



Government of Nepal
Ministry of Water Supply
Business Plan



For

Department of Water Supply and Sewerage Management

Period: (FY 2076/77 – 2080/81) 2019/20-2024/25

Supported by:

ADB TA 3157-NEP:

Institutional Support and Service Advisory Unit

Submitted By
ISSAC Team

Submitted To
DWSSM

September 2019

Executive Summary

This document presents the Business Plan of the Department of Water Supply and Sewerage Management for the period 2076/77-2080/81 BS

The ladder of Water Supply, Sanitation and Hygiene (WaSH) is taking leap globally after Sustainable Development Goals (SDG) are announced. Government of Nepal being one of the signatories of SDGs have already customized the SDGs which are mentioned in National Planning commissions (NPC) documents in “Roadmap to SDGs”. Department of Water Supply and Sewerage Managements (DWSSM) business must be shaped as per the changed context as new avenues are opening up in WaSH sector. The purpose of preparation of business plan is delineation of DWSSM’s market with other market competitors based upon its strength, mitigation of weaknesses in order to remain lead market force and planning as per the business needs including facilitation in legal rules and regulations.

Chapter 1 sets out the development context of Wash as market, National targets, prevailing policies and legal framework, purpose and limitations of the DWSSM’s business.

Chapter 2 outlines vision, mission, goals and objectives.

Chapter 3 outlines the technical and Social SWOT analysis.

Chapter 4 sets out the envisioned programs to DWSSM’s mandate

Chapter 5 sets out the strategy and action plan. DWSSM has identified eight enables of sector pillars (Reaching the unreached service level improvements, service quality improvement, climate change adaptation, environmental health improvement, private sectors financing, creating the institutional setup of WaSH sector and sector strengthening,

Chapter 6 sets out the investment plan

Chapter 7 sets out the human resource strategy

Chapter 8 outlines the monitoring and evaluation

The business plan has identified 17 key business areas which are solely developed on the basis of Government of Nepal’s provided mandate to DWSSM in 2075/02/13. It is imperative that those businesses are backed up by facilitative rules, regulation, guidelines and criteria. All the required document which needs to be prepared for favorable business environment is also mentioned in this document. Similarly, there are some prerequisites for these businesses to flourish which are mentioned along with those areas. DWSSM needs to identify its strengths and weaknesses in its technical capacity, legal frameworks and social aspects to develop the business according to strengths and mitigate the weaknesses. Similarly, the external opportunities and threats also needs to be identified for better preparedness for the risks. Better technical human resources, lab facilities, experience in preparation of guidelines and manuals, being an advocator of participation, community ownership, gender equity and social inclusion in the sector makes department strong enough to take the lead of the sector however more improvement is required in terms of creating sanitation business post Open defecation free (ODF) era and utility management in water.

In first 5 years the projected investment requirement is more than 25 billion NRs. whereas the need increases double in the second 5 years. The financial cost is estimated at the rate of average per capita cost of different project modality implemented under DWSSM. It is evident that traditional resources which department is tapping won't be enough hence engagement with private sector, tapping the climate financing through aligned rules, regulation and guideline is going to be departments strategy along with advocacy in increasing WaSH sectoral budget from government of Nepal. Human resources required for Business plan is estimated on the basis of Urban Water Supply & Sanitation Project proposed human resources, It is shown that the required human resource is approx. 1.5 times the current human resource and department needs to outsource the service packages through different mediums. It is expected that government will be able to achieve the required goals and department would be the major contributor in that achievement through its continuous endeavor in facilitating in "reaching the unreached under its core value as leaving no one behind", "service level improvement of WaSH sector" "continuous service quality improvement of WaSH sector" and this business plan would be instrumental in doing so. The details of the aforementioned activities are presented in this business plan.

Table of Content

Executive Summary.....	ii
Abbreviation and Acronyms	vi
Chapter 1: Background	0
1.1 Development context of WaSH as market.....	0
1.2 National Targets.....	0
1.3 Prevailing policies and legal framework.....	1
1.4 Purpose of DWSSM’s business plan	2
1.5 Limitations of the DWSSM’s business plan	2
Chapter 2: Vision, Mission, Goals & Mandates	4
2.1 WaSH Sectors Vision and Mission.....	4
2.2 Mandate, vision, mission and capacity of DWSSM	4
2.2.1. Mandate.....	4
2.2.1 Core value of DWSSM	5
2.2.2 Vision:.....	5
2.2.3 Mission:.....	5
2.2.4 Capacity of DWSSM	5
Chapter 3: SWOT analysis of DWSSM.....	6
3.1 Technical SWOT Analysis.....	6
3.2 Social SWOT Analysis	7
Chapter-4: Envisioned programs under DWSSM’s mandate	9
Chapter-5: Action plan and activities to prepare the favorable business ecosystem:	17
Chapter-6: Investment plan.....	21
Chapter-7: Human resource strategy.....	25
Chapter 8: Monitoring and Evaluation.....	26
REFERENCES	27
Annex-I: Monitoring output and activities (yearly targets)	28
Annex-II: Budget plan & Monitoring Framework.....	30
Annex III-A Approved Organization Structure of DWSSM	32
Annex III-B Proposed Organogram of DWSSM.....	34
Annex III-C Estimation of Human Resources Through Consulting Firm/Individual.....	35
Annex IV Gap Analysis and Possible Donors for Financing Support	37
Annex-V: Ongoing and proposed project details.....	39

Figure: 1 Technical SWOT Analysis	6
Figure: 2 Social SWOT Analysis.....	7
Figure: 3 Scope of Business Plan.....	17
Figure: 4 Last Five Years Budget Expenditure Trend	21
Figure: 5 Investment Required for DWSSM	22
Figure: 6 Origination contribution	22
Figure: 7 Five Year DWSSM Business (2076/77-2080/81)	23
Figure: 8 DWSSM Five Year Business (2081/82-2085/86)	24

Abbreviation and Acronyms

ADB	Asian Development Bank
CCA	Capital Cost Allowance
CEDAW	Convention on the Elimination of all Kinds of Discrimination against Women
CHRDU	Central Human Resource Unit
CRC	Convention on the Rights of the Child
DDG	Deputy Director General
DP	Development Partner
DRM	Disaster Risk Management
DWSSM	Department of Water Supply and Sewerage Management
EPA	Environmental protection Agency
FSM	Fecal Sludge Management
FY	Fiscal Year
GCF	Green Climate Fund
GCP	Global Carbon Project
GoN	Government of Nepal
GESI	Gender Equity & Social Inclusion
GHG	Greenhouse Gas
HRD	Human Resource Development
ICT	Information & Communication Technology
INGO	International Non-Government Organization
IWRM	Integrated Water Resource Management
KPI	Key Performance Indicator
MCPM	Minimum Condition for Performance Measurement.
M&E	Monitoring and Evaluation
MDG	Millennium Development Goal
MDR	Managing for Development Results
MIS	Management Information System
MoPPW	Ministry of Physical Planning and Works
MOFAGA	Ministry of Federal Affairs and General Administration
MOF	Ministry of Finance
MOFE	Ministry of Forest and Environment
MOEWRI	Ministry of Energy, Water Resources and Irrigation
MOWS	Ministry of Water Supply
MTEF	Mid-Term Expenditure Framework
NDWQS	National Drinking Water Quality Standard
NDN	Named Data Networking
NDC	Nationally Determined Contributions
NGO	Non-Government Organization
NPC	National Planning Commission
NRDWP	National Rural Drinking Water Programme
NRW	Non-revenue water
NWSSTC	National Water Supply & Sanitation Training Center
PMAS	Poverty Monitoring and Analysis System
RWH	Rainwater Harvesting
SDG	Sector Development Goal
SOP	Standard Operational Procedures
TDF	Town Development Fund
UDHR	Universal Declaration of Human Rights
VDC	Village Development Committee
WATSAN	Water and Sanitation
WHO	World Health Organization
WSS	Water Supply and Sanitation
WUSC	Water User and Sanitation Committee

WSTFC

Water Supply Tariff Fixation Commission

Chapter 1: Background

1.1 Development context of WaSH as market

The establishment of the office for water supply in (1891-1893) [1] shows the government of Nepal started prioritizing the water supply services long back. Starting from community standpipes in Kathmandu the water supply services extended to Amalekhgunj, Birgunj, Palpa etc. Activities were under the Department of Irrigation (DoI) for long time until Department of Water Supply and Sewerage (DWSS) was established in 1972. In 1990 the market of sanitation was first identified in the Water supply, sanitation and hygiene sector when Millennium development goals set the target of halving the population without access of proper water supply and sanitation. That time the basic water supply coverage was 46% and toilets coverage was only 6%. Clearly the focus of the government was to get the basic services and goals were set accordingly which meant the mandate of department also focused on accessibility of water supply services and sanitation.

However, things have changed post MDG. After the sustainable development goals have dedicated a separate goal on safe water supply and universal access in safely managed sanitation the market has hit the new avenues like service improvement in water supply and management of wastewater through different models. In this changed scenario, department also needs to have different eye on the business. Similarly, in previous years while trying to achieve the accessibility in water supply challenge in functionality and sustainability of water supply systems has been seen. This challenge has forced the sector to think about improvement of management models, robust designs of the system, introduction of climate change adaptation and resilient technologies, upgradation of service providers and capacity building in those aspects. Similarly, it has been accepted that traditional information management system, data collection would not be enough to get the goal. These trends have shown that upcoming WaSH market components would be service level improvement, capacity building, management of waste water, management of information system of WaSH and service regulation.

After the federal restructuring of the country three tiers of governments have separate roles and responsibilities. DWSSM needs to be clear about roles, responsibilities and mandates. It is apparent that legal and institutional arrangements need to be intact to tap the abovementioned markets. The upcoming WaSH act, sector development plans would be instrumental in delineation of DWSSM's markets.

1.2 National Targets

As the national targets are the governments investment priorities it is imperative for DWSSM to keep its business aligned with the national targets. The national targets which would drive the DWSSM's business are mentioned in the Table: 1.

Table: 1 NPC and SDG Target

Area	Current situation	15th year plan (2076-2081) Targets in %	SDG Targets year(2085-86 BS) (Road Map to SDG, NPC)
Basic water supply service	89	99	100
Medium to high level water supply service	21	40	90
Basic sanitation services	100	100	100
Safely managed sanitation services		20	50

1.3 Prevailing policies and legal framework

It would be empirical to note about the policies and frameworks which guides DWSSM's markets. Prevailing policies and legal frameworks are mentioned below in Table: 2.

Table: 2 Prevailing policies and legal framework

SN	Acts/rules/policies	Key aspects	How does it affect DWSSM?
1	Water resource act 1992/regulation 1993	1. Umbrella act of all water resource. 2. Focuses on licensing and utilization 3. emphasizes water source as states property 4. Drinking water has been prioritized first has made DWSSM works easier	-Change in District water resource committee post federalization - River basin arrangements and allocation in three tiers of governments can be critical post federalization
2	National sanitation policy -1994	Advocated sanitation as basic right	It is more prominent in constitution and upcoming policies will be more stringent.
3	Nepal water supply corporation act-1989	Responsibility to manage water particularly in urban sector has been given to NWSC.	Although said to be service provider act has given freedom to investment capital as well. Delineation seems necessary post federalization and upcoming WaSH act should cover those aspects
4	Drinking water rule-1998	Rule formulated post WRA. More focus on WUSC	If the service needs to be provided through private companies, cooperatives upcoming rules needs to be more elaborative than existing.
5	Water management board act-2006	Rule formulated to provide integrated, efficient municipal WaSH services	Proper delineation between the boundaries of board, NWSC, WUSC is necessary and regulating role of DWSSM needs to be redefined.
6	Water supply tariff fixation act/policies-2006,2007	Aims to regulate the tariff	Regulation needs are beyond tariff in other key performance indicators (KPI's) as well. DWSSM as a regulator is being envisioned in its mandate.
7	Rural water supply and sanitation policy-2004,2006	Recognized sanitation as basic right and integral Part of Water Supply Projects. Central Government's Role as a Facilitator, evaluation Roles to NGOs and CBOs/Local Bodies.	Local bodies are more prominent now because of constitution hence operational aspects needs revision. Sustainability of Water supply schemes is DWSSM's mandate
8	Drinking water quality standards-2006	Has made service providers responsible for maintain the NDWQS. Surveillance has been given to health ministry	Clear regulatory provisions are needed which is now DWSSM's market

SN	Acts/rules/policies	Key aspects	How does it affect DWSSM?
9	Urban water supply and sanitation policy-2009	Compatible infrastructure, appropriate institutional setup, rationalized cost recovery, favorable financing environment, enhanced people's participation and their role in decision making and appropriate partnership with the private sector are recognized	Clear role of Local government in selection of operators is needed. Financing /investment from three tiers of government and delineation of investment environment seems necessary. DWSSM is one of the biggest capital investors in Urban water supply.
10	Local governance operation act-2017	Major responsibilities mentioned in previous laws such as tariff fixation, operation has been given to local government	DWSSM needs to revisit their all programs to give space to the local governments in all project modalities.
11	Climate change policy-2011	Focuses about adopting a low-carbon emissions socio-economic development path and supporting and collaborating in the spirits of country's commitments to national and international agreements related to climate change	DWSSM can create the climate friendly investments and attract the climate financing by helping nationally determined contributions (NDC's)
12	National Water Plan/Strategy 2002,2005	IWRM and holistic development of water resources	Small water sources are more vulnerable hence requires more focus. Water supply sources needs more protection and can be achieved after these strategies are updated. Furthermore, difference in administrative boundaries and river basin boundaries would be critical in water allocation and resolving the water conflicts
13	Draft water supply, sanitation and hygiene act	Focuses on water security and water quality. It also has provisions for sewerage management and different business models	Upcoming regulations would change according to this umbrella act and DWSSM needs to change its investment pattern according to it.

