

Environmental and Social Management Framework (ESMF)

Lao: Water Supply and Sanitation Project (P164901)

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Transportation (as a leading implementing agency), in consultation with the
Department of Hygiene and Health Promotion, Ministry of Health**

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ABBREVIATIONS AND ACRONYMS

AP	Affected Persons
ARAP	Abbreviated Resettlement Action Plan
CERC	Contingency emergency response
CITES	Convention on International Trade in Endangered Species
CLTS	Community Led Total Sanitation
CMU	Component Management Unit
DEDP	Division of Environment and Disaster Protection
DMS	Detailed Measurement Survey
DONRE	District Office of Natural Resources and Environment
DPWT	Provincial Department of Public Works and Transport
DWS	Department of Water Supply
EA	Environmental Assessment
ECC	Environmental Compliance Certificate
ECoP	Environmental Code of Practice
EIA	Environmental Impact Assessment
EGDF	Ethnic Groups Development Framework
EGDP	Ethnic Groups Development Plan
EHS	Environmental Health and Safety
EMMP	Environmental Management and Monitoring Plan
EPL	Environmental Protection Law of 1999
ESF	Environmental and Social Framework
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
GOL	Government of Lao PDR
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
IBA	Important Bird Areas
IEE	Initial Environmental Examination
IEM	Independent External Monitor
LWU	Lao Women's Union
masl	Meters above sea level
MOH	Ministry of Health
MONRE	Ministry of Natural Resources and Environment
MPI	Ministry of Public Investment
MPWT	Ministry of Public Works and Transport
NBCA	National Biodiversity Conservation Area
NGOs	None Government Organizations
NPA	National Protected Area
NPSE	Nam Papa State Enterprise
NTFP	None Timber Forest Products
OP/BP	The World Bank's Operational Policy/Bank Procedure
OPWT	District Office of Public Works and Transport
PCB	Polychlorinated biphenyls
PFA	Protection Forest Area
PIU	Project Implementation Unit
PMU	Project Management Unit
PNP	Provincial Nam Papa
PONRE	Provincial Office of Natural Resources and Environment
PSC	Project Steering Committee
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
SBCC	Social Behavior Change and Communications
VDC	Village Development Committee
WASH	Water Supply, Sanitation and Hygiene
WREA	Water Resources and Environment Administration
WSSP	Water Supply and Sanitation Project
WTP	Water Treatment Plant

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1 EXECUTIVE SUMMARY

1. This document is the Environmental and Social Management Framework (ESMF) for the Lao PDR Water Supply and Sanitation Project (WSSP) (P164901) which is being prepared by the Ministry of Public Works and Transport (MPWT), who will lead implementation, overall supervision, execution, and management of the project. This has been prepared in consultation with Ministry of Health, who is responsible for the sustainability of community water supply, sanitation and hygiene support.
2. A Stakeholder Engagement Assessment was commissioned January 31 to February 16, 2018. The World Bank team had the opportunity to discuss the water supply and sanitation project initiatives with the Department of Water Supply of MPWT and the Nam Saat of the Ministry of Health (MOH).
3. The project will support improved water supply service delivery, sanitation and hygiene, and implementation support and sector capacity building. The project will be implemented in twelve districts in Xieng Khouang, Houaphan, Oudomxay, and Phongsaly provinces. The project will include construction of small scale water supply system and sanitation infrastructure which may cause adverse environmental or social impacts. In June 2018 feasibility studies were undertaken to identify candidate water supply sub-projects within the recipient provinces. Five villages were identified in Houaphan, these include B. Phanxan, B. Meung Na, B. Pue, B. Lan Xieng and B. Soplao. In Oudomxay two villages were identified B. Ano and B. Mouteun. In Phongsaly four villages were assessed: B. Longnakao, B. Sophun, B. Sinxay and B. Namly. And in Xieng Khouang two villages were assessed B. Namtea and B. Phienghong. Different ethnic groups such as Khmu, Akha, Hmong, Lao Phong, Tai-dam, and Lao Lum will be the beneficiaries of this Project.
4. The Environmental Code of Practice (ECoP) has been developed in Annex 3 for project activities such as the construction and rehabilitation of water supply and sanitation facilities. The ECoPs aim to ensure compliance with the nation laws and World Bank OP 4.01 environmental safe guard policy and province guidance to good engineering and housekeeping practices. It sets out standard practices and procedure for managing the potential negative impacts on local environment and rural communities of all civil works to be carried out for small scale subprojects in the villages or Kumbans.
5. Since the SG policies area triggered, the ESMF is therefore prepared to address the impacts to meet the requirements of the Lao Government and the World Bank's safeguard policies on Environmental Assessment (Ministerial Instructions No. 8029 (for IEE) and No. 8030 (for EIA), WB's OP/BP 4.01), Indigenous Peoples (WB's OP/BP 4.10), Physical Cultural Resources (WB's OP/BP 4.11), Involuntary Resettlement (Decree No. 86/GoL and WB's OP/BP 4.12 and Projects on International Waterways WB's OP/BP 7.5.
6. The ESMF is designed to describe the process that will address possible environmental and social impacts of all investments and activities to be financed under the Project once specific locations and technical details of the selected investments are identified for Project implementation. The ESMF describes the safeguard screening and review process as well as safeguard actions to be carried out to mitigate potential negative impacts, while the annexes provide background information and technical guidelines for the preparation of site specific Environmental and Social Management Plan (ESMP) for a large subproject, in the emerging towns along with other requirements.
7. The ESMF includes an Ethnic Groups Development Framework (EGDF) and a Resettlement Policy Framework (RPF) to be applied for the subproject that involves ethnic groups and/or land acquisition and resettlement to be implemented under the Project. After the World Bank

