

NATIONAL RAMSAR STRATEGY AND ACTION PLAN, NEPAL (2018-2024)



Government of Nepal
Ministry of Forests and Environment

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List of contributors

Dr. Maheshwar Dhakal, Chief, Environment and Biodiversity Division, Ministry of Forest and Environment
Mr. Krishna Prasad Acharya, Director General, Department of Forest
Mr. Man Bahadur Khadka, Director General, Department of National Parks and Wildlife Conservation
Mr. Dhananjaya Lamichhane, Under Secretary, Ministry of Forest and Environment
Dr. Bishnu Bhandari, Wetland Expert
Dr. Shant Raj Jnawali, Chief of Party, WWF Nepal, Hariyo Ban Program
Dr. Kanchan Thapa, Technical Advisor, WWF Nepal, Hariyo Ban Program
Mr. Kapil Khanal, Sr. Program Officer, WWF Nepal, Hariyo Ban Program
Mr. Suman Dhakal, Program Officer, WWF Nepal, Hariyo Ban Program
Mr. Rajesh Sada, Fresh Water Lead, WWF Nepal
Dr. Deep Narayan Shah, Wetland Expert, Tribhuvan University
Dr. Ram Devi Tachamo Shah, Aquatic Ecologist, Kathmandu University



Government of Nepal

Ministry of Forests and Environment

Ph. { 4211567
4211892
4211928
4211936
4211742
4211862
Fax. 4211868

Ref. No.

P.O.Box No. 3987
Singha Durbar, Kathmandu

Date :-



Foreword

Nepal is rich to wetland and its resources. These wetlands are distributed across the country. They have enormous ecological, economic, social and cultural values. Around 5.5% of the country's land is covered by various types of wetlands. As of 2018, ten wetlands of having international importance have been enlisted in the Ramsar Site. Nepal is working as party of Ramsar Convention since 1988. The Koshi Tapu Wildlife Reserve is the first Ramsar Site while the Lake Cluster of Pokhara Valley is the latest one. The Government of Nepal also formulated a national wetland policy in 2003 and it has been revised in 2012, which is under implementation though it needs to be revised following the three tires of the federal government. The National Biodiversity Strategy and Action Plan (NBSAP)-2014-2020 has also recognized wetland ecosystems as one of the most important areas of biodiversity.

The fourth National Ramsar Strategic Plan (2016-2024) was adopted in the 12th conference of the Parties in 2015. The National Ramsar Strategic Plan of Nepal (2018-2024) is based on the template provided by the Ramsar Secretariat. The plan envisioned to conserve, wise use, restore and ensure benefits to local communities. It has five objectives namely conserve and manage the Ramsar site network, manage wetlands including the Ramsar site at the footprint of wisely use principle, engage federal, state and local stakeholder and capacitate them for the wetlands & Ramsar sites conservation, enhance the Ramsar implementation through the national & international cooperation; and monitor and evaluate the implementation of the National Ramsar Strategy and Action Plan. An institutional framework is also suggested to implement this strategy while funding leverage is expected from both state and non-state partners including activities participation of local communities.

I am confident that this strategic plan will provide a clear guidance to conserve and enhance the Ramsar listed wetlands of Nepal. The effective implementation of the strategy and action plan will depend on the level of ownership of three tires of the governments, and partnership and coordination among the stakeholders. I do hope that the successful implementation of this strategic plan will be an important policy tool to conserve, manage and wise use of the wetland resources of Ramsar sites of Nepal. Finally, I would like to share my sincere thanks to Dr. Maheshwar Dhakal and his team members for leading the task, and USAID funded Hariyo Ban Program for providing generous financial and technical support.

Bishwa Nath Oli, PhD

Secretary

ABBREVIATIONS & ACRONYMS

CEPA	Communication, Education, Participation and Awareness
CODEFUND	Conservation Development Foundation
CSUWN	Conservation and Sustainable Use of Wetlands in Nepal
DNPWC	Department of National Parks and Wildlife Conservation
DOA	Department of Agriculture
DoF	Department of Forests
DoT	Department of Tourism
DSCWM	Department of Soil Conservation and Watershed Management
GDP	Gross Domestic Product
GoN	Government of Nepal
IAS	Invasive Alien Species
ICIMOD	International Center for Integrated Mountain Development
ILBM	Integrated Lake Basin Management
IRBM	Integrated River Basin Management
IUCN	International Union for Conservation of Nature
KTWR	Koshi Tappu Wildlife Reserve
MoCTCA	Ministry of Culture, Tourism and Civil Aviation
MoALMC	Ministry of Agriculture, Land Management and Cooperatives
MoFE	Ministry of Forests and Environment
MoFSC	Ministry of Forests and Soil Conservation (now MoFE)
MoFAGA	Ministry of Federal Affairs and General Administration
MoEWRI	Ministry of Energy, Water Resources and Irrigation
MoICT	Ministry of Communication and Information Technology
MoPIT	Ministry of Physical Infrastructure and Transportation
MoUD	Ministry of Urban Development
MoDW	Ministry of Drinking Water
NARC	Nepal Agricultural Research Council
NBSAP	Nepal National Biodiversity and Action Plan (2014-2020)
I/NGO	International/Non-Governmental Organization
NLCDC	National Lake Conservation Development Committee
NPC	National Planning Commission
NPR	Nepali Rupees
NWP	National Wetland Policy 2012
PAs	Protected Areas
PES	Payment for Ecosystem Services
REDD++	Reducing Emission from Deforestation and Forest Degradation
RLRFC	Rupa Lake Restoration and Fishery Cooperative
US\$	United States Dollar
WECS	Water and Energy Commission Secretariat
WWF	World Wildlife Fund Nepal
ZSL	Zoological Society of London

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PREAMBLE

In many respects, wetlands are amongst the most productive ecosystems in the world. In Nepal, they occur in diverse ecological zones from highland Himalayas to low land Terai. In 1988, Nepal became a signatory to Ramsar convention which highlighted Nepal's commitment to conservation of wetlands. However, the wetlands had been neglected for long even though they have social, economic, religious, and touristic significances.

The occurrence of wetlands across diverse ecological zones in Nepal have made vulnerable to few common and region-specific threats. Of late, Ramsar sites including many other wetlands have been subjected to habitat loss and degradation. Such problem could not be addressed due to lack of Ramsar Strategy and Action Plan in Nepal. This is also equally important in the ongoing federal context in Nepal as there is lack of clarity in the roles and responsibilities of each administrative units. Thus, a National Ramsar Strategy and Action Plan had been a requisite for conservation of wetlands and particularly for the conservation of Ramsar sites in Nepal. In this view, the National Ramsar Strategy and Action Plan (2018-2024) has been prepared.

The methodology used in the policy document mainly follows four-pronged approaches. These include extensive review of existing literatures, consultative meetings and workshops, sharing meeting, andlastly review of the draft policy document with experts.

National Ramsar Strategy and Action Plan (2018-2024) covers the background of wetlands including Ramsar sites management practices in Nepal; the existing institution, policies and practices for Ramsar Implementation in Nepal; strengths, weaknesses, opportunities, and threats analysis and finally the Ramsar Strategic Plan of Nepal. Likewise, the report outlines the National Ramsar goals and key actions with relevant tools, actors, baselines and indicators in Nepal. It considers thirteen priority areas for the next seven years much like the priority areas of the Ramsar Convention. National Ramsar Strategy and Action Plan (2018-2024) represents the first strategy and action plan for conservation of Ramsar sites in Nepal and is congruent with both the Sustainable Development Goals and the Aichi Biodiversity Targets.



BACKGROUND

1. 1 Understanding Wetlands

At the footprint of the Ramsar definition, National Wetlands Policy (NWP 2012) of Nepal defines wetlands as “perennial water bodies that originate from underground sources of water or rainfall. It means swampy areas with flowing or stagnant fresh or salt water that is natural or man-made, or permanent or temporary. Wetlands also mean marshy lands, riverine floodplains, lakes, ponds, water storage areas and agricultural lands”. Of 42 wetlands categorized by Ramsar, Nepal does not have coastal and marine wetlands (IUCN 2004) but holds 19 types of natural and 10 types of man-made inland wetlands (Siwakoti 2007). Hydrologically, Nepal’s wetlands are considered the Himalayan wetlands irrespective to any sizes and

geography because each drop of water any wetlands receive has link with the water dynamics of the Himalaya (Pokharel and Nakamura 2012).