1.4 Purpose of DWSSM's business plan

The main purpose of DWSSM's business plan is to

1. Delineation of DWSSM's market in changed context
2. Identification of possible investment opportunities based upon the DWSSM's strengths
3. Mitigation of weaknesses and external threats
4. Human resource planning as per the investment needs
5. Facilitation in institutional and legal arrangements to tap the WaSH market.

1.5 Limitations of the DWSSM's business plan

This business plan is made with few risks in mind as the sector is emerging into new dimension the risk associated with it needs to be monitored continuously and limitations should be mitigated accordingly. Limitations of DWSSM are mentioned below.

1. As the technologies are changing in WaSH sector such as modular treatment plants, people are interested towards the decentralized household wastewater treatment options and giant market forces (For example: gates foundation) are putting more effort in research and development of household level technologies the investment options pointed in business plan might be obsolete in upcoming future.

2. With upcoming WaSH bill it is expected that private sector would be more attracted in WaSH sector if the policies gives the environment for private sector to flourish. The changes in business of DWSSM should be in line with the changes in policy. Since, regulation and policies are yet to be formulated its impact on business plan is still unknown and has not been taken into account in this business plan.
3. Information regarding the strength of the other sector actors has not been fully captured in this business plan
4. It is assumed that the three tiers of governments will put the collaborative effort in getting the sectoral goal. However, the formulation of rules, policies, plans in three tiers of governments might create some conflict in the coming future. Since, they are yet to be formulated they have not been taken into account in this business plan.

Chapter 2: Vision, Mission, Goals & Mandates

2.1 WaSH Sectors Vision and Mission

WaSH sectors vision and mission are stated in sector development plan draft. According to which the sector has Vision of improving public health and living standard of people of Nepal through safe, sufficient, accessible, acceptable, and affordable water, sanitation and hygiene services—any time, everyone and everywhere and Mission of developing an effective, responsive, transparent, and accountable WaSH Sector. The sector will adopt one WaSH Act, one national WaSH policy framework, one National WaSH sector development plan executed by one Ministry and one WaSH performance report to contribute to the realization of the vision.

2.2 Mandate, vision, mission and capacity of DWSSM

2.2.1. Mandate

Based on the decision made by the GON dated 2075/02/13, the mandate of DWSSM includes

1. Facilitation in formulation and update of drinking water and sanitation acts, regulations, policies, norms, standard, guidelines focusing on climate change adaption and disaster management
2. To perform regulatory role during the implementation of federal and province level projects.
3. To construct, operate and manage the national, inter provincial and large drinking water supply and sanitation systems incorporating sewerage scheme and to implement or ensure implementation of service level up gradation of existing water supply projects in line with national water programs.
4. To facilitate Ministry of Water Supply in signing the contract agreements with development partners/investors/private sectors for managing the financial requirement needed for the drinking water and sanitation sector.
5. To conduct study, research and programs that may develop appropriate technologies
6. Monitor, evaluate the projects from social, economic and technical perspectives.
7. Implement human resources development program to develop skilled manpower required for the project.
8. Implement mega multipurpose waste management and waste water treatment projects that require huge investment.
9. Prepare and implement programs that helps to conserve and protect ground water.
10. Formulate and implement projects that provide high and medium level water supply services.
11. As needed mobilize international non-governmental organizations through integrated data management.
12. Formulate policy on industrial-level drinking water and sewerage management.
13. Recognizing underground water table depletion as well as overall drying of water resources, initiate mitigating programs that address the ongoing phenomenon.
14. Implement drinking water reform programs by taking measures to resolve the existing arsenic problems in Terai.
15. Develop and implement public private partnerships.
16. Protection of freshwater sources such as rivers, streams and other natural reservoirs.
17. Prepare initial environmental examination and environmental impact evaluation for approval.
18. Prepare periodic master plan, periodic plan, technical assistance and implementation of the water supply and sanitation projects by coordinating with local and provincial government.
19. Implementation and Regulation of large projects to be constructed under domestic and foreign financial assistance in the co-financing modality.
20. Implementation and regulation of impounding reservoir-based water supply projects and bulk distribution water supply projects.
21. Implementation of multi stage lift projects with complex technicalities in arid zone area.

22. Facilitation in the implementation of total sanitation program in free open defecation declared area.

2.2.1 Core value of DWSSM

DWSSM believes the development of DWSSM markets should align with community's participation, local level engagement, prioritizing gender equality and social inclusion. Along with these, department follows the constitutional provision and human rights norms to leave no one behind with transparent and accountable institution.

2.2.2 Vision:

To build DWSSM as a robust, technology friendly, efficient institution in WaSH sector which would be able to integrate the WaSH components such as capacity building, regulation, service level improvement of WaSH services in efficient and effective way.

2.2.3 Mission:

To facilitate the Government of Nepal to reach the National goals, Sustainable development goals of WaSH sector by efficiently working within the mandates provided by government of Nepal

2.2.4 Capacity of DWSSM

In present context DWSSM is trying to fulfil the mandated through 15 Federal Water Supply and Sanitation Project Offices as local project facilitators with local government and WUSCs taking the lead in implementation. Dialogues are going on within the government sector to increase the office and human resource as it will not be enough in future to cover the whole mandate. It has around 100 highly experienced engineers, most of them with master's degree in water supply and sanitation or in environmental engineering, along with around 284 experienced technical and non-technical field-level staff. (Refer Annex : III A for details)

Chapter 3: SWOT analysis of DWSSM

3.1 Technical SWOT Analysis

1. Human resource capacity not enough to meet the mandates institutions.
2. Less ICT utilization has made monitoring, management of information and decision support traditional
3. Less focus on research and development of technologies/weak link with academic institutions
4. Technological gap in terms of Smart water management /Non revenue water/waste water treatment project
5. Less focus on technological support /servicing /asset management of utilities
6. Preparation of documents such as SOP guidelines, business plan, servicing guidelines, asset

1. Technology adopted by other institutions (Local government, other stakeholders) if better might hamper the departments business.
2. Technology adopted might not be resilient and adaptive in terms of Climate change and disaster risks
3. Unpredictable urban growth might make the design vulnerable in terms of meeting the demand
4. Source depletion and non-water resource friendly development might make the water resource use vulnerable



1. Manpower have better technical capacity than other organization
2. Has prepared drinking water quality standard itself for the sector
3. Department has lab provisions
4. Department has mobile water quality vans for immediate checking of water qualities
5. Has historically prepared the guidelines, manuals regarding the designs and department is aware about the possible changes in technologies

1. More focus on capacity building from development partners/investors
2. Private sector more interested in making technological shifts
3. Growing interest on use of mobile in user level
4. Focus of sector development plan on research and development. Allocated resource for it
5. Ministries preparation and will towards digitized MIS and DSS in long run

Figure: 1 Technical SWOT Analysis

3.2 Social SWOT Analysis

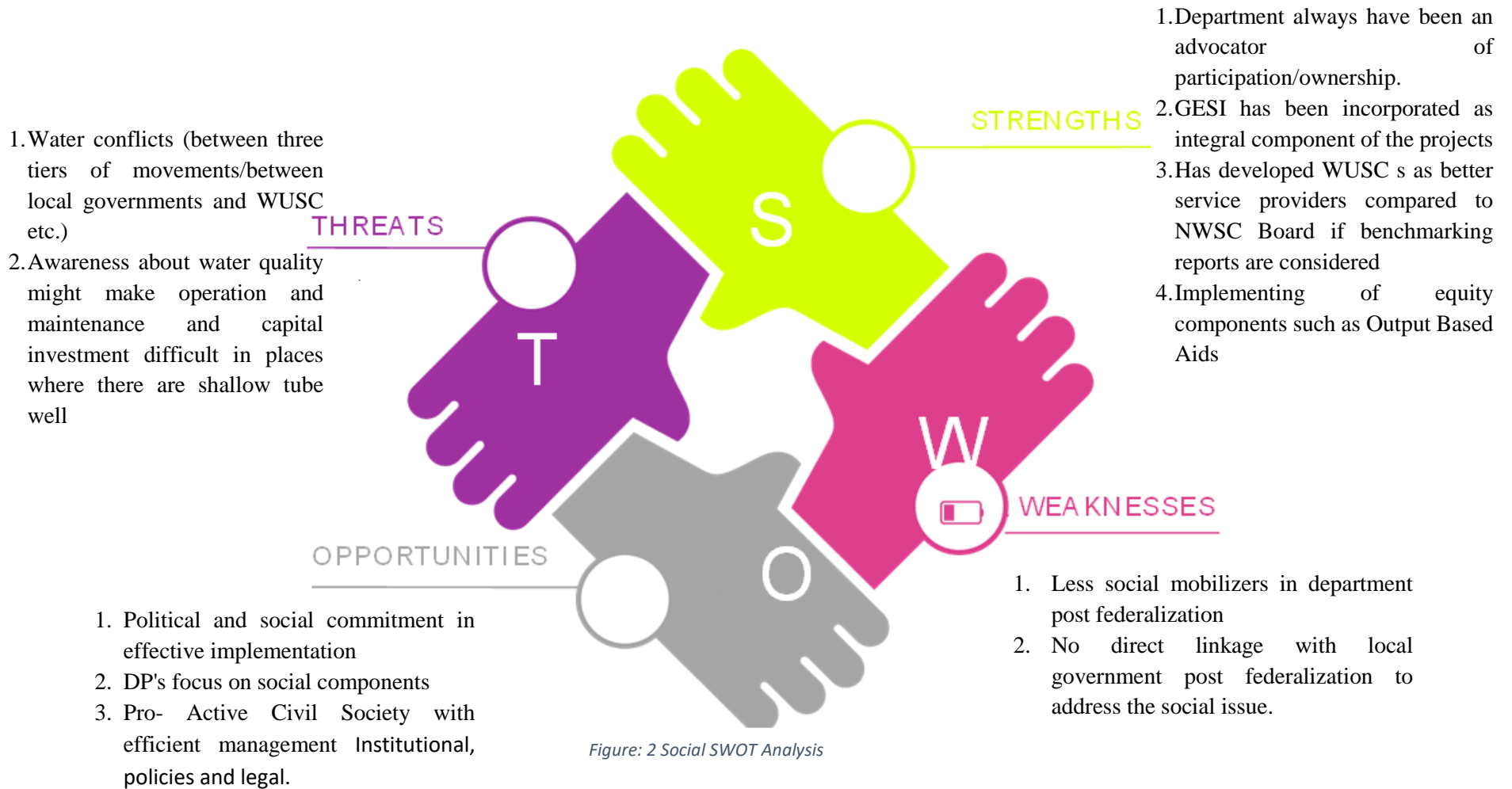


Figure: 2 Social SWOT Analysis



1. Departments training institution NWSSTC can be great asset in developing tie capacity building of human resource ,developing capacity development master plans ,investing and accrediting in the capacity development program
2. Department is trying innovative ideas through WASMIP, ISSAU projects in maintaining the sustainability of water supply injects such as development of SOP's/new management models etc.

S



1. Department still not clear about the project selection modality/cost recovery modality etc.
2. Still not able to grab the regulatory role/monitoring role for Utility operators

W



1. Ministries focus on system categorization might help DWSSM developing a proposal
2. Possibility of good gov. referenced data and preparation of MIS through NAWASH can make NMIP strongest institution
3. Regulatory role can be solely claimed by DWSSM after federalization

O



1. Ambiguous Institutional arrangement and roles and responsibilities of different tiers of government
2. No IWRM plan can make allocation of water difficult
3. No electrical subsidy for water might male water costlier
4. Slow institutional transformation
5. Registration and renewal of water sources/ WUSC would be tricky post federalization

T

Chapter-4: Envisioned programs under DWSSM's mandate

Table: 3 Envisioned programs under DWSSM's mandate

SN	Projects	Unique Selling Point of the project	Mandate of DWSSM it will contribute to	Potential Market identified from DWSSM /Potential funding agencies and options	Critical factors for successful implementation
1	Basic water service program-1	<ul style="list-style-type: none"> ➤ demand based and community participatory approach ➤ empowerment of community capacity building programs at different stage of project cycle ➤ Upfront O&M fund ➤ water supply and sanitation to unreached community 			<ul style="list-style-type: none"> ➤ Little bit conflicting with DWSSM's mandate hence would be phased to provincial and local government post 15th periodic plan
2	Basic water service program-2 (Climate resilient water supply schemes)	<ul style="list-style-type: none"> ➤ demand based ➤ Heavily inclined towards constitutional rights to access to safe water ➤ empowerment of community capacity building programs at different stage of project cycle ➤ Focuses on Climate change adaptation and bringing the resilience in vulnerable communities ➤ Participation 10% (lesser than normal projects) 	<ul style="list-style-type: none"> ➤ To conduct study, research and programs that may develop appropriate technologies (Mandate-5) ➤ Monitor, evaluate the projects from social, economic and technical perspectives. (Mandate-6) ➤ Prepare and implement, or ensure implementation of programs that helps to conserve and protect ground water. (Mandate-9) ➤ Recognizing underground water table depletion as well as overall drying of water resources, initiate mitigating programs that address the ongoing phenomenon. (Mandate-13) ➤ Prepare initial environmental examination 	<ul style="list-style-type: none"> ➤ Annual rainfall lesser than 1200 mm / year ➤ Tentative population Terai :15000 above, Mountain 5000 above and Himalayan region 1000 above ➤ Any funding agencies interested in climate financing or advocator of right to water ➤ Maintenance and operation should be contributed through local government as well 	<ul style="list-style-type: none"> ➤ The operation modality and operational subsidies needs to be clearly stated ➤ Life cycle cost assessment and people's affordability needs to be clearly mentioned in the project reports ➤ Research on alternative technologies/energy sources should be emphasized ➤ Local governments role on projects operation /demand management techniques and

