	
40	Jeebechh Mandal	Male	Water and Energy Commission Secretariat (Joint- Secretary)	Government	9841312250
41	Shishir Koirala	Male	Water and Energy Commission Secretariat ( Joint -Secretary)	Government	9414446340
42	Rajit Ojha	Male	Department of Water Supply and Sanitation Management Board	Government	9851144920
43	Raunak Shrestha	Male	GWP-SAS	INGO	9841217553
44	Tejendra G.C.	Male	GWP Nepal	NGO	9851154333
45	Neha Basnet	Female	JVS/GWP Nepal	NGO	
46	Yuba Raj Karki	Male	JVS	NGO	
47	Bharat Kumar Sapkota	Male	JVS Nepal	NGO	
48	Samundra Sigdel	Male	Farmers Managed Irrigation System Promotion Trust	NGO	