1. 2 Nepal’s Response to the Ramsar Convention

Nepal has a long history of the wetlands conservation associated to the culture, tourism and forests management. Nepal joined to the Ramsar Convention in 1971 (hereafter as Convention); ratified the Convention on April 17, 1988; designated the Koshi Tappu as Nepal’s the first but 384th wetlands of international significance globally regarded as the “Ramsar Site” (HMGN/MFSC 2003); and became the 46th Contracting Party of the Convention. After 28 years of member

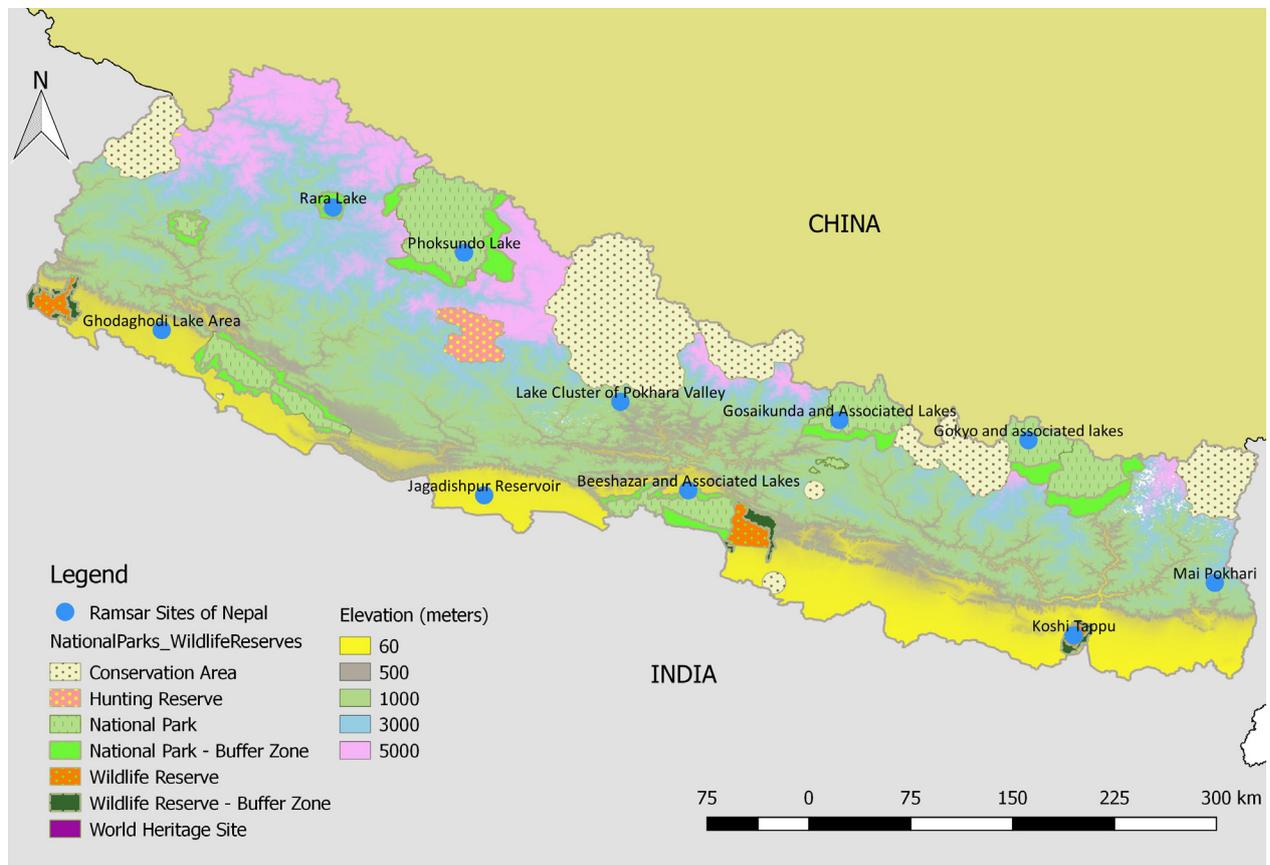


Figure 1: Spatial Distribution of Ramsar Sites in Nepal

state of the Party, Nepal is one of the existing Standing Committee Members of the Convention (2015-2018).

In compliance with Article 2.1 of the Convention, and Articles 4.1 and 5.1.5 (*KHA* and *GA*) of NWP (2012) makes the provisions of exploring wetlands for their designation in the Ramsar list. Of this, four are in the Terai lowlands, two in mid-hills, and four in Himalayan regions respectively. The Mai Pokhari is the smallest, and Lake Cluster of Pokhara Valley is the largest Ramsar sites in Nepal (Table 1, Figure 1). In total, Nepal's Ramsar sites contribute 0.025 percent (surface area) to the global target of the Ramsar sites. As of 2017, 60,561 hectares of wetlands are listed under the Ramsar convention (Ramsar 2017).

Further, Nepal's National Biodiversity Strategy and Action Plans (2014-2020) recommends for the inclusion of additional 5 wetlands in this list by 2020. With the designation of Lake Cluster of Pokhara Valley in 2016, Nepal next target is to explore additional 4 wetlands for the Ramsar designation.

1.3 Extent and Coverage of Wetlands in Nepal

Nepal's wetlands include rivers; lakes; reservoirs; ponds; marshy lands and irrigated paddy fields (Table 2) and covers ~ 5% of total area of Nepal with a huge water storage capacity of 225 billion m³ (Water Resource Strategy 2002).

Table 1: Ramsar Sites of Nepal (Source: Ramsar Information Sheet 2017)

S.N.	Sites	Zone	Province	Altitude (m)	Area (ha)	Date	
						Designation	Ratification
1	Koshi Tappu	Terai, lowland	2	90	17,500	1987/12/17	2003/08/13
2	Ghodaghodi Lake Area	Terai, lowland	7	205	2,563	2003/08/13	2003/08/13
3	Jagadishpur Reservoir	Terai, lowland	4	195	225	2003/08/13	2003/08/13
4	Beeshazari and Associated Lakes	Terai, lowland	3	285	3,200	2003/08/13	2003/08/13
5	Rara Lake	Himalayas	6	2990	1,583	2007/09/23	2007/09/23
6	Phoksundo Lake	Himalayas	6	3610	494	2007/09/23	2007/09/23
7	Gosaikunda and Associated Lakes	Himalayas	3	4700	1,030	2007/09/23	2007/09/23
8	Gokyo and Associated Lakes	Himalayas	3	5000	7,770	2007/09/23	2007/09/23
9	Mai Pokhari	Midhills	1	2100	90	2008/10/20	2008/10/20
10	Lake Cluster of Pokhara Valley	Midhills	4	827	26,106	2016/02/02	2016/02/02

Table 2: Extent of Wetlands in Nepal

S.N.	Wetlands	Estimated Area (ha)	Percentage (%)
1	Rivers	395,000	48.2
2	Lakes	5,000	0.6
3	Reservoirs	1,500	0.2
4	Marshy Lands	12,500	1.5
5	Ponds	7,277	0.9
6	Irrigated Paddy Fields	398,000	48.6
	Total	819,277	100.00

(Source: Directorate of Fisheries Development, Kathmandu, Nepal (DoFD 2012))

1. 4 Importance of Wetlands

Wetlands are one of the most productive ecosystems with important ecological, cultural and economic significances, and are instrumental for health; welfare; safety; and the sustainability of both the ecosystem and communities. These are the major podium for most of rural communities, for example 10% of ethnic communities, depended on wetlands resources for the subsistence in Nepal (IUCN, 2004; MoAD, 2015).

1.4.1 Species diversity

The Nepalese wetlands including Ramsar sites harbor many threatened and endangered flora and fauna and provide excellent ecological habitats for internationally important winter migratory birds, aquatic fauna and other wildlife. They harbor at least 230 indigenous fish species with 104 genera having higher economic, environmental and academic values; whereas 6 endemic species (Rajbanshi,

2013). Further, they hold 102 species of phytoplankton; 109 species of zooplanktons; 192 species of mollusks and 117 species of amphibians (IUCN, 2004; ICIMOD and MoEST, 2007; Budha, 2012; NBSAP, 2014). 27% of nationally threatened birds' species (BCN and DNPWC, 2010); 85 percent of endemic vertebrates (IUCN, 2004) and about 24% of Government protected plants are known recorded from wetlands. Rice that plays major role in agriculture in Nepal has its wild cultivar like *Oryzanivara*, *O. granulata*, *O. officinalis*, *O. sativaf. spontanea*, and *O. Rufipogon* from wetlands of Koshi Tappu, Rupandehi, Kapilvastu, and Palpa (CSUWN, 2010). Similarly, Relict Himalayan dragonfly (*Epiophlebia laidlawi*), Near-Threatened insect, is wetlands dependent (IUCN, 2006).

1.4.2 Provisional services

Wetlands including Ramsar sites provide a wide range of provisional services. Over 85% of Nepal's agrarian communities relies on wetlands resources for food; fodder;

Table 3: Wetland Ecosystem Services

Relevance	Services	Description - Functions
Water Quantity and Quality – Lake Eutrophication	Water Regulation	Regulation of water flows, which entrains pollutants and purifies water – Regulating
	Water Supply	Filtering, retention, and storage of fresh water – Provisioning
	Erosion Control	Maintains arable land and prevents water silting by lowering soil losses by wind and sediment retention and runoff – Regulating
	Waste Treatment	Removal, breakdown, or abatement of pollutants – Regulating
Climate Change	Atmospheric Regulation	Regulation of atmospheric compositions by various processes such as carbon sequestration– Regulating
	Climate Regulation	Influence of land covers on climate (temperature, precipitation etc.) – Regulating
Biodiversity	Biological Control	Control of populations, pests, and diseases through trophic-dynamic processes – Regulating
	Habitat/Refugia	Suitable living space for species to evolve and breed – Supporting
Material Benefits	Food Production	The conversion of solar energy into edible plants and animals suitable for human consumption. Growing rice both in summer and spring season fish farming. – Provisioning
	Raw Materials	Conversion of solar energy into materials suitable for construction – Provisioning
	Genetic Resources	Genetic evolution in plants and animals – Provisioning
Social Well-being	Disturbance Prevention	Dampening of environmental disturbances such as storm protection and flood prevention – Regulating
	Recreation	Opportunities for recreation, relaxation, and refreshment – Cultural
	Cultural	Spiritual, religious, historical, and symbolic values – Cultural
Environmental Integrity	Soil Formation	Rock weathering and organic matter accumulation leading to the formation of productive soils– Supporting
	Nutrient Cycling	Storage processing and acquisition of nutrients within the biosphere – Supporting
	Pollination	Movement of plant genes for reproduction – Supporting

(Source: Voora and Venema, 2008)

fiber; folk medicine; navigation; fishery; mine; gene etc. Irrigated paddy fields are the major source of staple food, for example Nepal makes 5.23 MT of rice production in the fiscal year 2016/17 (MoAD, 2017). The traditional fishing engages about 10% of ethnic communities, and modern fishery is growing, and Nepal's dependency in importing fish has been declined. Sustainable management enhances wetlands' productivity and improve supply of timber; vegetable oil; medicinal plants; fodder; and stems and leaves for weaving materials.