SN	Projects	Unique Selling Point of the project	Mandate of DWSSM it will contribute to	Potential Market identified from DWSSM /Potential funding agencies and options	Critical factors for successful implementation
			<p>and environmental impact evaluation for approval. (Mandate-17)</p> <ul style="list-style-type: none"> ➤ Implementation of Multi stage lift projects with complex technicalities in arid zone area. (Mandate-21) 		<p>awareness campaigns is significant</p> <ul style="list-style-type: none"> ➤ It should be linked with Ministry of forest and environment and calculation on its impact on CCA should come under projects outcome.
3	Third small town/urban water supply program	<ul style="list-style-type: none"> ➤ cost recovery principle. In line with the Government's 15 – Year Development Plan for Water Supply and Sanitation in Small Towns (15-Year plan) of 2009 ➤ More than 4,10,000 people already benefited through medium level of water service ➤ Has focused on operational components, institutional support to water utilities, preparation of Standard operating procedures. ➤ Has effective GESI components ➤ Has technical support of sector experts through consultancies in PMO ➤ High loan payment ratio (TDF as intermediary) ➤ empowerment of community capacity building programs at different stage of project cycle ➤ Solid waste management also seen as the integral component which would encourage the whole waste management. 	<ul style="list-style-type: none"> ➤ To construct, operate and manage the national, inter provincial and large drinking water supply and sanitation systems incorporating sewerage scheme and to implement or ensure implementation of service level up gradation of existing water supply projects in line with National Water Programs. (Mandate-3) ➤ Formulate and implement or ensure implementation of projects that provide high and medium level water supply services. (Mandate-10) ➤ Implementation and Regulation of large projects to be constructed under domestic and foreign financial assistance in the co-financing modality. (Mandate-19) 	<ul style="list-style-type: none"> ➤ Area already identified by Urban water policies ➤ Asian Development Bank currently providing the funds with Town Development Fund as intermediary. 	<ul style="list-style-type: none"> ➤ Proper linkage with local government as local governance operation act has clearly given role of operation to local governments ➤ Proper monitoring of KPI's ➤ Robust MIS system ➤ Asset management programs and system servicing

SN	Projects	Unique Selling Point of the project	Mandate of DWSSM it will contribute to	Potential Market identified from DWSSM /Potential funding agencies and options	Critical factors for successful implementation
		➤ Output based aid to support the marginalized group			
4	Water quality improvement program	<ul style="list-style-type: none"> ➤ Directly contributes to constitutional provision of access to safe water and SDG-6 ➤ Project is an activity to comply National drinking water quality standards (NDWQS) ➤ Has integrated Water Safety plan as the operational tool to comply the NDWQS 	<ul style="list-style-type: none"> ➤ Implement drinking water reform programs by taking measures to resolve the existing arsenic problems in Terai. (Mandate-14) ➤ Formulate and implement or ensure implementation of projects that provide high and medium level water supply services. (Mandate-10) 	<ul style="list-style-type: none"> ➤ Among the approximate 41000 schemes nationwide, the functionality level would be identified and functional but without treatment unit areas are the potential markets ➤ Funding can be proposed to World Health Organization or Other contributors with SDG 6.1. as agenda ➤ Local government in Capital maintenance and Operational expenditure if needed 	<ul style="list-style-type: none"> ➤ Proper linkage with local government as local governance operation act has clearly given role of operation to local governments ➤ Lab facilities within the reach of service providers ➤ Robust MIS system ➤ Asset management programs and system servicing
5	Water supply and sanitation co-financing program	<ul style="list-style-type: none"> ➤ Cost recovery principle. In line with the Government's 15 – Year Development Plan for Water Supply and Sanitation in Small Towns (15-Year plan) of 2009 ➤ Accepted and tested project by people already 60 projects under operation ➤ Medium/high level of water service ➤ The initial cash contribution of WUSCs is 10% as upfront cash contribution and the remaining 20% to be provided either in terms of cash or contribution. However, there is special provision for low human development index, where community cost sharing is 	<ul style="list-style-type: none"> ➤ Formulate and implement or ensure implementation of projects that provide high and medium level water supply services. (Mandate-10) ➤ Implementation and Regulation of large projects to be constructed under domestic and foreign financial assistance in the co-financing modality. (Mandate-19) ➤ Prepare initial environmental examination and environmental impact evaluation for approval. (Mandate-17) 	<ul style="list-style-type: none"> ➤ Urban areas where drinking water is already provided but the system needs rehabilitation, enhancement. ➤ Water Banks can be conceptualized to generate the investment ➤ TDF acting as intermediary in few areas ➤ Share model can be tried in areas where there is possibility of more cost recovery ➤ Only covering the viability funding ➤ Local governments for capital maintenance 	<ul style="list-style-type: none"> ➤ Proper linkage with local government as local governance operation act has clearly given role of operation to local governments ➤ Proper monitoring of KPI's ➤ Robust MIS system ➤ Asset management programs and system servicing

SN	Projects	Unique Selling Point of the project	Mandate of DWSSM it will contribute to	Potential Market identified from DWSSM /Potential funding agencies and options	Critical factors for successful implementation
		<p>limited to only 25% and Government funding increased to 75%</p> <p>➤ Sanitation components included</p>			
6 A	Sewerage construction and wastewater treatment program	<p>➤ focuses on construction of collection of sewage, transportation and treatment of sewerage in densely populated district headquarters, new municipalities and emerging town settlements</p> <p>➤ The project will be co-financed by municipalities/rural municipalities and operated by municipalities</p> <p>➤ Backstopped by DWSSM in selection of Operation modalities</p> <p>➤ Would be climate change resilient and focus towards reduction of GHG use of bio energy sources</p> <p>➤ Will support the protection of river health</p>	<p>➤ Protection of freshwater sources such as rivers, streams and other natural reservoirs. (Mandate-16)</p> <p>➤ Facilitation in the implementation of total sanitation program in free open defecation declared area. (Mandate-22)</p> <p>➤ Prepare initial environmental examination and environmental impact evaluation for approval. (Mandate-17)</p>	<p>➤ Urban centers</p> <p>➤ Private sectors can be attracted to fund this project.</p> <p>➤ Linkage with previously working private sector and value addition components can be used.</p> <p>➤ Climate financing agencies such as GCP, NDC funds</p>	<p>➤ Sustainable financing</p> <p>➤ Well thought operation modality (during the project preparation)</p> <p>➤ Preparation and customization of SOPs, guidelines, manuals etc.</p>
6 B	Fecal Sludge management project	<p>➤ focuses on construction of collection of sewage, transportation and treatment of sewerage in peri-urban areas</p> <p>➤ The project will be co-financed by municipalities/rural municipalities and operated by municipalities</p> <p>➤ Backstopped by DWSSM in selection of Operation modalities</p> <p>➤ Would be climate change resilient and focus towards</p>	<p>➤ Protection of freshwater sources such as rivers, streams and other natural reservoirs. (Mandate-16)</p> <p>➤ Facilitation in the implementation of total sanitation program in free open defecation declared area. (Mandate-22)</p> <p>➤ Prepare initial environmental examination and environmental impact</p>	<p>➤ Peri urban areas with scattered Household.</p> <p>➤ Private sectors can be attracted to fund this project.</p> <p>➤ Linkage with previously working private sector and value addition components can be used.</p> <p>➤ Climate financing agencies such as GCP, NDC funds</p>	<p>➤ Sustainable financing</p> <p>➤ Well thought operation modality (during the project preparation)</p> <p>➤ Preparation and customization of SOPs, guidelines, manuals etc.</p>

SN	Projects	Unique Selling Point of the project	Mandate of DWSSM it will contribute to	Potential Market identified from DWSSM /Potential funding agencies and options	Critical factors for successful implementation
		reduction of GHG use of bio energy sources ➤ Will support the protection of river health	evaluation for approval. (Mandate-17)		
7	Institutional and human resource development program	<ul style="list-style-type: none"> ➤ Will prepare the capacity of the sector to reach SDG-6/ capacity envisioned in Sector development plan draft. ➤ Will prepare the capacity for cross sectoral issue like CCA/DRM/GESI in WaSH sector ➤ Will act as the R&D program of the department ➤ Will provide accreditation of the trainings ➤ Will prepare the co-financing options in human development of service providers 	<ul style="list-style-type: none"> ➤ Implement human resources development program to develop skilled manpower required for the project. (Mandate-7) 	<ul style="list-style-type: none"> ➤ All the WaSH sector ➤ Sector stakeholders' funds working on software activities can be basketed. ➤ Service providers and Capacity building co-financing can be modelled. 	<ul style="list-style-type: none"> ➤ Sector owns NWSSTC ➤ Accreditation granted by government of Nepal ➤ Co-financing happens between utilities, provincial government, local government and NWSSTC. ➤ ICT is properly used by NWSSTC
8	National information management project	<ul style="list-style-type: none"> ➤ National MIS of WaSH sector ➤ Soon to be Decision support system (DSS) of all three tiers of governments ➤ Geo referenced M&E system with inclusion of WaSH plans and investment tracking 	<ul style="list-style-type: none"> ➤ Mobilize development partners through integrated data management. (Mandate-11) 	<ul style="list-style-type: none"> ➤ All the WaSH sector ➤ World Bank, ADB, private sector, data users can fund the MIS. 	<ul style="list-style-type: none"> ➤ Update owned by local bodies and integrated in grants of federal levels.
9	Utility up gradation project	<ul style="list-style-type: none"> ➤ Utility would be upgraded to achieve good KPIs through interventions (such as NRW reduction/ Smart Water Management) 	<ul style="list-style-type: none"> ➤ Formulate and implement or ensure implementation of projects that provide high and medium level water supply services. (Mandate-10) 	<ul style="list-style-type: none"> ➤ Utilities with low key performance indicators where small up gradation can improve the management ➤ World Bank, ADB, utilities themselves, Water Banks, TDF, shares can be used as the fund 	<ul style="list-style-type: none"> ➤ Grant and co-financing projects are linked with data update /MIS of DWSSM ➤ Utilities are willing to upgraded ➤ Capacity building under human resource development is in line with these projects

SN	Projects	Unique Selling Point of the project	Mandate of DWSSM it will contribute to	Potential Market identified from DWSSM /Potential funding agencies and options	Critical factors for successful implementation
10	River health management project	<ul style="list-style-type: none"> ➤ The project would be the link to integrate the wastewater effluent standard with environment 	<ul style="list-style-type: none"> ➤ Protection of freshwater sources such as rivers, streams and other natural reservoirs. (Mandate-16) 	<ul style="list-style-type: none"> ➤ Rivers with potential vulnerability in terms of effluent ➤ Climate funds can be used along with other regular funds 	<ul style="list-style-type: none"> ➤ Local government owns the project ➤ Government sees SDG 6.3 and beyond as the priority
11	Ground water recharge project	<ul style="list-style-type: none"> ➤ Would be the first project to protect the aquifers from quality and quantity point of view to sustain the water supply of the zone. 	<ul style="list-style-type: none"> ➤ Recognizing underground water table depletion as well as overall drying of water resources, initiate mitigating programs that address the ongoing phenomenon. (Mandate-13) 	<ul style="list-style-type: none"> ➤ Groundwater depleted areas with water stress in water supply ➤ Climate funds can be used along with other regular funds 	<ul style="list-style-type: none"> ➤ Groundwaters quality comes under ministries jurisdiction.
12	Waste management water project through PPP	<ul style="list-style-type: none"> ➤ Would be used to attract the private sector in sanitation financing. ➤ Would contribute to sanitation services sustainability 	<ul style="list-style-type: none"> ➤ Develop and implement public private partnerships. (Mandate-15) ➤ Implement mega multipurpose waste management and waste water treatment projects that require huge investment. (Mandate-8) 	<ul style="list-style-type: none"> ➤ Highly dense cities possibly provincial headquarters/Metropolitan cities/Sub-metropolitan cities ➤ Private sectors can be attracted to fund this project. ➤ Linkage with previously working private sector and value addition components can be used. ➤ Climate financing agencies such as GCP, NDC funds 	<ul style="list-style-type: none"> ➤ Public private partnership guidelines of ministry are formed ➤ Robust regulator ➤ Viability funding is channelized properly and fiscal policies of governments are made accordingly
13	High altitude glacier water project	<ul style="list-style-type: none"> ➤ Would be used to attract the private sector in water quality financing. ➤ Would add value as it will decrease the export import gap of the nation as well 	<ul style="list-style-type: none"> ➤ Develop and implement public private partnerships. (Mandate-15) 	<ul style="list-style-type: none"> ➤ Projects with spring sources in altitude higher than 3000M. ➤ Private sectors are the potential co-investors of the project. 	<ul style="list-style-type: none"> ➤ Private sectors are attracted in water export
14	Facilitation in WaSH plan preparation of local levels	<ul style="list-style-type: none"> ➤ WaSH plan would bring all the sectors on same page to reach 	<ul style="list-style-type: none"> ➤ Prepare Periodic Master Plan, Periodic Plan, technical assistance and 	<ul style="list-style-type: none"> ➤ All the local governments ➤ Sector stakeholders' resource can be basketed. 	<ul style="list-style-type: none"> ➤ Ministry provides the leadership