clearance the final ESMF and annexes (both in English and Lao) will be disclosed again in MPWT website and make it available in the Project provinces.

8. In order to ensure that the environmental and social issues are addressed properly in accordance and in compliance with the World Bank Safeguards Policies, all project activities in particular the construction of new water supply system including raw water intakes, water treatment plants, storage tanks or towers, and pumping stations; new pipe laying or pipe replacement (usually along road alignments); and construction of public sanitation facilities shall undergo screening, assessment, review, and clearance process before execution of the physical activities shall undergo screening, assessment, review, and clearance process before execution of the physical activities. The project will use a structured approach to environmental and social management to allow the project development process, follow the hierarchy of avoidance, minimization, compensation/mitigation for negative impacts and enhancement of positive impacts where practically feasible and advantageous. This document describes the process for ensuring that environmental and social concerns are adequately addressed through the institutional arrangements and procedures used by the project for managing the identification, preparation, approval, and implementation of subprojects. Detailed environmental and social safeguard process are in given.

2 INTRODUCTION

9. This document is the ESMF for the WSSP which is being prepared by the MPWT through the Department of Water Supply, Nam Papa State Enterprises in the 4 target provinces, ESD/PTI for possible financing by the World Bank. This has been prepared in consultation with Ministry of Health, who is responsible for the sustainability of community water supply, sanitation and hygiene support.
10. The project will explore the potential for implementation through the MPWT organizational structure and its institutional arrangements by harmonizing with the Bank financed Lao Road Sector Project which will also be implemented in the same project provinces of Xieng Khouang, Houaphan, Oudomxay and Phongsaly. This will allow the project to leverage the existing capacity of the MPWT in implementing projects in accordance with World Bank procedures and processes, including environmental and social safeguards.
11. The ESMF has been prepared to meet the World Bank's environmental and social safeguard policies. The ESMF is designed to describe the process that will identify and address possible environmental and social impacts of all investments and activities to be financed under the Project once specific locations and technical details of the selected investments are identified. The ESMF describes the safeguard screening and review process as well as safeguard actions to be carried out to mitigate the potential negative impacts while the annexes provide background information and technical guidelines for the preparation of site specific ESMP and ECoP for a subproject as well as other requirements. The ESMP will be developed for the large subprojects to be constructed in the emerging towns while the ECOPECOP is developed and will be used for the smaller scale subprojects in the communities and/or Kumban levels.
12. This ESMF also includes an EGDF and a RPF to be applied for the subproject that involves ethnic groups and/or land acquisition and resettlement to be implemented under the Project.
13. The WSSP will improve the performance of Provincial NPSEs and expand access to safe piped water supply, sanitation and hygiene for residents of small towns and villages in 12 districts of Xieng Khouang, Houaphan, Oudomxay, and Phongsaly provinces in consistent with the Government's urban water supply and sanitation sector policy and investment plan. The project will include small scale water supply system and sanitation infrastructure.