Use of wetlands resources greatly differs along altitudinal gradients as illustrated in Table 5 (Lamsal *et al.*, 2017), so these are understood in different perspectives among highlander and lowlander communities in Nepal.

1.4.3 Cultural services

Wetlands are the divine factor in all religious-cultural sectors like Hinduism, Buddhism, Muslim etc. in Nepal. Water bodies are the abode of the God *Barun* in the Hinduism. Ponds, lakes, and rivers are the backbone of the *Mithila* culture, and *Chhat puja* (devote to the Sun). Many water bodies are holy and pilgrimage centers for the Hindu and Buddhist such as the Pashupatinath at the shore of Bagmati River, Shalinadi, Gosainkunda, and Panchpokhari

(Sindhupalchowk) etc. Shivaganga Tal of Bara is visited by more than 100,000 people annually mainly in *Shrawan* and *Shivaratri*. Likewise, Ghadiarwa Tal of Parsa district is visited by around 500,000 people annually during *Chhat* (DoF, 2017). Further, they have aesthetic/ecotourism, spiritual, recreational, inspirational, and educational values. It has inspired art and literature and contributed to the development of human knowledge. These non-material benefits remain non-quantifiable.

1.4.4 Regulating services

Wetlands regulate water quality and quantity, recharge groundwater, retain nutrients, control landslides, and prevent inundation (WI, 2017). Wetlands helps controlling soil erosion and sediment transport thereby contribute to land formation and increase resilience to storms. Wetlands plants detoxify chemical fertilizers, pesticides, heavy metals, and toxins.

1.4.5 Supporting services

Wetlands enhances primary productivity of ecosystems that in turn lead to other provisional, cultural and regulating services. They are natural buffers mitigating climate induced water disaster, and cope against climate adversities i.e., dryness and desertification. These are

Table 4: Example of the Ecosystem Services Provided by Wetlands

Regulating Services	Supporting Services
Flood Control and Soil Erosion Prevention	Soil Formation
Water Regulation	Nutrient cycling
Water Purification and Waste Treatment	Habitat services
Climate Regulation	Provisioning Services
Cultural Services	Food
Energy Production	Freshwater
Research and Education	Fiber and Fuel
Spiritual and Aesthetic Significance	Bio-chemical (NTFP etc.)
Tourism and Recreation	Genetic Materials

Table 5: Wetlands Uses at Altitudinal Gradients in Nepal.

Wetland types	Wetland uses					
	Aquatic Food	Drinking Water and Irrigation	Fuel, wood, timber, medicinal	Tourism	Livestock Grazing	Religious and Cultural
High altitude wetlands	+	+	++	+++	+	+++
Midhills wetlands	++	++	+++	++	++	+++
Lowland wetlands	+++	+++	+++	+	+++	+++

+ Low, ++ Medium, +++ High
(Source: Lamsal *et al.*, 2017).



People celebrating Chhath Puja © Gagan Thapa

good carbon sink ecosystems, for example peatlands sink as twice carbon as to natural forests' biomass (Joosten and Couwenberg, 2008). As landscape and habitat, they regulate species diversity of >0.1 million

known freshwater species. Almost all water birds are known to feed and bred on wetlands. Few classic examples of the wetland services are provided in table 6.

Table 6: Example of Wetland Services from Nepal

S. No	Type of Wetland Services	Examples in Nepal
1	Regulating	Beeshazari and associate Lakes: Regulating flow in Khageri river in controlling flood
2	Cultural	Gosainkunda and associated Lakes: Culturally rich according to Hindu mythology, Lake Cluster of Pokhara Valley: Rich in tourism and recreational value
3	Provisioning	Jagadishpur reservoir: Reservoir provides an irrigation services to a large command area measuring 6070 ha.
4	Supporting	Koshi Tappu and Beeshazari and associated lakes: Supporting wetland habitat for birds and aquatic wildlife.



INSTITUTION, POLICIES AND PRACTICES FOR RAMSAR IMPLEMENTATION

2.1 Existing Institution

The Ministry of Forests and Environment (MoFE) is the focal ministry for all wetlands with the Department of National Parks and Wildlife Conservation as the Ramsar Administrative Authority in Nepal (DoF, 2017). Wetlands are interwoven in other ministries and commissions like Ministry of Agriculture, Land Management and Cooperatives; Ministry of Education, Science and Technology; Ministry of Energy, Water Resources and Irrigation; Ministry of Industry, Commerce and Supplies; Ministry of Federal Affairs and General Administration; Ministry of Culture, Tourism and Civil Aviation; National Planning Commission (NPC); and Water and Energy Commission Secretariat (WECS). Other institutions such as Department of Forests (DoF); District Forestry Sector Coordination Committee (DFSCC); National Lake Conservation Development Committee (NLCDC); Metropolis; Sub-Metropolis; Urban Municipality and Rural Municipality are also making investment in wetlands including the Ramsar sites. A National Wetland Coordination Committee (NWCC) under MoFE with representation of key wetland impacting sectoral ministries is in place.

IUCN Nepal is an intergovernmental body assisting government for wetlands conservation. International Center for Integrated Mountain Development (ICIMOD) is regional institution for knowledge development and sharing on mountain environment including wetlands. WWF Nepal, ZSL Nepal, National Trust for Nature Conservation (NTNC), Bird Conservation Nepal (BCN) collaborated with the MoFE for restoration and conservation in the Ramsar sites. Universities, Nepal Academy of Science and Technology (NAST) and research institutions like National Agricultural Research Center (NARC), Research Centre for Applied Science and Technology (RECAST) and Nepal Forum of Environmental Journalists (NEFEJ) are active in knowledge generation and dissemination. Similarly, many grassroots organizations are active in management of wetlands in Nepal.

2.2 Policy/legal Instruments

The Constitution of Nepal 2015 ensures devolution of wetlands to the federal structure. There exists many

strategies and policies that guide wetlands management in Nepal such as the National Biodiversity Strategy (2002), Hydropower Development Policy (2002), Water Resource Strategy (2002), National Agriculture Policy (2004), National Water Plan (2005), Tourism Policy (2009), National Industrial Policy (2011), Climate Change Policy (2011), Irrigation Policy (2013), National Energy Strategy of Nepal (2013), National Agriculture Development Strategy (2014), National Land Use Policy (2015), Forest Policy (2015), Forestry Sector Strategy (2016), National Urban Development Strategy (2017), National Mineral Resource Policy (2017) etc. However, the National Wetland Policy (2012), National Biodiversity Strategy and Action Plan (2014-2020), and Nature Conservation National Strategic Framework for Sustainable Development (2015) are the most proactive guiding document for the wetlands implementation in Nepal. At the setting of these strategies/policies, over two dozen of Acts prevail, and the most relevant to wetlands among these are Aquatic Animal Protection Act (1960), Soil and Watershed Conservation Act (1982), Mines and Minerals Act (1985), Pesticide Act (1991), Water Resources Act (1992), and Solid Waste Management Act (2011). Few environmental standards and guidelines that relate to wetlands prevail such as Nepal Water Quality Guidelines (2005); Industry Specific Tolerance Limits for Industrial Effluents to be Discharged into Inland Surface Waters for Tannery, Wool Processing, Fermentation, Vegetable Ghee and Oil, Paper and Pulp (2001), Industry Specific Effluents Standards to be Discharged into Inland Surface Water for Dairy, Sugar, Cotton, and Soap Industries (2003), Generic Effluents Standard for Discharging into Open Sewerage (2003), Generic Effluents Standard to be Discharged from Treatment Plant to Inland Water (2003), and Generic Standard Tolerance Limits for Industrial Effluents to be Discharged into Inland Surface Waters (2008) etc.

2.3 Practices

2.3.1 Integrated Watershed Management Approach

Nepal's Tenth Five-Year Plan (2002-2007) has prioritized integrated watershed management approach for

conservation of water and soil. The plan has identified importance of coordination among agriculture and water resources for social and economic growth while balancing the environment. This has been continued through 14th plan linking to sustainable development.

2.3.2 Integrated Water Resource Management Approach

The Government of Nepal (GoN) introduced integrated water resource management (IWRM) approach with long-term, medium-term and short-term targets as a principle theme for water resource development in Water Resource Strategy (WRS) in 2002. The National Water Plan (NWP, 2005) was also prepared to implement the strategy. However, due to lack of cross-sectoral coordination in the governmental agency and financial resources, implementation of IWRM as envisioned in NWP and WRS becomes partially dysfunction (Suhardiman *et al.* 2015). Till date, no specific program exists for execution of IWRM which could be critical for conservation and wise-use of the water resources. WECS in partnership with WWF-Nepal piloted integrated river basin management (IRBM) in the Koshi River basin aiming at optimum use of the basin's water and its resources for socio-economic benefits of people while maintaining the ecological balance.