SN	Projects	Unique Selling Point of the project	Mandate of DWSSM it will contribute to	Potential Market identified from DWSSM /Potential funding agencies and options	Critical factors for successful implementation
		SDG's other sector goals and identify the investment gaps.	implementation of the water supply and sanitation projects by coordinating with local and provincial government. (Mandate-18) ➤ Develop and implement public/private partnerships. (Mandate-15)	➤ Local governments and provincial governments can do the funding	➤ Sector comes under the consensus.
15	Impounding reservoir projects	➤ Can be used as the big showcase project to attract private funding	➤ Implementation and Regulation of impounding reservoir-based water supply projects and bulk distribution water supply projects nation significance (mandate-20)	➤ Where the water could be sold to the utilities in lesser unit production cost. ➤ Private sector and PPP models can be used to bridge the investment gap.	➤ Public private partnership guidelines of ministry are formed ➤ Robust regulator ➤ Viability funding is channelized properly and fiscal policies of governments are made accordingly
16	DWSSM as a regulator	➤ No regulator in the sector yet.	➤ To perform regulatory role during the implementation of federal and province level projects. (Mandate-2)	➤ All the service providers of WaSH sectors	➤ Ministry of water supply approves the regulator guidelines soon.
17	Guidelines/rules/policy /periodic plan/preparation	➤ Will help to reach the sector goals	➤ Formulate policy on industrial-level drinking water and sewerage management. (Mandate-12) ➤ Prepare Periodic Master Plan, Periodic Plan, technical assistance and implementation of the water supply and sanitation projects by coordinating with local and provincial government. (Mandate-18) ➤ Facilitation in formulation and Update of drinking water and sanitation Acts, regulations, policies,	➤ All WaSH sector	➤ All the sector policies would be looked by departments/ initiated through department and department develops a separate section/DDG for policy formulations

SN	Projects	Unique Selling Point of the project	Mandate of DWSSM it will contribute to	Potential Market identified from DWSSM /Potential funding agencies and options	Critical factors for successful implementation
			Norms, Standard, Guidelines focusing on Climate Change Adaption and Disaster Management (Mandate-1)		

Chapter-5: Action plan and activities to prepare the favorable business ecosystem:

The business plan has identified that some activities needs to be completed to create the favorable business ecosystem for DWSSM. These action plans are grouped as short-term (2076-2078), medium -term (2076-2080) and long –term (2076-2085) based on their nature and importance. These businesses are the enablers of sectors pillars as shown in figure 3. The detailed action plan with indicators is presented in Table No.4

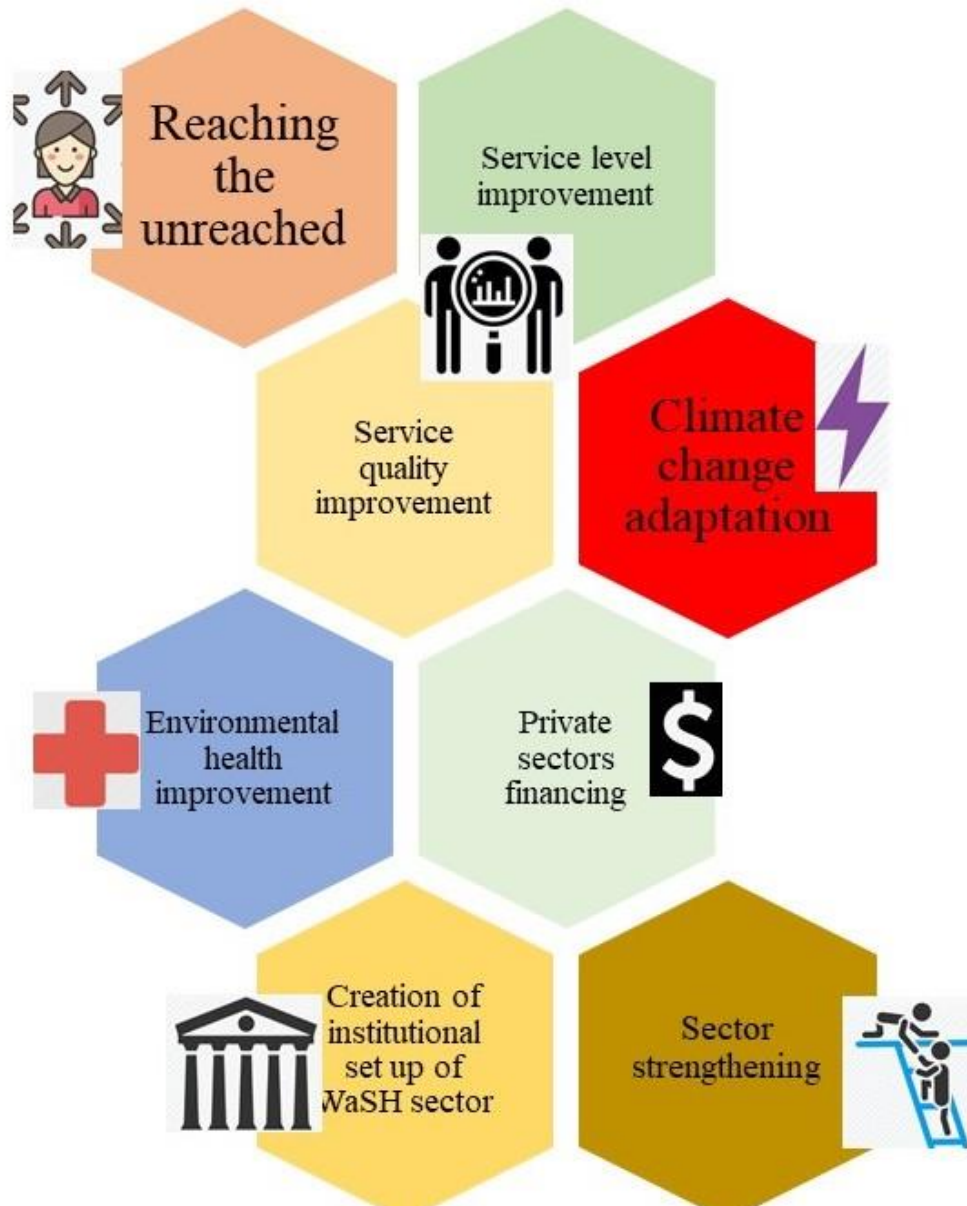


Figure: 3 Scope of Business Plan

Table: 4 Action plan and activities

Activity	Indicator	Terms
Enabler for reaching the unreached/climate change adaptation		
Project 1: Basic water supply schemes -2 (Climate resilient water supply schemes)		
Identify and conduct mapping of deprived community from basic drinking water and sanitation services through WaSH plan	1. WaSH plan of all 753 local governing bodies prepared	S
Identify the complex, water stress zone which qualifies the climate resilient water supply projects criteria	2. Water stress inventory of country prepared where multi stage pumping is required and groundwater depletion is happening.	S
Preparation of project bank, ranking giving weightage as per Hardship, Social status of the community, willingness to pay of community/local governing bodies willingness to invest	3. Guideline of ranking of climate resilient water supply schemes (identification of market area for this project) prepared for climate resilient water supply schemes	S
Preparation of MoU with local governing bodies with operational modalities and lifecycle support plan of local governing bodies	4. Different operation models templates for local governing bodies (making the buyer of this project easier to choose)	S
Enabler for Service level improvement		
Project 2: Third small town/urban water supply programs		
Enhance the project models based upon the learning of Small-town water supply project 1/2	5. System calibration guidelines prepared 6. Service center guidelines prepared 7. Handover takeover guidelines prepared 8. Systems categorization criteria prepared	S
Use of ICT would be scaled up	9. Preparation of Utilities day to day data link ups with national level MIS	L
Establishment of service centers	10. Service centers established in 7 provinces based upon system categorization criteria 11. 7 Private sectors approached for service centers in 7 provinces	M
Insurance of the systems	12. System insurance guidelines prepared 13. System insurance piloted in 10% of the small-town projects	M
Enabler for service level improvement/climate change adaptation		
Project 3: Water quality improvement program		
Mapping of water pollutants	14. Countrywide Source and pollutant mapping including seasonal variations prepared	M
Mapping of potential vulnerabilities in water qualities	15. Countrywide Source and potential pollutant risks, its frequency, seasonal variations prepared	L
Ranking of the project	16. Project ranking guidelines as per vulnerability, frequency, exposure prepared.	M
Enabler for service level improvement/climate change adaptation		
Project-4: Water Supply and sanitation co-financing program		
Preparation of project bank	17. Urban service providers with more than 50 million NRs. In their bank account for consistently 3 years identified and put in project bank. 18. Co-financing guidelines and criteria updated 19. MoU template with local government updated	M
Enabler for environmental health improvement/Enabler for private sector financing		
Project 5: Sewerage construction and wastewater treatment project/ Wastewater management modeled through PPP		

Activity	Indicator	Terms
Preparation of project bank	20. Urban city area previous district headquarters, market centers with population density more than 2000 people per square kilometer and drinking water consumption more than 100LPCD identified and put in the bank 21. Sewerage standards prepared 22. MoU template with local government prepared 23. Management models developed 24. Investment guidelines for private sectors prepared	S
Enabler for service quality improvement		
Project 6: Utility up gradation project		
preparation of water utility turn around framework of selected utilities	25. 10 projects identified between the completed co-financing and urban water supply projects 26. Facilitate the development of desired service level of the utility	S
Facilitation on preparation of investment plan from the utilities side	27. Facilitation in identification of preliminary actions (NRW reduction/efficient management etc.) 28. Identification of wastewater integration	M
Facilitation in investment search	29. Investment options manual prepared 30. Dialogue and session between investors and utilities conducted 31. Preparation of mediatory institution	L
Enabler for environmental health improvement		
Project-7: River health management project		
Mapping of water pollutants of river	32. Countrywide Source and pollutant mapping including seasonal variations prepared	M
Mapping of potential vulnerabilities affecting river health	33. Countrywide Source and potential pollutant risks, its frequency, seasonal variations prepared	L
Ranking of the project	34. Project ranking guidelines as per vulnerability, frequency, exposure prepared.	L
Enabler for environmental health improvement/climate change adaptation		
Project-8: Groundwater recharge project		
Mapping of depleted ground water sources used for water supply	35. Countrywide quantity and quality mapping of used groundwater sources prepared	M
Mapping of potential recharge aspects	36. Possible recharge catchments identified and recharge plan prepared	M
Ranking of the project	37. Project ranking guidelines as per vulnerability, frequency, exposure prepared.	L
Management models	38. MoU templates with concerned local governments prepared 39. Pay for ecosystem services guidelines prepared based on tariff generation	L
Enabler for private sector financing		
Project-9: High altitude glacier water project		
Mapping of glaciers and communities which can be served	40. Possible water sources in the glaciers above 3000M identified	S
Inventory preparation of potential water export companies	41. Private water companies' inventories prepared	S
Formulation of PPP criteria and viability funding criteria	42. PPP criteria and viability funding criteria developed	M
Ranking of the project	43. Ranking guidelines as per investment, population served and cost benefit ratio 44. MoU template with concerned local governments prepared	M

Activity	Indicator	Terms
Enabler for Private sector financing/Climate change adaptation		
Project-10: Impounding reservoir and bulk distribution projects		
Mapping of the location and served community	45. Possible impounding reservoir options identified to serve more than 200,000 people 46. Possible buyer water utilities identified	S
Ranking of the projects	47. Project ranking based upon the availability; viability measured as per cubic meter cost prepared	M
Enabler for creating the institutional setup of WaSH sector		
Plans: Development of WaSH plan/Local governments capacity strengthening in WaSH/DWSSM as regulator/preparation of plan policies documents		
	48. WaSH plan guideline prepared 49. The guidelines, criteria required in above mentioned projects prepared	M
Enabler for WaSH sector strengthening		
Institutional and human resource development program		
	50. Human resource development plan prepared 51. Business plan of the NWSSTC prepared	S

Chapter-6: Investment plan

The investment plan of DWSSM is based upon the trend of WaSH sector. The trend of investment in WaSH in last 5 years is shown in figure: 4.