14. This document sets out the responsibilities and procedures for environmental and social assessment of WSSP subprojects based on relevant laws of the Government of Lao PDR (GOL) as stated in the Environmental Protection Law (EPL) of 1999 as amended in 2013 including the Lao Initial Environmental Examination (IEE) Instruction of 2013, and the World Bank Safeguard Policies.
15. The guidelines in this document are intended to provide for effective integration of environmental and social assessment, management and planning into the preparation and implementation of subprojects.

2.1 NEED FOR AN ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

16. To be eligible for World Bank financing, the Project will have to comply with the World Bank policies on environmental and social safeguards and information disclosure. Given the small nature of works for NPSEs to be implemented, the potential negative impacts of the Project on local environment and local communities are expected to be minor, localized, temporary, and could be mitigated. The ESMF requires safeguard screening and categorization as well as preparation of an ECoP, ESMP, a RAP or abbreviated RAP (ARAP) if land acquisition and/or involuntary resettlement is involved, and an EGDP if ethnic groups are present in the Project area.

2.2 OBJECTIVE, SCOPE, AND METHOD

17. The main objective of the ESMF is to ensure that the Project activities will not create adverse impacts on local community and/or local environment and the residual and/or unavoidable impacts will be adequately mitigated through the mitigation measures proposed for the Project. The ESMF provides guidance to the Project team, especially the provincial Department of Public Works and Transport (DPWT), NPSEs, Nam Saat of Department of Hygiene and Health Promotion and their consultants, on safeguard actions to be applied during the implementation of the Project. The ESMF was prepared in line with the GOL related regulations and World Bank safeguard policies. The ESMF will be publicly disclosed in the MPWT's, MOH's, and WB's website. This document is considered a living document and can be modified in close consultation with the World Bank, and the World Bank clearance of the revised ESMF will be necessary.

3 PROJECT DESCRIPTION

3.1 SCOPE OF THE PROJECT

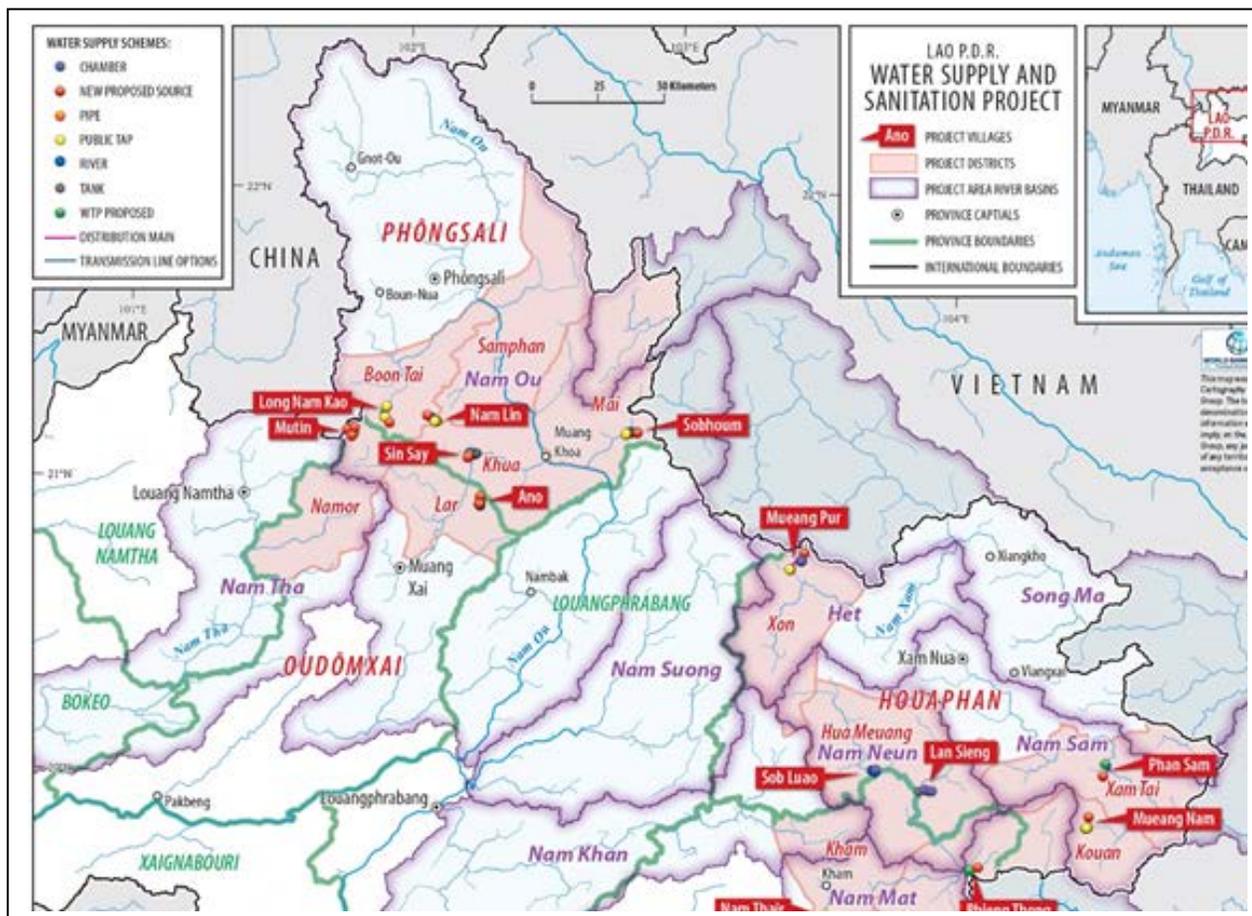
18. The project will support improvement of water supply service delivery system, sanitation and hygiene, and implementation support and sector capacity building. The project will be implemented in twelve districts in Xieng Khouang, Houaphan, Oudomxay, and Phongsaly Provinces. Preliminary list of the target districts and villages is summarized in Table 3.1.