2.3.3 Integrated Lake Basin Management Approach

Nepal through NLCDC/GoN and CODEFUND has gained learning about lake conservation from the implementation of Integrated Lake Basin Management (ILBM) approach. ILBM is a prescription to improve governance for the sustainability of lake basin environment applicable to all wetlands. Nepal has draft plans of Lake Cluster of Pokhara Valley, Gaidahawa lake, and Rajarani lake (Dhankuta).

2.3.4 Cooperative Management of Lakes

The management of few wetlands are successful to consolidate communities' actions under cooperative, for example Rupa Lake Restoration and Fishery Cooperative (RLRFC), and Khaste-Neureni Lake Cooperative. Both the lakes (Rupa and Khaste-Neureni) are complements of Lake Cluster of Pokhara Valley, the Ramsar site.

2.3.5 Payment for Ecosystem Services

Articles 4.6, 4.8 and 4.10 of NWP (2012), Nepal government piloted payment of ecosystem services (PES) project in the Panchase Area located at the confluence of Kaski, Parbat and Syangja districts. Prior to it, RLRFC practiced PES for the equitable distribution of wetlands

benefits to up-and-downstream communities. National Forest Policy (2015) and Forest Act (1993, amended) have provisioned PES in all kind of forest goods and services including wetlands. Three-Year-Plan (2016) accepts PES as one of the strong operational strategies in forestry sector. The importance of PES is being internalized in Nepal that may have wider application in the trade/commerce of wetlands particularly to water supply and hydropower companies; irrigation; tourism; industries etc. (ICIMOD, 2011). However, Nepal still seeks to enhance clear understanding and policy framework for PES for larger stake in equity distribution. In the context of federal system, this system will be ensured and operationalized upon the formulation of local level rules and regulations.

2.4 Wetlands Economics

Economic valuation of wetlands in the world is estimated US\$ 14 trillion annually (Costanza *et al.*, 1997). Every dollar spent on wetlands restoration returns almost double the economic activities. Such economic value provides government and communities to prioritize planning for enlarging benefits from wetlands as integral to the sustainable development. The national accounting system does not value the benefits and services provided by wetlands in Nepal (MoFSC, 2014). However, a few Ramsar sites like Phewa lake of Pokhara, Koshi Tappu, and Jagadishpur Reservoir have economic evaluation of US\$ 43 million (Kanel, 2010), US\$ 16 million (Sharma *et al.* 2015) and US\$ 1 million (Baral *et al.* 2016) respectively, and each household are willing to pay for community based conservation at an average of US\$ 5.4 per annum (Lamsal *et al.* 2015a) and such investment ensures benefits worth of US\$ 63 per annum (Lamsal *et al.* 2015b). With respect to wetlands contribution to GDP and communities' willingness to pay, Nepal further needs to quantify and value wetlands benefits and services.

2.5 Social and Gender Inclusiveness

Wetlands are the food basket and income generating resources for many marginal and indigenous communities such as *Majhi* and *Jalahari* (fishermen), *Jhagad*, *Tharu*, and *Mallah* etc. in Nepal (IUCN 2004). Nevertheless, their voices in wetlands management are little heard of. This strategic plan emphasizes and mainstreams the provisions of Article 4.7, 5.2.10 and 5.2.11 of the National Wetlands Policy (2012) to recognize the promotion of traditional knowledge, skills, and wetlands practices inclusive to the wetlands dependent communities and gender equity in planning and management of wetlands to improve their wellbeing from the enterprises and businesses.

THREATS, ISSUES, AND PRIORITY AREAS

3.1 Loss/degradation of Wetlands

There has been a decrease of 5.41% of the total wetland coverage mainly due to expansion of croplands in Nepal (NBSAP, 2014; Li *et al.* 2017). Major drivers of degradation are unclarity on policies and management responsibilities, inadequate technical, financial and institutional capacities, and population growth and their increasing demand for resources. Other proximate drivers as referred by MoFSC (2014) are encroachment (drainage, agriculture, settlement and infrastructure development), extraction and diversion of water for irrigation, invasion of alien species, siltation, overharvest of resources including commercial fishery, and changes in landuse especially in agricultural lands and urban infrastructures. Addressing these drivers are urgent which may have implications in the Ramsar sites.

3.2 Invasive Alien Species

Invasive Alien Species (IAS) are known to lead to the fragmentation, destruction, alteration and even the complete replacement of habitats often resulting in consequences to the functional collapses of the native ecosystem. They are recognized as the 2nd greatest threat to the biodiversity in homogenizing the world's flora and fauna, and widely known to be one of the major agents of changing native biodiversity (Mack *et al.* 2000; MEA, 2005) resulting to enormous economic losses (Czech and Krausman, 1997; Wilcove and Chen, 1998; Mooney and Hobbs, 2000; GISP, 2004). In Nepal, 25 species are acknowledged as IAS threatening to the native biodiversity (Siwakoti *et al.* 2014; Siwakoti and Shrestha, 2014, Shrestha, 2016). Nepal also cultured 27 alien animal species (Budha, 2013) including 11 fish and freshwater prawn species for aquaculture (MoFSC, 2014a). Several adversities on environment due to IAS have been experienced such as habitat alternation and species composition in ecosystems in the Terai, Siwaliks and Midhills (Tiwari *et al.*, 2005; Siwakoti *et al.*, 2014). For example; water hyacinth (*Eichhornia crassipes*), *Ipomoea carnea* and *Mikania micrantha* in the Terai wetlands. *M. micrantha* as climber infested in the Terai and Siwaliks spreading fast over forest canopy, and blocked sunlight eventually killing native plants and/or stunt their growth

(MoFSC, 2014). There manifestations are already visible in KTWR, Chitwan valley and are spreading further in the westward direction in Nepal. *Mikania* in Chitwan National Park significantly reduced biomass production of rhino's food plants (Subedi, 2013). Of 101 natural lakes in Kailali district, 80 sites are known to practice exotic fish farming (DOFD, 2012).

3.3 Climate Change Effects

Unprecedented flashfloods (in Darchula in 2013), extreme droughts (in Bajura, Humla and Mugu in 2016), altered phenological behavior of plants and animals, altitudinal shift of aquatic habitats (for *Epiophlebia laidlawi*) and an outburst of pathogens are few examples of an events induced by climate change. These are known to have consequences on communities' livelihoods and overall development process. An altitudinal band between 2900 and 3500m asl in Nepal is very responsive climate sensitive zone for the freshwater (Tachamo Shah *et al* 2015). Ice melting has increased phenomenally as a result many glacial lakes started to retreat, shallowed wetlands to swamp and small wetlands to disappear. In the last two decades in Sagarmatha National Park, temperature increase has led to some glaciers retreating while others are advancing and snow cover reducing water sources in the dry season. (Khanal *et al.* 2012). Therefore, GoN has recognized climate change as the serious concern, and responded through policy framework like National Adaptation Program of Action (NAPA) and Local Adaptation Plans of Action (LAPA).

3.4 Inadequate Knowledge and Science-based Information

Available information about wetlands is limited to species and ecosystem levels. Ecosystem structures and function such as freshwater biodiversity; eco-hydrology; energy flow and food web; bio-geochemical cycle; environmental flow; economics of ecosystem biodiversity; climate change dynamics; wetlands modelling; ecological health etc. are poorly documented (MoFSC, 2014). Status of peatlands as they are store house of soil carbon as twice as much as all forest combined are yet not available in Nepal. Investment in conclave, conference and symposium on wetland related

issue is meagre. Whatsoever information available are scattered and scanty. Interventions that yet made are based on discretion among wetlands managers rather than science driven. As a result, wetlands monitoring including the Ramsar site is weak, and stakeholders are tended to underestimate significance, and large areas have been drained for agriculture, pastoralism and forestry.

3.5 Wise Use of Wetlands

The 'wise use of wetlands' is the core concept orienting the work of the Ramsar Convention that refers as "the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development" (Ramsar, 2016). Nepal gained experience to intervene this concept through the Conservation and Sustainable Wise Use of Wetlands Resource initiative (2007-2012). Government further opts this notion of wise use in compliance with objective 3.3.2 and operational strategy 5.2 of NWP (2012). Wise use is heart of this strategic plan.

3.6 Communicating Ecosystem Functions and Services

Communicating wetlands ecosystem functions and their services among diverse sectors and stakeholders including decision makers and the wider public is the key to mainstream in the national planning and implementation of wetlands in Nepal. This will enhance understanding of the contribution of wetland values to people's livelihoods and health, economic development and biodiversity and water.

3.7 Identifying and Designating, the Most Important Wetlands as Ramsar Sites

Operational strategies (5.1.1-5.1.5) in NWP (2012) provide directions for the inventory; categorization and implementation of wetlands based on threat levels and importance. NBSAP (2014-2020) also identified inventory and researches to assess the status and trends of change in wetlands and wetlands biodiversity targets achievable by 2017. Though, the status of wetlands is still a big gap. This Plan completes this information gap and double the coverage of wetlands and their basins by 2024.

3.8 Interstate Municipal and Metropolis Wetlands

Few wetlands, whatsoever their status, may have their cross-border shared between one or more than states; municipalities; sub-metropolis; and metropolis under the recent federal structure of Nepal. Status of such wetlands need to be explored; documented, values estimated; and appropriate measures for sustainable and wise use adapted.