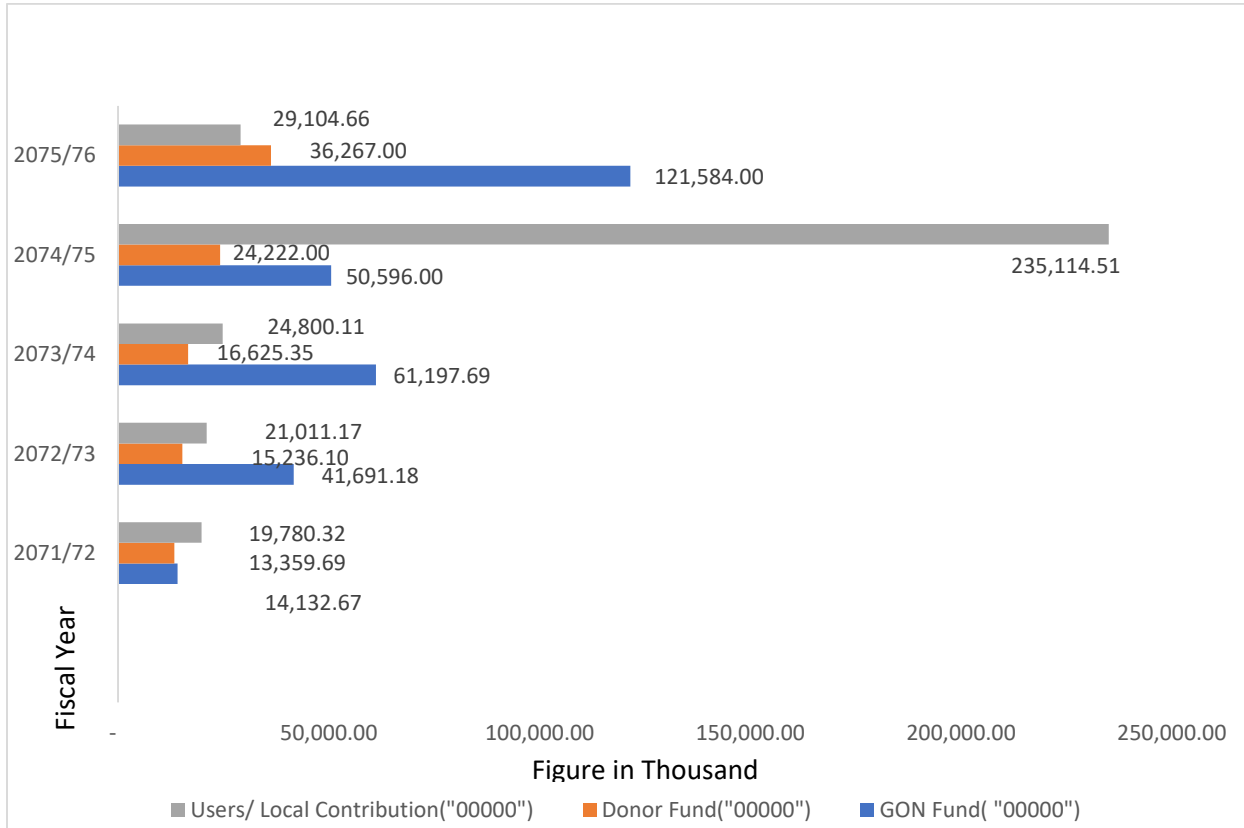


Figure: 4 Last Five Years Budget Expenditure Trend

Financial cost is estimated at the rate average per capita cost of different modality project implemented under DWSSM. The investment required to tap all the business is pretty high and the creation of favorable environments mentioned above seems critical in attracting the investments. The graph below in Figure: 5 illustrates that investment needs of DWSSM in upcoming years. Details of which can be found in Annex II. It can be figured out that present trend of growth shows that investment in FY 2080/81 BS will reach 40 billion only, whereas investment requirement is projected 83.4 billion (Refer Annex II for detail). It is empirical that government and department should think of investment options such as “Private sector financing”, “Climate financing” as the options to bridge the gaps. Investment summit might be one of the options to attract investors.

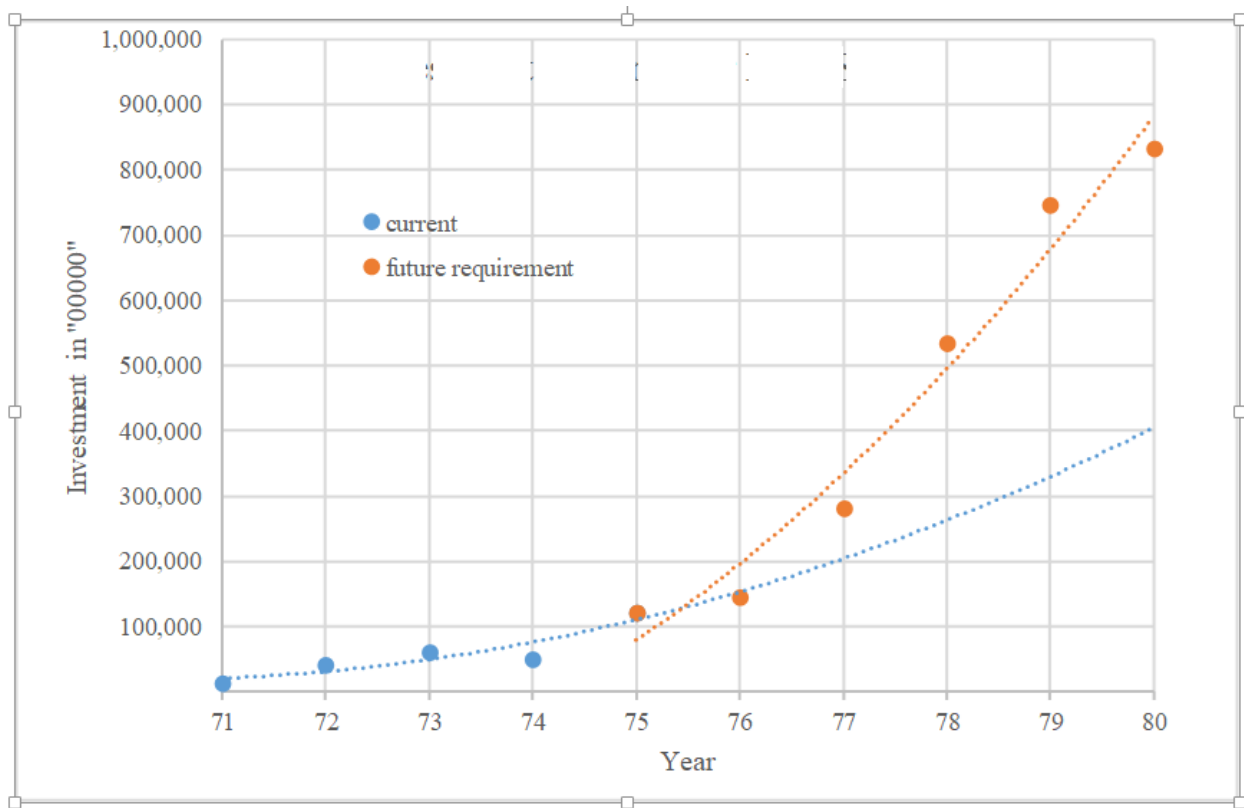


Figure: 5 Investment Required for DWSSM

DWSSM aims to contribute the major share of two main attributes of the sectors. Medium level water supply service and wastewater treatment. The share of the market predicted is presented in the figure below.

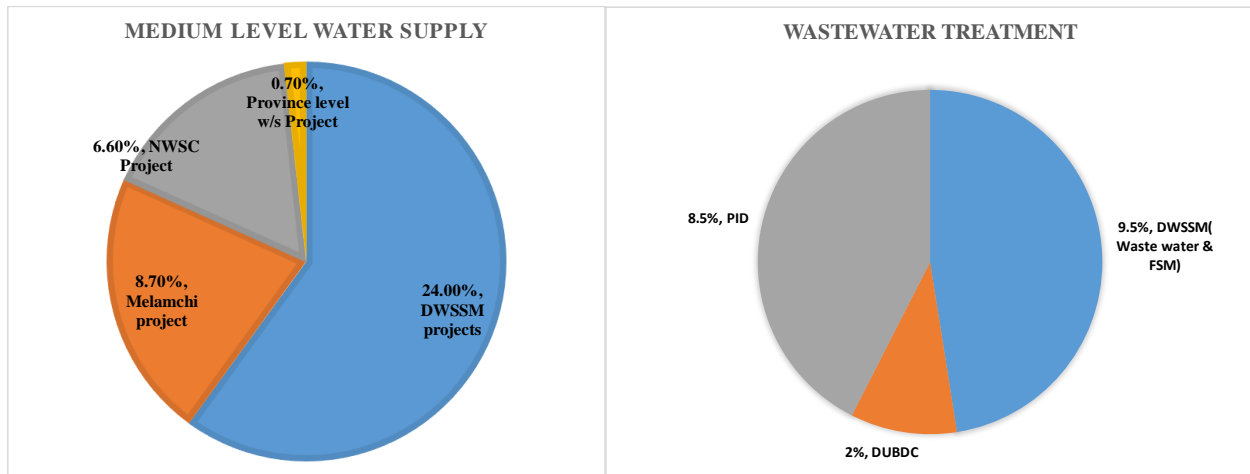


Figure: 6 Origination contribution

The total requirement of budget in next 5 years is NRs 2.54 trillion as presented in the Table: 5. Although, the bigger chunk of investment is in water supply basic and medium level services. It will initiate the few conceptual paradigms such as river health management, private sectors engagement in wastewater financing. (Refer Annex-II for details)

Table: 5 Five Year DWSSM Business (2076/77-2080/81 BS)

Five Year Business(2076/77-2080/81 BS)			
SN	Description	Amount("00000"	Percentage (%)
1	Basic Water Supply Projects	212,167	8%
2	Wastewater Treatment	497,613	20%
3	Enhancement Business	18,044	1%
4	Medium Level Water Supply	892,821	35%
5	Large Integrated W/s Project	550,000	22%
6	Water Quality improvement projects	83,618	3%
7	Recurrent cost	169,063	7%
8	Institutional & human resource development program	33,153	1.50%
9	National Information Management System	22,542	1%
10	Utility up-gradation project	22,542	1%
11	Others (new concept project)	42,443	2%
	Total	2,544,006	100%

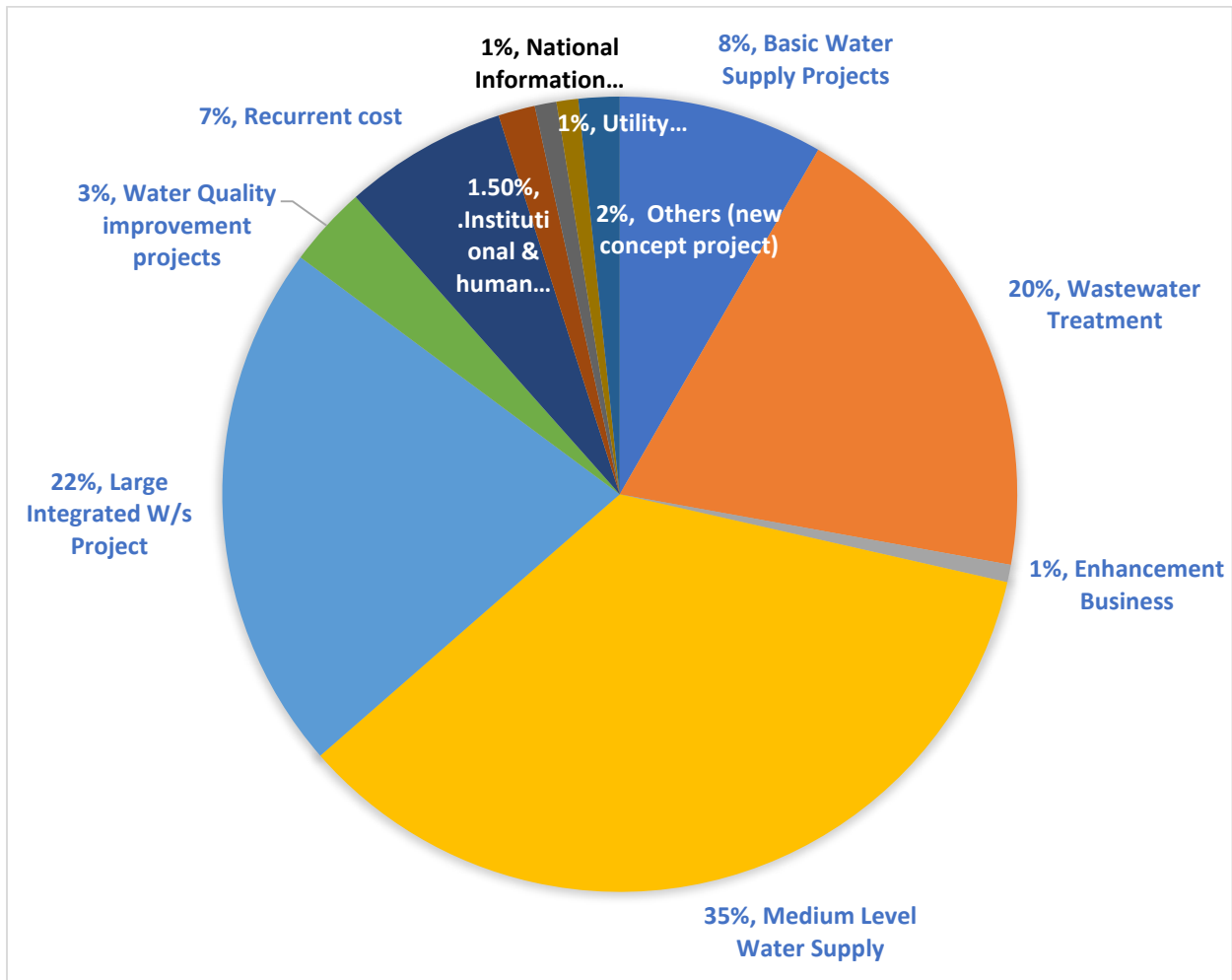


Figure: 7 Five Year DWSSM Business (2076/77-2080/81)

It is assumed that the piloting will gain momentum in future years for 2081/82-2085/86 the future investment plan is presented in the Table 6.