Table 3-1: Initial subprojects location

No.	Province/District	Village	Population 2015	Water sources
I	Xiengkhuang Province			
1.	Kham District	1. Namthea	2884	Houay Koxor
2.	Nonghed District	2. Phienghong	1075	Houay Namlan
II	Oudomxay			

3.	Namo District	3. Mouteun	1150	Houay Pung or Houay Sa
4.	La District	4. Ano	1717	Houay Saphouk located lower than village
III	Houaphanh			
5.	Houameuang District	5. Lan Xieng	1938	Houay Sadug
		6. Sop Lao	1032	Houay Lao
6.	Xon District	7. Meuang Peu, Na Kwien, Sop Tiew	1565	Houay Pung or Houay Keun
7.	Xamtai District	8. Phamxam	1652	Houay Saneng
8.	Kouan District	9. Meuang Na	1009	Houay Kouang
IV	Phongsaly			
9.	Mai District	10. Sophun	726	Houay Tam
10.	Koua District	11. Sinxay	616	Houay Phea
11.	Samphan District	12. Namly	1026	Houay Chaloung
12.	Bountai District	13. Longnaikao	973	Houay Lean

Figure 3-1: Map of the proposed target provinces



3.2 PROJECT DESCRIPTION

19. The project will adopt a demand responsive approach, where communities will agree upfront to the project principles. The project has the following four components:

Component 1: Community empowerment and integrated WASH delivery

1 (a) Implementation of integrated WASH project cycle

Two types of water supply systems: (i) community-based systems, managed by the communities themselves and supported by a sustainability unit within Nam Saat; and (ii) larger villages, kumban, emerging towns managed by PNPs will be constructed. The implementation of the project will take place systematically through the integrated project cycle that incorporates water supply, sanitation, hygiene and nutrition behavior change. Community members will be involved in all stages of project cycle: promotion, design, Community Led Total Sanitation (CLTS), construction, post civil works and post construction support.

1 (b) Water supply infrastructure

The water supply system for the emerging towns, kumban, large villages will include a water intake, water treatment plant and raw water transmission line, storage tanks and distribution systems. Most systems will be gravity fed. The project will finance works, either construction of new water supply systems or rehabilitation of existing systems.