3.9 Transboundary Wetlands

Nepal's all wetlands directly or indirectly contribute to the major tributaries of Koshi, Narayani, Karnali, and Mahakali rivers in Nepal. Few of these rivers originate from China, ultimately drain into the Ganga River in the downstream India. Koshi River – the Koshi Tappu in Nepal is the Ramsar site, but other rivers are not yet observed from the lens of global significance except few studies conducted on the Gangetic river dolphin in Karnali, Narayani, and Koshi. The status of few shallow lakes and marshland in Nepal's Terai such as the Paklihawa in Rupandehi district and Tulashid-di-Hawain Kapilvastu district which are at the cross-roads between Nepal-India border may have transboundary values in terms of wetlands biodiversity.

3.10 Implementing the Convention

MoFE and its departments (DNPWC, DoF, and DSCWM) are the key stakeholders in wetlands with DNPWC as the Ramsar Administrative Authority. Water use aspects however are built within many sectors such as fishery; irrigation; energy; drinking water; agriculture etc. Scope of DNPWC as the Ramsar Authority to implement Convention is limited within PAs, whereas other departments and local level governments have their scope restricted outside PAs. In this context, the department should look over wetlands and fully acting as the Ramsar Authority is realized to implement the Convention.

3.11 Synergies at National Level

The wise use of wetlands and their resources involves a range of actors at local, state, and federal levels. The review of NPW and all cross-cutting legal instruments in view of these structural change is urgent. Hence, this Plan reviews NPW (2012), mainstreams wetlands into sectoral policies and formulate Wetlands Act, and synergy maintained through effective coordination, shared strength and partnering energy/inputs from other sectors such as agriculture; fishery; energy; irrigation etc. Further, the Plan opens the avenues for the public and private investment including academia, media, and non-governmental organizations. So that they all forge to enhance implementation of the Convention and reverse the trend of loss and degradation of wetlands.

3.12 International Cooperation

Nepal is privileged of sharing hydro-dynamics of the Palearctic and Indo-Malayan having China and India around it as neighboring states. Further, Nepal is one of the active countries obliged to regional and international, and multilateral and bilateral agreements. With these, this Plan mainstreams the vertex of Ramsar Convention with all the measures herein corresponding to the targets of Convention on Biological Diversity (CBD), Aichi, the Convention on International Trade in Endangered

Species of Wild Fauna and Flora (CITES), Convention on Migratory Species (CMS), World Heritage Center (WHC), International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Framework Convention on Climate Change (UNFCCC), United Nations Convention to Combat Desertification (UNCCD), Sendai framework, Sustainable Development Goal, regional and global Multilateral Environment Agreements (MEA).

Ramsar Administrative Authority will bring in the strength of the Ramsar's Regional Centers and Networks to support regional and transboundary cooperation; capacity building; technology and knowledge exchanges; wetland related communications and mobilization of financial resources for the wetland activities.

Further, wetlands of regional importance will be consolidated within the framework of South Asian Region for Regional Cooperation (SAARC) and ICIMOD, whereas IUCN, WWF, ZSL, and Bird Conservancy shall prioritize wetlands in demo representative to the geographical

diversity based on wise use principle leading to socio-ecological prosperity.

Working relation will be established with the Wetlands International; International Lake Environment Committee Foundation, Lake-Net, International Water Management Institute, Ramsar Wetlands Japan, and ARCO Foundation to enhance understanding of wetlands from the sustainable and wise use application and practices.

3.13 Financing

Sustainable financing to wetland conservation is always a growing issue. The conservation and management of wetland ecosystem by establishing innovative and sustainable financing mechanism to ensure reliable source of revenue to promote wetland conservation and local livelihoods is must. The objective should be to enhance biodiversity and local livelihood thereby building local capacity to manage their wetlands. Programs through REDD++ World Bank, Asian Development Bank, Global Environmental Facility, Social obligation fund of enterprises, NGO, Inter-governmental organizations and Government have been funding wetland conservation activities.





THE NATIONAL RAMSAR STRATEGY AND ACTION PLAN

4.1 Goal

Nepal's Ramsar sites are conserved, wisely used, restored benefits are recognized and valued nationally and globally.

4.2 Objectives

1. To effectively conserve and manage the Ramsar site network;
2. To manage wetlands including the Ramsar site at the footprint of wisely use principle;
3. To engage federal, state and local stakeholder and capacitate them for the wetlands and Ramsar sites conservation;
4. To enhance the Ramsar implementation through the national and international cooperation; and
5. To monitor and evaluate the implementation of the National Ramsar Strategy and Action Plan.

4.3 Strategic and Objectives Key Actions

4.3.1 To Effectively Conserve and Manage the Ramsar Site Network

Effective participation of stakeholders including indigenous peoples and local communities must be enhanced to conserve and manage the Ramsar sites in Nepal. Besides, the key stakeholders should also work, to expand the reach of the Convention by continuously working to add more sites and areas of wetlands recognized under the Convention.

Outcome 1	At the base of 2018, the Ramsar site network is effectively conserved and managed with its coverage doubled in Nepal
Strategy 1	The coverage of the Ramsar Site Network of Nepal is doubled by 2024
Key Actions	
1.1	Scientific and field-based inventory of all wetlands and prioritization of them for local; state; national; regional and global importance
1.2	Socio-ecological assessment of potential wetlands, under-represented types of wetlands, for additional wetlands to be listed under Ramsar site.
1.3	Designation of additional wetlands (~10) as the Ramsar site
1.4	Identified threats in each of the Ramsar sites
Strategy 2	Indicators of the individual Ramsar sites are developed
Key Actions	
2.1	Update of the RIS of all Ramsar sites
2.2	Preparation (or review/modification) and implementation of the basin level conservation and wise use integrated plan with monitoring indicators of the Ramsar sites
Strategy 3	Health report card of each Ramsar Site is documented and disseminated
Key Actions	
3.1	Developed scientific tool and guideline for assessing the health of Ramsar sites
3.2	Performance monitoring of each Ramsar sites
3.3	Preparation, archive, dissemination and use of Annual Health report of Ramsar sites

Strategy 4	Wetlands are featured in federal, state and local policy strategies, plans and actions among key sectors
Key Actions	
4.1	Formulate Wetlands Act that harmonizes wetlands related strategies, policies and legal frameworks of sectoral agencies as relevant to the federal structures and in view of cross border wetlands between/ among provinces, municipalities and trans-boundary with attention to the Ramsar sites
4.2	Coordinate effectively among sectoral agencies to harmonize the provision of Wetlands Act in the implementation of sectoral plans and action with special attention to the Ramsar sites
4.3	Preparation of guidelines for good practices and wise use of waters and wetlands in view of basin level ecosystem functions and services
4.4	Strengthening capacities of the public and private sectors for increasing their roles and efforts to apply guidelines for good practices and wise use of wetlands
Strategy 5	Financial and other resources for effectively implementing the National Ramsar Strategic Plan 2018 – 2024 from all sources are made available
Key Actions	
5.1	Development of mechanism to ensure government fund on annual basis to implement programs and action of the Ramsar sites
5.2	Development of proposal-based funding from the international cooperation for conservation and wise use of the Ramsar sites and other wetlands
5.3	Endorsement of the propositions by non-government and public-private organization for leveraging external fund for conservation and wise use of the Ramsar sites
5.4	Promotion of private sector investment in wetlands ecotourism and wetlands based other enterprises in the Ramsar sites and other wetlands
5.5	Enhanced involvement of the public and private sectors

4.3.2 To Manage Wetlands Including the Ramsar Site at the Footprint of Wisely Use Principle

All wetlands (irrespective of Ramsar site) needs to be wisely used. The work may occur at national or local level or at basin level. The recognition of wetland functions, services and benefits need to be mainstreamed into a wide range of sectors involving a broad array of actors. Classification, prioritization of wetlands should be based upon on their importance at international, national, and local level along with designation of management regime.

OUTCOME 2	Wise use of wetlands is demonstrated in Nepal
Strategy 6	Wise use of wetlands including the Ramsar sites is recognized in the conservation and management of wetlands
Key Actions	
6.1	Documentation of indigenous knowledge, skills, innovation, and practices of wetlands conservation and management
6.2	Formulation and implementation of a plan for controlling expansion of invasive plant and animal species in wetlands
6.3	National conclaves and events among key sectors to mitigate threats for the sustainability of wetlands
Strategy 7	Wetlands functions, services and benefits is demonstrated and disseminated
7.1	Assess threats and their mitigation measures and create integrated wetland basin management demonstration sites in at-least three Ramsar sites for wetlands structure, functions, services, and benefits

Strategy 8	Wetlands conservation and wise use is mainstreamed through communication, capacity development, education, participation and awareness
Key Actions	
8.1	Update CEPA action plan and its implementation
8.2	Incorporation of conservation and wise use of wetlands in the curricula of undergraduate and graduate education program
8.3	Preparation of resource books; audio-visuals and journals for conservation and wise use of wetlands
8.4	Set up of the national dissemination mechanism for documentation of wetlands data/information and their dissemination, for example clearing-house mechanism
8.5	Knowledge enhancement system, and grants/awards for researchers and champions of wetlands management
8.6	Establish a network for exchanging information out of regular monitoring of resources uses in Ramsar sites
8.7	Sensitization through training and events to students; communities; CF groups; village leaders; politicians; bureaucrats for the conservation and wise use of wetlands
8.8	Coordination with national and international and intergovernmental institution for synergy in Communication, Education, Participation and Awareness (CEPA) implementation

4.3.3 To Build Federal and Local Stakeholder’s Capacities for the Wetlands and Ramsar Sites

Sustainable conservation of wetlands can be achieved only when local stakeholders are participated in the management and planning levels. At the same time, stakeholders should be empowered and skilled to be able to implement management plan in their sites.