Table: 6 DWSSM Five Year Business (2081/82-2085/86)

Next Five Year Business(2085/86 BS)			
SN	Description	Amount("00000")	Percentage (%)
1	Wastewater Treatment	1,503,272.12	31%
2	Enhancement Business	59,215.33	1%
3	Medium Level Water Supply	1,772,711.02	36%
4	Storm Water for 25 Projects at Terai Region	145,110.93	3%
5	Large Integrated W/s Project		
6	Second Phase	400,000.00	8%
7	Impounding Reservoir	200,000.00	4%
8	Bulk Distribution	200,000.00	4%
9	Water Quality Improvement Project	98,477.53	2%
10	Recurrent cost	326,805.97	7%
11	Institutional & human resource development program	6,536,119,371.89	1.5%
12	National Information Management System	4,357,412,914.59	1%
13	Utility up gradation project	4,357,412,914.59	1%
14	Others (new concept project)	8,714,825,829.19	2%
	Total	4,923,876.59	100%

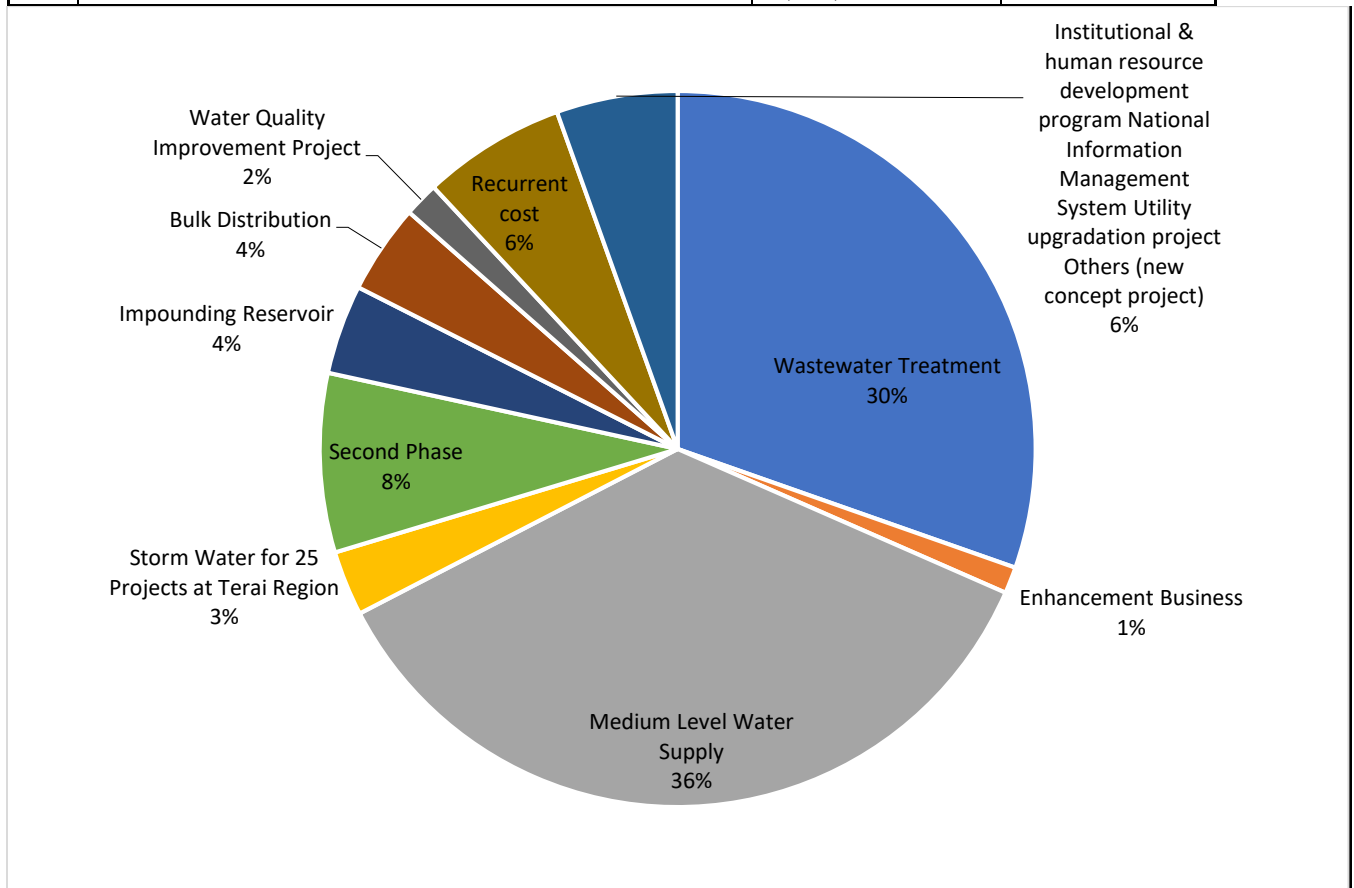


Figure: 8 DWSSM Five Year Business (2081/82-2085/86)

Chapter-7: Human resource strategy

The business products mentioned in chapter 4, 5 and 6 requires huge amount of human resource. Hence, it is imperative that the human resource should be managed, recruited or outsourced by DWSSM carefully. The possible strategy that can be followed for fulfilling the gap would be

1. Permanent arrangement- Permanent arrangement is through the recruitment process of government of Nepal
2. Consulting arrangement – The key technical expertise which is not required throughout the year can be hired through the consulting form.
3. Investors arrangement- The products which are supposed to be investment through private financing can be handled as design, build and operate model under the PPP which would save the recruitment hassle of the department and will also help to mitigate the human resource gap.
4. The human Resources for the DWSSM business plan is estimated on the basis of Urban Water Supply Project.

Total Human Resources Requirement for the DWSSM and Project Offices

Table: 7 Total Human Resources Requirement for the DWSSM and Project Offices

Category	Total	Permanent	Out Source Through Service Contract
Engineers	355	214	141
Safeguard (Env.+ Social)	31	6	25
Officer Admin.+Finance	32	18	14
Junior Staff	267	192	75
Support staff	178	-	178
Total	863	585	278

Table: 8 Total Human Requirement of Individual/Firm Consultants

Requirement of Individual/Firm Consultants -for DWSSM Business Plan								
Total Consultant Requirement for 5 Years					Total Consultant Requirement Per Year			
Category	PMC	Design	Supervision	Total	PMC	Design	Supervision	Total
Engineers	337	1,401	2,797	4,535	67	280	559	907
Safeguard(Env.+Social)	171	714	358	1,243	34	143	72	249
Officer Admin.+Finance	128	126	8	262	26	25	2	52
Junior Staff	114	512	4,829	5,455	23	102	966	1,091
Support staff	342	-	-	342	68	-	-	68
Total	1,091	2,754	7,992	11,837	218	551	1,598	2,367

The overall requirement of Human Resources for the DWSSM and project offices is presented in Table: 7 and the overall human resources of consultant's for different project is presented I Table: 8. The approved and proposed DWSSM organizational structure is presented in Annex III A & III B and overall estimation of human resources through consulting Firms / Individuals presented in Annex III C

Chapter 8: Monitoring and Evaluation

Monitoring and Evaluation (M&E) is an important component of any development project through which program and project managers can determine the extent to which project assistance addresses the needs and demands of the project beneficiaries, the efficiency and effectiveness of the project approach, policies, and procedures and the overall impacts of the project. The business plans are five year sectoral document in line with the assigned business, as well as with goals and objectives set forth by the periodic plans which includes performance indicators necessary for the measurement of outputs and outcomes. So there is need to carry out regular monitoring and evaluation on the basis of these indicators.

The DWSSM will carry out regular monitoring of its programs through Federal level project offices established in all seven provinces and specific units within the department.

Following the recommended framework of the NPC Guideline 2067, a Results Based Monitoring Framework for implementing the programs and activities as proposed in the business plan of DWSSM has been contextualized and produced in Annex I for output monitoring, and Annex II for budget monitoring.

Some of the measures required to institutionalize the proposed monitoring system, are identified as below;

- The project will be regularly monitored at different levels and the feedback so received will be used for improving the projects.
- Technical Auditing will be undertaken for some of the projects so as to monitor the implementation status at each stage of project execution.
- The economic and physical indicators related to impact and progress of the projects as well as their source of information will be defined to facilitate effective monitoring and evaluation.
- In addition to monitoring of the physical progress, arrangements will be made to gradually adopt the implementation process monitoring as well.
- On site monitoring on a quarterly basis will be done for large projects of national importance.
- Arrangements will be made for regular Independent and Public Auditing of the projects
- Collection of base line data before the commencement of projects will be highly emphasized and Post Evaluation/Impact Assessment will be done after the completion of projects. The lessons learnt will be used for the formulation of future projects.

REFERENCES

- 1, Nepal Water Supply, Sanitation and Hygiene Sector Development Plan (2016-2030), MOWS (Draft)
- 2 Needs Assessment, Costing and Financing Strategy for Sustainable Development Goals, NPC, 2018
- 3 Businesses Plan- Kathmandu, Upatyaka Khanepani Ltd (2012-2016)
4. Business Plan of Department of Urban Development and Building Construction, 2014
5. National Monitoring and Evaluation Guidelines, NPC, 2013
6. A compiled Program book of detailed project and program implementation in FY 2076/77 under Federal and Provincial Level, MOWS
7. Zanzibar Water Authority Strategic Business Plan (2013-2018)
8. Water Sector Strategic Development Plan (2012-20250
- 9 Financial and different project information data of DWSSM

Annex-I: Monitoring output and activities (yearly targets)

Major programs and sector	Sector Outcome	Major activities	Target FY (2076-2081)				
			FY076	FY 077	FY078	FY079	FY080/81
Program for providing basic water supply services in rural and urban areas	Basic water supply service is availed in rural and urban areas. (100% Coverage in 5 years)	Continue implementation of 146 on- going projects Start planning for implementation of 1314 new projects This program should be phased out as mentioned in business plan	146	219	292	365	438
Climate resilient water supply projects	Contribute to basic water supply as well as partly contribute to SDG 6.1, 6.2 and medium level service goal to 40%	Completion of 5 projects and based upon ranking initiation of 59 projects	5	10	12	17	20
Small town water supply projects	Contribute to SDG 6.1./6.2. and medium level service goal of 40%	Completion of 4 small town projects	4				
Urban water supply projects	Contribute to SDG 6.1./6.2.and medium level service goal of 40%	Completion of 22 urban projects			5	7	10
Co-financing water supply projects	Contribute to SDG 6.1./6.2 and medium level service goal of 40%	Completion of 10 projects initiation of other 85 projects	10	15	20	25	25
Water quality improvement projects	Contribute to SDG 6.1. and medium level service goal of 40%	Complete 96 projects initiate 1436 projects	96	240	295	350	450
Sewerage construction and wastewater treatment project	Contribute to SDG 6.2. and Safely managed sanitation service goal of 20%	Initiate 40 number sewerage management projects		5	8	12	15
Fecal sludge management projects	Contribute to SDG 6.2. and Safely managed sanitation service goal of 20%	Plan for 40 Number of FSM Projects.		5	8	12	15
Sewerage construction and wastewater treatment project	Contribute to SDG 6.2. and Safely managed	Initiate 1 project					1