OUTCOME 3	Effective coordination between Federal, state, and local Stakeholders enhanced
Strategy 9	Coordination network is established under the federal structure
Key Actions	
9.1	Establish a coordination network between local stakeholders and federal stakeholders
9.2	Create an online interactive portal to exchange knowledge and raise wetlands related issues and concerns
Strategy 10	Stakeholders at federal, state, and local level are empowered
Key Actions	
10.1	Ensure training of technical staff in all relevant institutions about preparation of management plans
10.2	Prepare management plans for Ramsar sites and ensure their implementation
10.3	Establish “Site Management Committee” to support the implementation of management plans at Ramsar sites having management plan

4.3.4 To Enhance the Ramsar Implementation Through the National and International Cooperation

National and international cooperation is imperative for sustainable conservation of the Ramsar sites.

OUTCOME 4	National and International support garnered for Ramsar site conservation
Strategy 11	Enhanced conservation of Ramsar sites through the national cooperation
Key Actions	
11.1	Increase the communication and cooperation between the institutions responsible for the conservation and management of the wetlands and its biodiversity
11.2	Ensure the coordination and cooperation between the national focal points of all conventions related to the nature conservation
11.3	Encourage Academic/scientific institutions to develop wetland programs to increase the academic and research capacity

Strategy 12	Enhanced conservation of Ramsar sites through the international cooperation
Key Actions	
12.1	Establish relationship between international donor agency for securing funds to Ramsar implementation
12.2	Coordinate and communicate with international stakeholders
Strategy 13	Funds for the implementation of the Ramsar convention is secured
Key Actions	
13.1	Apply for national and international funds for the implementation of the Ramsar convention

4.3.5 To Monitor and Evaluate the Implementation of the National Ramsar Strategy and Action Plan

Various scientific tools and mechanisms are need for monitoring and evaluation of Ramsar implementation

OUTCOME 5	Maintained Good status of Ramsar sites
Strategy 14	Regular assessment is in place for determining ecological status of Ramsar sites
Key Actions	
14.1	Establish a monitoring program to identify changes in ecological character of Ramsar sites
14.2	Produce annual health report card of Ramsar sites
Strategy 15	Ramsar evaluation protocol is developed
Key Actions	
15.1	Develop standard evaluation protocol for proper management of Ramsar sites
15.2	Publish annual report



IMPLEMENTATION PLAN

The implementation of the Strategic Plan needs to be reinforced for the survival of wetlands. Various approaches will help strengthen the implementation of the Strategic Plan at the national, state and local level. These involve critical actions to be undertaken by the key actors in partnership with other entities with regards to scientific and technical advice and guidance, resource mobilization, public awareness, visibility and capacity building.

The Ramsar national focal person/Institution needs to play vital role in raising awareness through CEPA and implementation of actions through resources mobilization. Economics of wetlands, Environmental accounting of wetlands, wetland academy, wetlands journal, resource

book, assessment methodology etc. could help in enhancing the implementation. In addition, international cooperation, capacity building, convention, workshop, technology, resource guide and fund could be a support. This will ensure an effective implementation of the convention at national, state and local level.

5.1 Coordination and Implementation Mechanism

The Ministry of Forests and Environment (MoFE) is the focal ministry for Ramsar implementation in Nepal. MoFE will coordinate with DNWPC and line agencies under state government for the conservation of Ramsar sites within their respective jurisdiction (Figure 2 and Table 7).

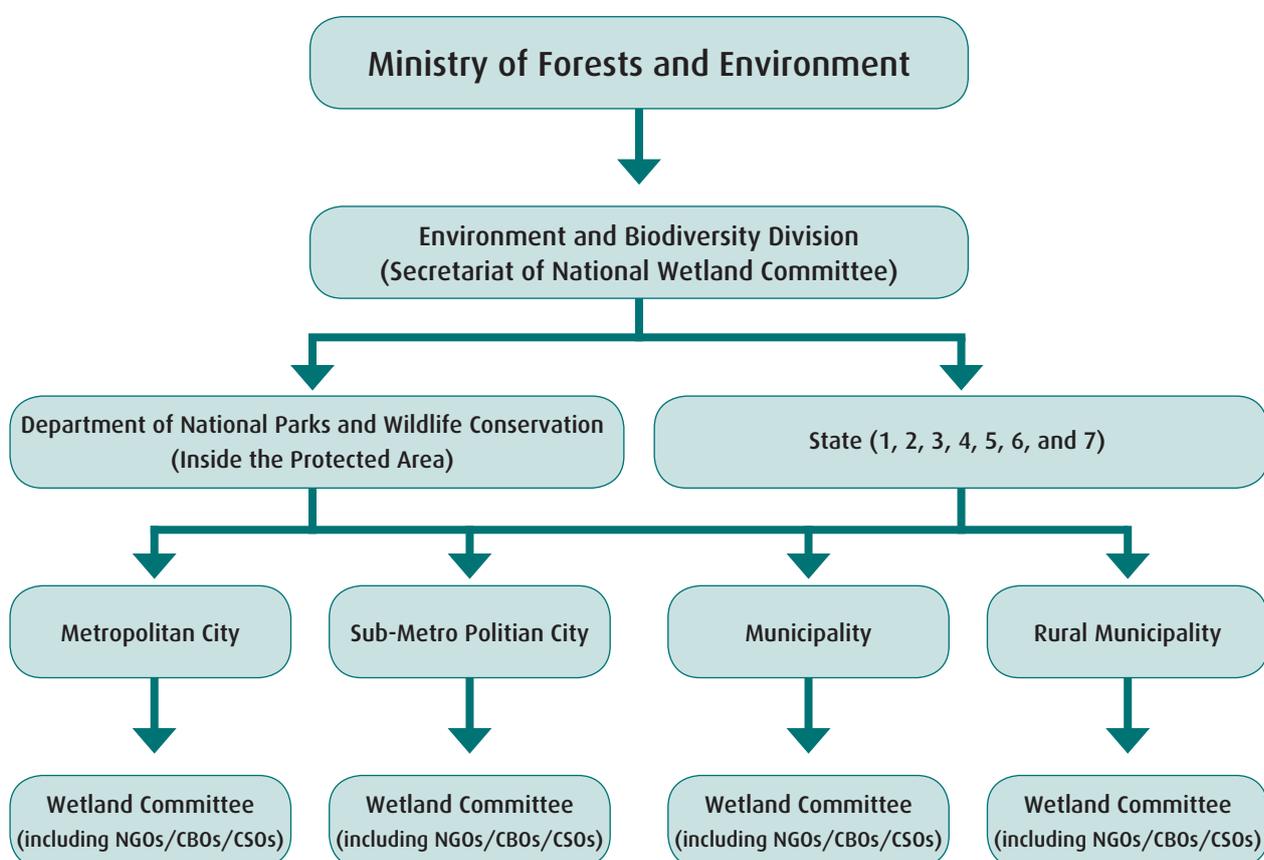


Figure 2: Coordination and implementation mechanism

Table 7: Actors and Their Main Roles in Plan Implementation

Actors	Major Roles
Federal government	Steering program implementation, facilitation, coordination and monitoring of program implementation, creating enabling environment
State government	Steering program implementation and facilitation within state, coordination and monitoring of program implementation
Local government bodies	Coordination, partnership development, financial support, creating enabling policy, joint planning
Conservation/Development Partners	Financial assistance, technology development and transfer, capacity building and knowledge dissemination
Academic Institutions	Research and development
Private Sectors	Conservation finance, entrepreneurship development
Community Institutions, local NGOs and user groups	Implementation, partnership, resource leverage and advocacy for conservation and wise use of Ramsar sites

5.2 Financial Plan

International, national, state and local funding sources committed to the conservation and wise use of Ramsar sites need to be coordinated by Ramsar Authority and facilitated through private, public, national and international organizations. Effective mobilization of additional resources to conserve, wise-use and address driving forces at minimizing the degradation and loss is required at national, state and local level. The budget to implement this strategy is estimated at 108.1 million Nepalese rupees.

5.3 Monitoring of Plan Implementation

The main objective is to make concern authorities (listed in Annex1) responsible for integrating Ramsar site conservation and wise use in overall development activities and ensure that conservation results are achieved. A monitoring and evaluation report on the implementation of this strategy and action plan shall be prepared based on the five strategic objectives. The National Ramsar Authority shall collect and manage the monitoring results by coordinating state and local government.