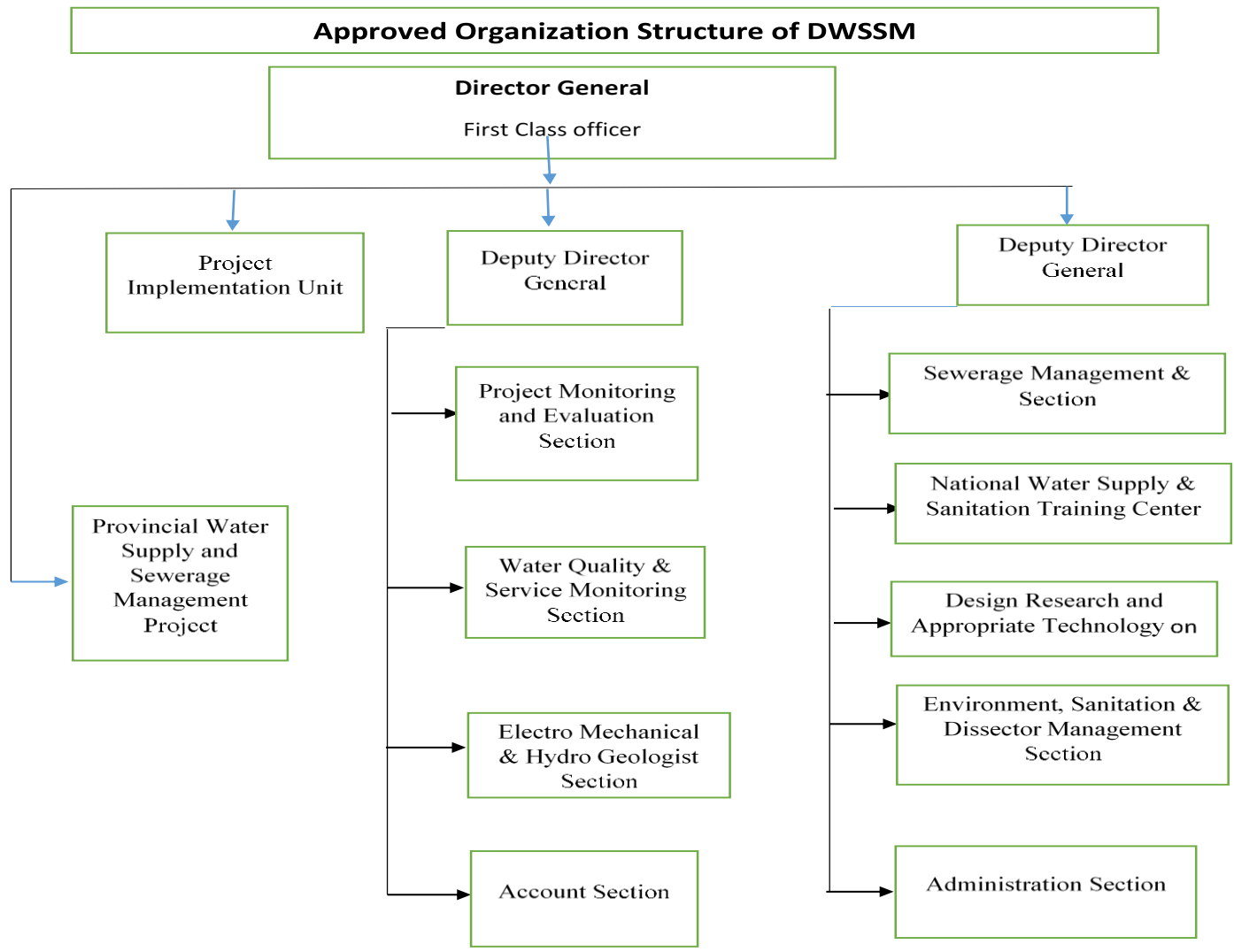
through annuity model /PPP	sanitation service goal of 20%							
Storm water drainage management project	Contribute to SDG 6.2 and 6.3 Safely managed sanitation service goal of 20% with added value	Initiate 5 projects					2	3
Large integrated water supply and sanitation projects	Contribute to SDG6.1/ 6.2 and 6.3 Medium level water goal of 40% Safely managed sanitation service goal of 20% with added value	Initiate 2 projects					1	1
Utility upgradation projects	Contribute to SDG 6.1. and medium level service goal of 40%	Initiate 7 pilot projects in 7 provinces				2	2	3
River health management project	Contribute to SDG 6.2. and Safely managed sanitation service goal of 20%	Initiate 1 pilot project						1
Ground water recharge project	Contribute to SDG6.1/ 6.6 (Restore water related ECO-System)	Initiate 1 pilot project						1
High altitude glacier water project	Attract Private sector in water Quality Financing	Initiate 1 pilot project						1
Bulk distribution /Impounding reservoir project	Contribute to SDG 6.1. and medium level service goal of 40%	Detailed design of 8 projects /initiate 1 pilot project						1
Development of WaSH plan/Local governments capacity strengthening in WaSH/DWSSM as regulator/preparation of plan policies documents	A Contribute to SDG 6.1/6.2 and 6.3	All 753 local governments WaSH plan preparation		150	603			
	B Contribute to SDG 6b	Capacity strengthening of all local government		Continuous				

Annex-II: Budget plan & Monitoring Framework

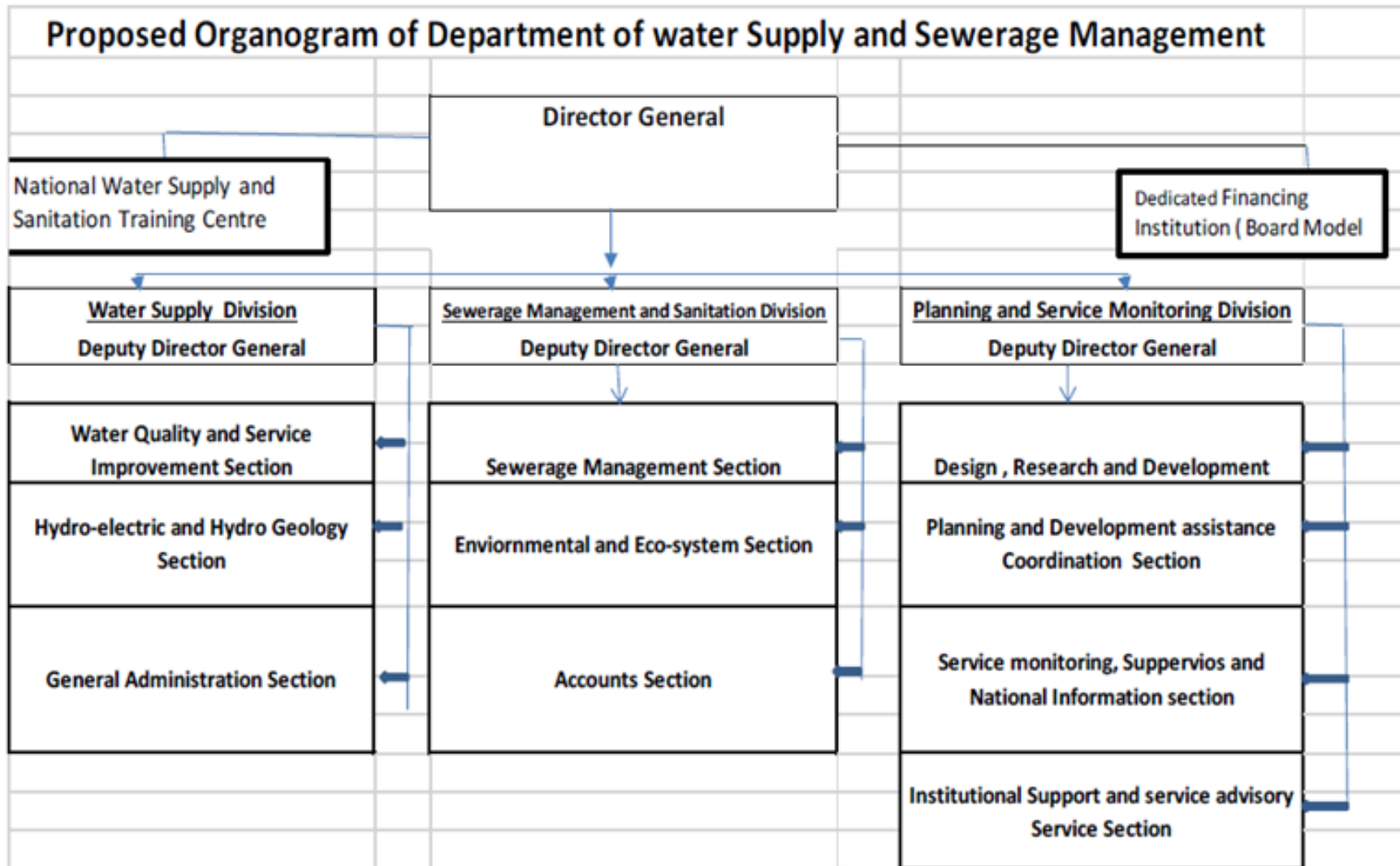
Major Programs wrt Sector Outcomes	Sub programs/ Projects	Total for FY 2019/20-2024/25 (BS 2076 to 2080) Amount in "00000"					
		2076	2077	2078I	2079	2080	Total
Program for providing basic water supply services in rural and urban areas	Water Supply Projects (GoN)	23,125	14,716	35,489	63,916	74,921	212,167
	No. of projects	146	219	292	365	438	1,460
Climate resilient water supply projects	Water Supply Rehab. Regulation and Reconst. Program		2,165	3,248	5,774	6,857	18,044
	No. of Projects	5	10	12	17	20	64
	a. Multistage pumping	29,196	42,696	64,044	113,857	135,205	384,998
	No. of Projects	5	8	10	15	17	55
Small town water supply projects	1.0Third Small Town Water Supply and Sanitation Project	15,035					15,035
	No. of Projects	4					4
Urban water supply projects	3.0 Urban Water Supply and Sanitation Sector Project	33,360	43,775	34,800	29,161	27,192	168,288
	No. of Projects			8	5	7	20
Co-financing water supply projects	Co-Financing Project	19,421	20,708	41,416	66,265	78,690	226,500
	No. of Projects	10	15	20	25	25	95
Water quality improvement projects	Water Quality Improvement Project	3,573	15,303	19,608	20,788	24,347	83,618
	No. of Projects	41	40	45	50	55	231
Sewerage construction and wastewater treatment project	Sewerage Construction Project	8,384	27,695	55,319	88,510	105,106	285,014
	No. of Project		5	8	12	15	40
Fecal sludge management projects	FSM Project		16,000	32,000	51,200	60,800	160,000
	No. of Project		5	10	10	15	40
Storm water drainage management project	Storm water drainage project		5,260	10,520	16,832	19,988	52,600
	No. of Project				2	3	5
Large integrated water supply projects	6.0 Large integrated water supply projects		55,000	165,000	165,000	165,000	550,000
	No. of Project				3	3	6
Others New concept projects 5% of subtotal							
River health management project			4,986	9,469	13,226	14,762	42,443
Ground water recharge project							

Major Programs wrt Sector Outcomes	Sub programs/ Projects	Total for FY 2019/20-2024/25 (BS 2076 to 2080) Amount in "00000"					
		2076	2077	2078I	2079	2080	Total
Waste water management project through PPP							
High altitude glacier water project							
Facilitation in WaSH plan preparation of Local levels							
Guidelines / rules/ policy preparation							
Development of WaSH plan/Local governments capacity strengthening in WaSH/DWSS as regulator/preparation of plan policies documents							
Utility up gradation project (NRW piloting, SWM etc);		1320	2,493	4,734	6,613	7,381	22,542
Recurrent cost (7.5% of the program cost)		9900	18,699	35,508	49,598	55,358	169,063
Institutional & Human Resources Development (1.5% of subtotal)		1,320	3,740	7,102	9,920	11,072	33,153
National Management Information System (1% of subtotal)		1320	2,493	4,734	6,613	7,381	22,542
	Grand Total	145,954	281,730	534,991	747,272	834,059	2,544,006

Annex III-A Approved Organization Structure of DWSSM



Annex III-B Proposed Organogram of DWSSM



Annex III-C Estimation of Human Resources through Consulting Firm/Individual

	Total Consultant Requirement				Annual Requirement year total			
	PMC	Design	Supervision	Total	PMC	Design	Supervision	Total
Team Leader	114	307	327	748	23	61	65	149
Design- Waste Water and Water Treatment	42	520	102	664	9	104	21	134
Safe Gurd- Social, Env.,GESI	171	714	358	1243	33	143	71	247
IT, SCADA and Quality Assurance	43	203	0	246	9	83	0	92
Financial Management, Office Manager	14	0	0	14	3	0	0	3
Electro Mechanical, Geo-Hydrologist	48	118	40	206	10	24	8	42
Procurement/ Contract Management	24			345	5	-	64	69
Quality Assurance	66	0	0	66	13	0	0	13
Structure Engineer ,	0	43	0	43	0	9	0	9
Supervision Engineers, quantity Surveyor	0	211	2006	2217	0	42	401	443
Total	522	2116	2833	5792	104	423	631	1,158
Support Engineer/ Overseer	114	512	3326	3952	23	102	665	790
Office Manager, Financial analysis, Social Mobilizer	114	126	1511	1751	23	25	303	351
Driver and Messenger	342	0	0	342	69	0	0	69
Total	570	638	4837	6045	115	127	968	1210
Grand Total	1,092	2,754	7,670	11,837	219	550	1,599	2,368

Notes:

All Basis are taken from Urban Water Supply Project with Following adjustment

1. No consultants are proposed for - Basic Water Supply Program.
2. Human Resource for Urban Water supply -Project is taken as proposed in the project document
3. Water Quality - Design consultants and Supervision consultants (50% of Urban Water Supply Project, Without PMC)
4. Impounding Reservoir- 20% of Urban Water Supply Project
5. Bulk Distribution- as same as Urban Water Supply Project
6. Co -Finance - as same as Urban Water Supply Project
7. Large Integrated Water Supply Project same as Urban Water Supply Project
8. FSM- Design and Supervision - 50% of urban water supply project, without PMC
9. Sewerage - Design and Supervision as Urban Water Supply Project Without PMC

Annex IV Gap Analysis and Possible Donors for Financing Support

Projects/Core Business Activities	Existing Policy/Guidelines	Issues	GAP	Recommended Action	Possible Donors
Utility Up gradation including (Smart Water Management, NRW reduction)		System damaged by other sector (Road construction, Municipality etc.)	Utility Up gradation policy/ Financing arrangement. Procedural guidelines.	Procedural guidelines on water safety plans and Utility up-gradation Coordination mechanism to be established	ADB. JICA WB
Water Quality Improvement Project	SOP for Water treatment plant. Nepal Drinking water Quality Standards. Water Supply Operation Directives.	Ineffective water quality surveillance mechanism.	Additional water quality parameters need to be addressed in WQ standard. Lack of expertise Human resources at utility level. Procedurals guidelines.	Procedural guidelines on water safety plan. Revision of Nepal Drinking Water Quality Standards 2062.	JICA, WHO. ADB
Urban Water Supply and Sanitation Sector Project	Third Small Town Guidelines. Urban water Supply and sanitation Policy	Land availability in Urban area. Upfront Cash Collection. Source Dispute. Number of Household Connection. Third Party damage (Road etc.). Required Manpower appointed by WUSCs. Unclear Role of WUSC.	No Implementation guideline for Urban Water Supply. Unclear role of WUSC. Lack of Coordination among Service provider	Robust policy guidelines, with respect to federal context. Tariff Fixation procedural Guidelines. Regulation and mechanism for support modality. Proper coordination mechanism to be established. Guidelines on operational modality of WUSC	ADB
Climate resilience large water supply project Multistage pumping	Project Implementation Guideline Water supply project.	Lack of updated Guidelines and Norms. High operational cost due to multi stage pumping.	High Financial Cost of the project. Less committee involved in design period.	Revision of Project Implementation Guidelines Design guidelines Operational Modality and O & M guideline. Revision in project implementation guidelines in the federal context	DFID , WB Green climate Fund GGI ADB
Co-Financing Project	Project Implementation Guideline for Co-finance project	Lack of Human Resources. Project Duplication.	Capacity Enhancement of utility operators.	Revision in project implementation guidelines in the federal context	ADB, WB, TDF