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ANNEXES

Annex 1: National Ramsar Goals and Targets with Relevant Tools, Actors, Baselines and Indicators

Strategic Objectives			
Objective 1: To Effectively Conserve and Manage the Ramsar Site Network			
Outcome 1: At the base of 2018, the Ramsar Site Network is effectively conserved and managed with its coverage doubled in Nepal			
1	<p>The coverage of the Ramsar Site Network of Nepal is doubled by 2024</p> <ul style="list-style-type: none"> Scientific and field-based inventory of all wetlands and prioritization of them for local; state; national; regional and global importance Socio-ecological assessment of potential wetlands, under-represented types of wetlands, for additional wetlands to be listed under Ramsar site. Designation of additional wetlands (~10) in the Ramsar site Identified threats in each Ramsar sites 	<p>MoFE/DNPWC/ DoF (NPC, MoALMC State governments Local governments)</p>	<p>Baseline</p> <ul style="list-style-type: none"> By 2016, 10 Ramsar sites have been designated (Ramsar sites database) By 2016, Surface areas of 60,561 hectares have been designated (Ramsar Secretariat) 3 in high himal, 3 in middle-mountain and 4 in Terai. Wetland planning Guidelines (MoFSC-CSUWN, 2012) <p>Indicators</p> <ul style="list-style-type: none"> No. of Ramsar sites that have been designated Total hectares of Ramsar sites that have been designated.
2	<p>Indicators of the individual Ramsar site are developed</p> <ul style="list-style-type: none"> Update of the RIS of all Ramsar sites Preparation (or review/modification) and implementation of the basin level conservation and wise use integrated plan with monitoring indicators of the Ramsar sites 	<p>DNPWC/ DoF/ MoFE, (User groups/ indigenous community)</p>	<p>Baseline:</p> <ul style="list-style-type: none"> Site Management Plan of Beeshazari and associated lakes (GoN, 2014). Catchment level management Plan for Ghodaghodi Lake (GoN, 2011) Wetlands Indicator Species Monitoring Protocol (MoFSC/CSUWN 2011) <p>Indicators</p> <ul style="list-style-type: none"> Ramsar Information Sheets updated. Implementation of Aichi Targets No. of water/wetland birds recorded
3	<p>Health report card of each Ramsar site is documented and disseminated</p> <ul style="list-style-type: none"> Developed scientific tool and guideline for assessing the Ramsar health Performance monitoring of each Ramsar site Preparation, archive, dissemination and use of Annual Health Report of Ramsar sites 	<p>DNPWC/ DoF/ MoFE, (State, Municipality, Rural municipality, user groups, indigenous community)</p>	<p>Baseline</p> <ul style="list-style-type: none"> Site/catchment level Management Plan (Beeshazar and associated lake) and Ghodaghodi Lake (2011-2015) <p>Indicators</p> <ul style="list-style-type: none"> No. of actions to address the issues of Ramsar degradation. Ecological health of Ramsar sites published.

4	Wetlands are featured in federal, state and local policy strategies, plans and actions among key sectors	<ul style="list-style-type: none"> Formulate Wetland Act that harmonizes wetlands related strategies, policies and legal frameworks of sectoral agencies as relevant to the federal structures and in view of cross border wetlands between/among provinces, municipalities and trans-boundary with attention to the Ramsar sites Coordinate effectively among sectoral agencies to harmonize the provision of Wetlands Act in the implementation of sectoral plans and action with special attention to the Ramsar sites Preparation of guidelines for good practices and wise use of waters and wetlands in view of basin level ecosystem functions and services Strengthening capacities of the public and private sectors for increasing their roles and efforts to apply guidelines for good practices and wise use of wetlands 	MoFE/ DNPWC/ DoF (MoEWRI, MoALMC, MODW, DOA)	<p>Baseline:</p> <ul style="list-style-type: none"> Draft National Water Policy, 2017 (GoN, 2017) National Wetland Policy 2012 (GoN, 2012) National Water Plan 2005 (HMG, 2005) Hydropower Development Policy 2001 (GoN, 2001) Irrigation Policy 2003 (GoN, 2003) National Energy Strategy of Nepal 2013 (GoN, 2013) Water Resources Strategy 2002 (HMG, 2002) <p>Indicators:</p> <ul style="list-style-type: none"> Inclusion of wetland issues into national strategies and in the planning processes such as for water resource management and water efficiency plans.
5	Financial and other resources for effectively implementing the National Ramsar Strategic Plan 2018 – 2024 from all sources are made available	<ul style="list-style-type: none"> Development of mechanism to ensure government fund on annual basis to implement programs and action of the Ramsar sites Development of proposal-based funding from the international cooperation for conservation and wise use of the Ramsar sites and other wetlands Endorsement of the propositions by non-government and public-private organization for leveraging external fund for conservation and wise use of the Ramsar sites Promotion of private sector investment in wetlands ecotourism and wetlands based other enterprises in the Ramsar sites and other wetlands 	MoFE/DNPWC/ DoF/ (MoICT/ research institutes/ National and international media/ local and indigenous communities /Private sector, I/NGOs)	<p>Indicators:</p> <ul style="list-style-type: none"> No. of activities/projects/incentives/actions implemented for wise use of the resources/ enhanced conservation of the Ramsar sites in that time frame Private sector undertaking activities for the conservation, wise use and management of wetlands in general reported. Inclusion of both governmental and non-governmental representatives in national Ramsar Committee reported No. of training and workshops to empower relevant institution and stakeholders.

Objective 2: To manage wetlands including the Ramsar site at the footprint of wisely use principle

Outcome 2: Wise use of wetlands is demonstrated in Nepal

6	Wise use of wetlands including the Ramsar sites is recognized in the conservation and management of wetlands	<ul style="list-style-type: none"> • Documentation of indigenous knowledge; skills; innovation; and practices of wetlands conservation and management • Formulation and implementation of a plan for controlling expansion of invasive plant and animal species in wetlands • Number of national conclaves and events among key sectors to mitigate threats for the sustainability of wetlands 	MOICT, DNPWC/ DoF/ MoFE, NGOs	<p>Baseline</p> <ul style="list-style-type: none"> • Resource Use Practices and Plan for KTWR (GoN/ CSUWN, 2011) <p>Indicators:</p> <ul style="list-style-type: none"> • Adoption of wetland policies that promote the wise use of their wetlands. • Wetlands considered as natural water infrastructure integral to water resource management at the scale of river basin • Formulation of special act, regulation and guideline of wise use of wetlands
7	Wetlands functions, services and benefits is demonstrated and disseminated	<ul style="list-style-type: none"> • Assess threats and their mitigation measures and create integrated wetland basin management demonstration sites in at-least 3 Ramsar sites for wetlands structure, functions, services, and benefits 	DNPWC/ DoF/ MoFE, MoEWRI, MoALMC, DOT/ MoCTCA, MoUD, MoFAGA, MOPIT, DOA, NARC, federal states, Municipality/ Rural Municipality/ User groups / indigenous community)	<p>Baseline</p> <ul style="list-style-type: none"> • National strategy on Communication, Education, participation and Awareness (CEPA) for the conservation and wise use of wetlands in Nepal (2011-2015) (MoSFC/CSUWN, 2011) <p>Indicators:</p> <ul style="list-style-type: none"> • Assessment of ecosystem services of Ramsar sites conducted. • Wetland issues incorporated into poverty eradication strategies
8	Wetlands conservation and wise use is mainstreamed through communication, capacity development, education, participation and awareness	<ul style="list-style-type: none"> • Update CEPA action plan and its implementation • Incorporation of conservation and wise use of wetlands in the curricula of undergraduate and graduate education program • Preparation of resource books; journals; audio-visuals and journals for conservation and wise use of wetlands • Set up of the national dissemination mechanism for documentation of wetlands data/information and their dissemination, for example clearing-house mechanism • Knowledge enhancement system, and grants/awards for researchers and champions of wetlands management 	DNPWC/ DoF/ MoFE (INGOs/ NGOs, National and International universities Research Institutions)	<p>Baseline</p> <ul style="list-style-type: none"> • National strategy on Communication, Education, participation and Awareness (CEPA) for the conservation and wise use of wetlands in Nepal (2011-2015) (MoSFC/CSUWN, 2011) <p>Indicators:</p> <ul style="list-style-type: none"> • Number of relevant Ramsar Handbooks published • Number of grants and research funds released annually • Establishment of website that publishes wetlands issues, concerns and achievement in conservation of wetlands including Ramsar sites.

		<ul style="list-style-type: none"> Establish a network for exchanging information out of regular monitoring of resources uses in Ramsar sites Sensitization through training and events to students; communities; village leaders; politicians; bureaucrats for the conservation and wise use of wetlands Coordination with national and international and intergovernmental institution for synergy in CEPA implementation 	
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Objective 3: To build federal and local stakeholder’s capacities for the wetlands and Ramsar sites

Outcome 3: Effective coordination between federal, state and local Stakeholders enhanced

9	Coordination network is established under the federal structure	<ul style="list-style-type: none"> Establish functional wetland management units at state levels Administer regular funds to execute, monitor and evaluate Ramsar implementation 	DNPWC/ DoF/ MoFE/Federal government (Municipality/ Local Municipality/ INGOs/ NGOs, National and International universities Research Institutions)	<p>Indicators</p> <ul style="list-style-type: none"> Number of activities performed through the established wetland management units.
10	Stakeholders at federal, state and local level are empowered	<ul style="list-style-type: none"> Ensure training of technical staff in all relevant institutions about preparation of management plans Prepare management plans for Ramsar sites and ensure their implementation Establish “Site Management Committee” to support the implementation of management plans at Ramsar sites having management plan 	DNPWC/ DoF/ MoFE/Federal government (Municipality/ Local Municipality/NGOs, National universities Research Institutions, local user groups and indigenous community)	<p>Indicators</p> <ul style="list-style-type: none"> Adoption and revise of site management plan that suit to Ramsar site

Objective 4: To enhance the Ramsar implementation through the national and international cooperation

Outcome 4: National and International support garnered for Ramsar site conservation