Projects/Core Business Activities	Existing Policy/ Guidelines	Issues	GAP	Recommended Action	Possible Donors
Large integrated water supply projects	Project concept note		Project funding and implementation and guidelines modalities.	Robust Implementation and operational guidelines	WB
Waste Water Collection and Treatment Facilities /Fecal Sludge Management.	Sewerage Policy, Institutional and regulatory framework for FSM.	Lack of skilled human Resources. Land Acquisition. Social issues and IEE. Reluctance of service recipient community. Financial Constrain due to high project cost.	Waste Water management guidelines. City wide Inclusive sanitation Planning guidelines. O&M Implementation guidelines. Land allocation.	O&M Procedural Guidelines. Design Guidelines. Land Arrangement. PPP Guideline to attract private sector funding.	WB, Bill Gate Melinda Foundation. ADB
Human Resources Development Project	NWSSTC Norms	Lack of Capacity Development Master plan. Lack of Experts. Conventional approach of Training	Sectoral Need Assessment Financial Resources. Well-equipped infrastructure, New Technology	Prepare a Master plan, Business Promotion plan, Need assessment study Co-financing among provincial, local govt. & utilities.	ADB, WB JICA WHO UNICEF UNDP
National Information Management Project		Lack of proper network to collect Data from Province and Local Level	Compatible Hardware and Software Application, Well Equipped infrastructure and Networking System.	Strengthening DWSSM, provincial ICT network, ownership by provincial and local level government	UNICEF JICA ADB WB
Innovative Demonstration Projects			Concept note about project not developed.	Concept note prepared and dialogue with donor's agencies	WB ADB JICA GGI DFID

Annex-V: Ongoing and proposed project details

URBAN WATER SUPPLY & SANITATION SECTOR PROJECT





S.No.	Projects Name
1	Aanadaban Shankarnagar CFWSSP, Rupandehi
2	Shankarnagar CFWSSP, Rupandehi
3	Nayagaun CFWSSP, Rupandehi
4	Pragatinagar-Paschim-Kalikanagar CFWSSP, Rupandehi
5	Chepe Khola CFWSSP, Gorkha
6	Mangadh CFWSSP, Morang
7	Urlabari CFWSSP, Morang
8	Chandragadhi CFWSSP, Jhapa
9	Amarapuri CFWSSP, Nawalparasi
10	Ratnanagar CFWSSP, Chitwan
11	Parsa CFWSSP, Chitwan
12	Dhangada CFWSSP, Chitwan
13	Sadakupur Bauniya CFWSSP, Kailali
14	Balewa Narayansthan CFWSSP, Baglung
15	Harnamadi Sukaure CFWSSP, Makwanpur
16	Lakhanpur CFWSSP, Jhapa
17	Jaluke CFWSSP, Nawalparasi
18	Lekhnath CFWSSP, Kaski
19	Jajarkot Khalanga CFWSSP, Jajarkot
20	Bindabasini CFWSSP, Bhaktapur
21	Parvat Beni CFWSSP, Parvat
22	Narayanpur CFWSSP, Dang
23	Besisahar CFWSSP, Lamjung
24	Kapasetaar Dulegauda CFWSSP, Tanahu
25	Narayani CFWSSP, Nawalparasi
26	Pravaas CFWSSP, Palpa
27	Bharatpokhari-Kristi-Nirmalpokhari CFWSSP, Kaski
28	Hariwon CFWSSP, Sarlahi
29	Chainpur CFWSSP, Sankhuwasabha
30	Chandragiri CFWSSP, Kathmandu
31	Kusumba CFWSSP, Bardiya
32	Gulariya CFWSSP, Bardiya
33	Mulpani Shankhadevi CFWSSP, Lalitpur
34	Baglung Nagar CFWSSP, Baglung
35	Devdaha CFWSSP, Rupandehi
36	Bartung Satunchali Madifat CFWSSP, Palpa
37	Bayerghari CFWSSP, Syanja
38	Hetauda CFWSSP, Makwanpur
39	Mangadh II CFWSSP, Morang
40	Aanadaban Shankarnagar II CFWSSP, Rupandehi
41	Shankarnagar II CFWSSP, Rupandehi
42	Bharatpur CFWSSP, Dang
43	Janakpur Pond Conservation Project, Dhanusha
44	Janakpur Drainage Project, Dhanusha
45	Urlabari CFWSSP II, Morang
46	Jakhadi Mai CFWSSP, Chitwan
47	Pathibhara Taplejung CFWSSP, Taplejung

S.No.	Projects Name
48	Tanki Sinwari CFWSSP, Morang
49	Imadole CFWSSP, Lalitpur
50	Beljhundi CFWSSP, Dang
51	Tulsipur CFWSSP, Dang
52	Ghorahi CFWSSP, Dang
53	Attariya CFWSSP, Kailali
54	Baddichaur CFWSSP, Surkhet
55	Budhanilkantha CFWSSP, Kathmandu
56	Bhadgaun CFWSSP, Tanahu
57	Chainpur Saatmuhane CFWSSP, Kaski
58	Jutpani CFWSSP, Chitwan
59	Bhulke Pakhribaas CFWSSP, Dhankuta
60	Ishworpur CFWSSP, Sarlahi
61	Mechi Nagar CFWSSP, Jhapa
62	Birtamode CFWSSP, Jhapa
63	Bardibaas CFWSSP, Mahottari
64	Mechi Nagar CFWSSP, Jhapa
65	Kalyanpur CFWSSP, Saptari
66	Salyantaar (Manpang Khola) CFWSSP, Dhading
67	Sipadole CFWSSP, Bhaktapur
68	Budhanilkantha CFWSSP, Kathmandu
69	Samathal Khola Salyan CFWSSP, Kaski
70	Putali Bazar CFWSSP, Syanja
71	Khairanitaar CFWSSP, Tanahu
72	Paatichaur CFWSSP, Parvat
73	Haripau Dharmi CFWSSP, Kaski
74	Bardaghat CFWSSP, Nawalparasi
75	Agyauli CFWSSP, Nawalparasi
76	Chaukune CFWSSP, Surkhet
77	Khajura CFWSSP, Banke
78	Amritpur CFWSSP, Dang
79	Pyuthan Sworgadwari CFWSSP, Pyuthan
80	Jutpani CFWSSP, Chitwan
81	Dhading-Besi CFWSSP, Dhading
82	Phedi-Khola CFWSSP, Syanja
83	Labdi (Ladi) Khola CFWSSP, Tanahu
84	Sundar Bazar CFWSSP, Lamjung
85	Kolti Bajura CFWSSP, Bajura
86	Lamki CFWSSP, Kailali
87	Sukhad- Darakh CFWSSP, Kailali
88	Kirtipur CFWSSP, Kathmandu
89	Goldhunga CFWSSP, Kathmandu
90	Karahiya CFWSSP, Rupandehi
91	Belkot Gadhi CFWSSP, Nuwakot



SN	District	Province	Project's Name
1	Ilam	1	Ilam Municipality Sewerage Construction and Treatment Project
2	Jhapa		Damak Municipality Sewerage Construction and Treatment Project
3			Bhadrapur Sewerage Construction and Treatment Project
4			Sundar Haraicha Sewerage Construction and Treatment Project
5	Morang		Letang Sewerage Construction and Treatment Project
6			Urlabari Sewerage Construction and Treatment Project
7			Pathari Sewerage Construction and Treatment Project
8			Sunsari
9	Dhankuta		Hile Sewerage Construction and Treatment Project
10	Bhojpur		Bhojpur Sewerage Construction and Treatment Project

11	Sankhuwasabha		Khadibari Sewerage Construction and Treatment Project
12			Chainpur Sewerage Construction and Treatment Project
13	Solukhumbu		Salleri Sewerage Construction and Treatment Project
14	Saptari	2	Rajbiraj Sewerage Construction and Treatment Project
15	Siraha		Golbazar Sewerage Construction and Treatment Project
16	Dhanusha		Janakpur Sub-metropolitan Sewerage Construction and Treatment Project
17			Chireswor Sewerage Construction and Treatment Project
18	Mahottari		Bardibas Municipality Sewerage Construction and Treatment Project
19			Jaleswor Sewerage Construction and Treatment Project
20	Sarlahi		Malangawa Sewerage Construction and Treatment Project
21	Rautahat		Gaur Sewerage Construction and Treatment Project
22	Bara		Kalaiya Sewerage Construction and Treatment Project
23	Sindhuli		3
24	Ramechaap	Manthali Sewerage Construction and Treatment Project	
25	Kavrepalanchowk	Dhulikhel Sewerage Construction and Treatment Project	
26		Banepa Sewerage Construction and Treatment Project	
27	Sindhupalchowk	Chautara Sewerage Construction and Treatment Project	
28	Lalitpur	Thaiba Sewerage Construction and Treatment Project	
29		Harisiddhi Sewerage Construction and Treatment Project	
30	Bhaktapur	Balkot Sewerage Construction and Treatment Project	
31	Bhaktapur	Katunje Sewerage Construction and Treatment Project	
32	Kathmandu	Sankharapur Sewerage Construction and Treatment Project	
33	Nuwakot	Bidur Sewerage Construction and Treatment Project	



Program/Project: Climate Favorable Large Water Supply Project			
SN	Name of Project	Province	District
1	Kanyam Panchakanya Water Supply Project	1	Ilam
2	Aangna Mauwa-Panchthar Large Pumping W.S.P., Panchthar		Panchthar
3	Yasok Large Pumping W.S.P., Panchthar		Panchthar
4	Subhang (Large Pumping) Water Supply and Sanitation Project		Panchthar
5	Hilihang VDC 1-4 and Amarpur (large Pumping) W.S.P.		Panchthar
6	Halesi Area Khotang (Large Pumping) .S.P.	1	Khotang
7	Sunkoshi Water Supply Project		Udaypur
8	Bardibas Water Supply Project		2
9	Nangedanda (Large Pumping) W.S.P.		Sindhuli
10	Ramechhap (Large Pumping) W.S.P.		Ramechhap

11	Pakarbass Large Pumping W.S.P., Ramechhap	3	Ramechhap
12	Rakathum Water Supply Project		Ramechhap
13	Chourikhola Dhokadanda Large Pumping W.S.P., Kavre		Kavrepalancho wk
14	Timal Large (Drought Area) Water Supply and Sanitation Project		Kavrepalancho wk
15	Mandan Devpur Water Supply Project		Kavrepalancho wk
16	Bhakundeswor Khanalthok Kaksi Dapcha Area Large Water Supply Project Kavre		Kavrepalancho wk
17	Mahadev Khola Wetland Project		Bhaktapur
18	Harre Tuniwote Dundikhola Large Pumping W.S.P., Sindhupalchowk		Sindhupalchowk
19	Indrawati VDC Large Water Supply Project		Sindhupalchowk
20	Naukuntha Water Supply Project		Rasuwa
21	Daraudi-Gorkha, Gorkha (Large Pumping) Water Supply and Sanitation Project	Gandaki	Gorkha
22	Gorkha Municipality 10 Daraudi Biramkali Pumping W.S.P.		Gorkha
23	Palungtar (1-10) (Large Pumping) Water Supply and Sanitation Project		Gorkha
24	Ajirkot (1-5) (Large Pumping) Water Supply and Sanitation Project		Gorkha
25	Fujel (Large Pumping) Water Supply and Sanitation Project, Gandaki VDC 3,4		Gorkha
26	Landhruk Annapurna VDC Large Water Supply Project		Kaski
27	Bandipur (Large Pumping) W.S.P.		Tanahun
28	Bhanu Municipality 1-4 (Large Pumping) W.S.P.		Tanahun
29	Tansen-Kaligandaki Palpa (Large Pumping) Water and Sanitation Project		Palpa
30	Gulmi Large Pumping W.S.P., Gulmi		Gulmi

31	Resunga Water Supply Project	5	Gulmi
32	Hade Khola Chidika Large Pumping W.S.P., Arghakhachi		Arghakhachi
33	Patu Khola Wetland Project		Dang
34	Balle Pratapkot Water Supply Project		Dang
35	Bijeshwori Chourjahari Large Pumping W.S.P., Rukum	Karnali	Rukum
36	Sharada Municipality Water Supply Project		Salyan
37	Bheri Pumping-Surkhet Valley (Large Pumping) Water Supply and Sanitation Project		Surkhet
38	Bheri Ganga Chincu Water Supply Project		Surkhet
39	Guruwakot Water Supply Project		Surkhet
40	Upper Dhungeswor Lohorekhola Waika Dullu Lifting W.S.P.		Dailekh
41	Dhauligad (Large Pumping) Water Supply and Sanitation Project		Jumla
42	Sarukot Large W.S.P.		Mugu
43	Chulimalika (Large Pumping) Water Supply and Sanitation Project		Kalikot
44	Palata (Large Pumping) W.S.P		Kalikot
45	Chamelia Water Supply Project, Kudikusuda	Sudur Paschim	Darchula
46	Works including Solar Installation in Countrywide Lifting Water Supply Project		