11	Enhanced conservation of Ramsar sites through the international cooperation	<ul style="list-style-type: none"> Increase the communication and cooperation between the institutions responsible for the conservation and management of the wetlands and its biodiversity Ensure the coordination and cooperation between the national focal points of all conventions related to the nature conservation Encourage Academic/scientific institutions to develop wetland programs to increase the academic and research capacity 	DNPWC/ DoF/ MoFE, (MoEWRI, MoALMC, DOT/ MoCTCA, MoUD, MoFAGA, MOPIT, DOA, NARC, federal states, Municipality/ Rural Municipality/ User groups / indigenous community)	<p>Indicators</p> <ul style="list-style-type: none"> Programs launched and executed in coordination between and among relevant stakeholders
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12	Enhanced conservation of Ramsar sites through the international cooperation	<ul style="list-style-type: none"> Establish relationship between international donor agency forsecuring funds to Ramsar implementation Become a signatory member of wetland related organizations and forums 	DNPWC/ MoFE (Ramsar convention, REDD++, World Bank, Asian Development Bank, (CGF)	<p>Indicators:</p> <ul style="list-style-type: none"> Number of multilateral and bilateral agreement at regional and International Initiatives. Involvement in the development and implementation of a Regional Initiative under the framework of the Convention.
13	Funds for the implementation of the Ramsar convention is secured	<ul style="list-style-type: none"> Apply national and international funds for the implementation of the Ramsar convention 	DNPWC/ MoFE (Ramsar convention, REDD++, World Bank, Asian Development Bank, CGF)	<p>Indicators:</p> <ul style="list-style-type: none"> No. of execution of projects or grants released.
Objective 5: To monitor and evaluate the implementation of the National Ramsar Strategy and Action Plan				
Outcome 5: Maintained Good status of Ramsar sites				
14	Regular assessment is in place for determining ecological status of Ramsar	<ul style="list-style-type: none"> Establish a monitoring guideline to identify changes in ecological character of Ramsar sites Produce annual health report card of Ramsar sites 	DNPWC/ DoF/ MoFE (I/NGOs/ Research institution and universities)	<p>Indicators:</p> <ul style="list-style-type: none"> Number of publication in national or international journals Media covers in the form of articles and radio programs
15	Ramsar evaluation protocol is developed	<ul style="list-style-type: none"> Develop standard evaluation protocol for proper management of Ramsar sites Publish annual report 	DNPWC/ DoF/ MoFE (I/NGOs/ Research institution and universities)	<p>Indicators:</p> <ul style="list-style-type: none"> Evaluation of Wetland resources of all Ramsar sites

Annex 2: Indicative Budget for the Action Plan

SN	Strategic Actions	Unit	Amount (NPR)	Amount (USD)
Outcome 1: At the base of 2018, the Ramsar site Network is effectively conserved and managed with its coverage doubled in Nepal				
1.1 The coverage of the Ramsar site Network of Nepal is doubled by 2024				
1.1.1	Scientific and field-based inventory of all wetlands and prioritization of them for local; state; national; regional and global importance	Events	150,000,000	1,500,000
1.1.2	Socio-ecological assessment of potential wetlands, under-represented types of wetlands, for additional 10 wetlands to be listed as Ramsar site	Events	20,000,000	200,000
1.1.3	Designation of additional wetlands (~10) in the Ramsar site	Events	12,000,000	120,000
1.1.4	Identified threats in each Ramsar sites	Events	10,000,000	100,000
1.2 Indicators of the individual Ramsar site are developed				
1.2.1	Update of the RIS of all Ramsar sites	Events	10,000,000	100,000
1.2.2	Preparation (or review/modification) and implementation of the basin level conservation and wise use integrated plan with monitoring indicators of the Ramsar sites	No.	20,000,000	200,000
1.3 Health report card of each Ramsar site is documented and disseminated				
1.3.1	Developed scientific tool and guideline for assessing the Ramsar health	Annual	5,000,000	50,000
1.3.2	Performance monitoring of each Ramsar site	Annual	2,500,000	25,000
1.3.3	Preparation, archive, dissemination and use of Annual Health Report of Ramsar sites	Annual	2,500,000	25,000
1.4. Wetlands are featured in national, state, and local policy strategies, plans and actions among key sectors				
1.4.1	Formulate Wetland Act that harmonizes wetlands related strategies, policies and legal frameworks of sectoral agencies as relevant to the federal structures and in view of cross border wetlands between/among provinces, municipalities and trans-boundary with attention to the Ramsar sites	No	10,000,000	100,000
1.4.2	Coordinate effectively among sectoral agencies to harmonize the provision of Wetlands Act in the implementation of sectoral plans and action with special attention to the Ramsar sites	Events	20,000,000	200,000
1.4.3	Preparation of guidelines for good practices and wise use of waters and wetlands in view of basin level ecosystem functions and services	No	10,000,000	100,000
1.4.4	Strengthening capacities of the public and private sectors for increasing their roles and efforts to apply guidelines for good practices and wise use of wetlands	Events	10,000,000	100,000
1.5 Financial and other resources for effectively implementing the National Ramsar Strategic Plan 2018 - 2024 from all sources are made available				
1.5.1	Development of mechanism to ensure government fund on annual basis to implement programs and action of the Ramsar sites	No	2,500,000	25,000
1.5.2	Development of proposal-based funding from the international cooperation for conservation and wise use of the Ramsar sites and other wetlands	Events	2,500,000	25,000

SN	Strategic Actions	Unit	Amount (NPR)	Amount (USD)
Outcome 2: Wise use of wetlands is demonstrated in Nepal				
2.1 Wise use of wetlands including the Ramsar sites is recognized in the conservation and management of wetlands				
2.1.1	Documentation of indigenous knowledge; skills; innovation; and practices of wetlands conservation and management	Annual	2,500,000	25,000
2.1.2	Formulation and implementation of a plan for controlling expansion of invasive plant and animal species in wetlands	Events	2,000,000	20,000
2.1.3	National conclaves and events among key sectors to mitigate threats for the sustainability of wetlands	Events	3,000,000	30,000
2.2 Wetlands functions, services and benefits is demonstrated and disseminated				
2.2.1	Assess threats and their mitigation measures and create integrated wetland basin management demonstration sites in atleast 3 Ramsar sites for wetlands structure, functions, services, and benefits.	Events	300,000,000	3,000,000
2.3 Wetlands conservation and wise use is mainstreamed through communication, capacity development, education, participation and awareness				
2.3.1	Update CEPA action plan and its implementation	Events	3,000,000	30,000
2.3.2	Incorporation of conservation and wise use of wetlands in the curricula of undergraduate and graduate education program	No	5,000,000	50,000
2.3.3	Preparation of resource books; journals; audio-visuals and journals for conservation and wise use of wetlands	Events	50,000,000	500,000
2.3.4	Set up of the national dissemination mechanism for documentation of wetlands data/information and their dissemination, for example clearing-house mechanism	No	5,000,000	50,000
2.3.5	Knowledge enhancement system, and grants/awards for researchers and champions of wetlands management	No	5,000,000	50,000
2.3.6	Establish a network for exchanging information out of regular monitoring of resources uses in Ramsar sites	No	500,000	5,000
2.3.7	Sensitization through training and events to students; communities; village leaders; politicians; bureaucrats for the conservation and wise use of wetlands	Events	50,000,000	500,000
2.3.8	Coordination with national and international and intergovernmental institution for synergy in CEPA implementation	Events	50,000,000	500,000
Outcome 3: Federal and local stakeholder's networks effectively performed				
3.1. Coordination network is established under the federal structure				
3.1.1	Establish a coordination network between local stakeholders and federal stakeholders	Annual	2,000,000	20,000
3.1.2	Create an Online interactive portal to exchange knowledge and raise wetlands related issues and concerns	Events	1,000,000	10,000
3.2. Stakeholders at federal and local level are empowered				
3.2.1	Ensure training of technical staff in all relevant institutions about preparation of management plans	No	1,000,000	10,000
3.2.2	Establish "Site Management Committee" to support the implementation of management plans at Ramsar sites having management plan	No	10,000,000	100,000
3.2.3	Prepare management plans for Ramsar sites and ensure their implementation	No	5,000,000	50,000

SN	Strategic Actions	Unit	Amount (NPR)	Amount (USD)
Outcome 4: Ramsar implementation is enhanced in sustainable manner				
4.1 Ramsar implementation is enhanced through the national cooperation				
4.1.1	Increase the communication and cooperation between the institutions responsible for the conservation and management of the wetlands and its biodiversity	Events	2,000,000	20,000
4.1.2	Ensure the coordination and cooperation between the national focal points of all conventions related to the nature conservation	Annual	5,000,000	50,000
4.1.3	Encourage Academic/scientific institutions to develop wetland programs to increase the academic and research capacity	Events	2,000,000	20,000
4.2. Ramsar implementation is enhanced through the international cooperation				
4.2.1	Establish relationship between international donor agency for securing funds to Ramsar implementation	Events	1,000,000	10,000
4.2.2	Become a signatory member of wetland related organizations and forums	Events	5,000,000	50,000
4.2.3	Apply national and international funds for the implementation of the Ramsar convention	No	1,000,000	10,000
Outcome 5: Maintained Good status Ramsar sites				
5.1 Regular assessment is in place for determining ecological status of Ramsar sites				
5.1.1	Establish a monitoring program to identify changes in ecological character of Ramsar sites	Events	5,000,000	50,000
5.1.2	Produce annual health report card of Ramsar sites	Events	5,000,000	50,000
5.2 Ramsar evaluation protocol is developed				
5.2.1	Develop standard evaluation protocol for proper management of Ramsar sites	Events	5,000,000	50,000
5.2.2	Publish annual report	Events	1,500,000	15,000
Grand-total			1,081,000,000	10,810,000

USD Exchange rate: 1 USD = NPR 100 (Approx.)



Government of Nepal
Ministry of Forests and Environment
Singha Durbar, Kathmandu, Nepal
Tel: +977-1- 4211567, 4211936
Fax: +977-1-4223868