1 (c) Capacity building of Department of Water Supply (DWS) for sustainability

The project will support the establishment of support units within the PNPs at provincial, district and subdistrict levels, to enable them to fulfill their roles for planning, asset management, and monitoring. Technical assistance activities will include the development of Provincial Business Plans, development of tariff policy, and technical assistance and training for the establishment of a unit to support the sustainability of emerging town systems. The selection of appropriate monitoring instruments, training on its use and maintenance, the storage and processing of the data for decision making and the quality control and assurance will be developed. The project will support corporate planning, training for O&M and on the job training through the implementation of the project.

Component 2: Community water supply, sanitation and hygiene

This component will finance: (i) capacity building for sustainability of community water supply and support for Component 1 implementation; (ii) guidelines for self supply for remote villages, (iii) guidelines for sanitation and SBCC, (iv) district-wide sanitation plans; (v) strengthening of sanitation supply chains; (vi) water quality monitoring and surveillance system, (vii) sector M&E system; (viii) national awareness campaigns; (ix) orientation and training of provincial and district staff; (x) rolling out CLTS curriculum at schools and universities.

2 (a) Monitoring

This sub-component will finance a series of activities to develop and test a comprehensive sector-wide monitoring system for functionality and sustainability that includes data collection, quality assurance and quality control, data reporting and use and guidelines for a water quality monitoring and surveillance system.

2 (b) Capacity building of Nam Saat for sustainability of community water supply systems

Sustainability units within provincial and district-level Nam Saat centers will be established to provide decentralized technical support to all VDCs at the district and provincial levels in the target four provinces. The role of Nam Saat will include technical assistance to rural communities, regulation of rural services and service providers with performance mechanisms appropriate for small rural operators that fall under Naam Saat's mandate.

2 (c) Policy for sanitation and hygiene

The project will support: (i) orientation and training of provincial and district staff on issues related to the sustainable water, sanitation, and hygiene services; (ii) training on post construction support for district and provincial staff; (ii) strengthening of government provincial and district resource teams for the implementation and facilitation of the community-level sanitation and hygiene activities; and, (iii) instruments and equipment for water quality and quantity monitoring in each of the provinces.

Component 3: Implementation support, sector development and coordination

The project will finance the establishment of a project management unit, component management unit, and district project offices. These will be supported by technical team of consultants for overall project management, monitoring of implementation, outputs and outcomes, and technical and financial reporting for sustainable WASH, capacity building, institutional strengthening, social and environmental safeguards and community empowerment.

3(a) Project Management Unit

Project management unit and district project offices will be established. These will be supported by a technical team of consultants for overall project management, monitoring of implementation, outputs and outcomes, and technical and financial reporting for sustainable WASH, capacity building, institutional strengthening, social and environmental safeguards and community empowerment.

3(b) Component Management Unit

Component Management Unit (CMU) to support the implementation of Component 2 by MoH. The CMU will be supported by technical team of consultants for overall project management, monitoring of implementation, outputs and outcomes, and technical and financial reporting.

Component 4: Contingency emergency response (CERC)

This component will allow for a reallocation of credit proceeds from other components to provide emergency recovery and reconstruction support following an eligible crisis or emergency at the national or sub-national level. In light of the Project design, the CERC would be expected to be operationalized through a reallocation from Component 1 and 2 to provide emergency recovery and reconstruction support.

20. Activities under component 1 will be most likely to be applied under the ESMF actions as it will involve the construction of the water supply and sanitation infrastructure that may create negative impacts to the local environment and communities.

3.3 NON-ELIGIBLE SUB-PROJECT ACTIVITIES

21. The following are activities prohibited from funding under this project:

- Relocation or demolition of any permanent houses or businesses.
- Land acquisition that affect relocation of more than 200 people or 20 households.
- Not applying demand responsive approach by imposing ideas and changing priorities identified by the community and endorsed at the Kumbar level meeting without community consultation.
- Likely creation of adverse impacts on ethnic groups within the village and/or in neighboring villages or unacceptable to ethnic groups living in an ethnic homogenous village or a village of mixed ethnic composition.
- Production or trade in any product or activity deemed illegal under Lao PDR laws or regulations or international conventions and agreements, or subject to international bans, such as pharmaceuticals, pesticides/herbicides, ozone depleting substances, PCBs, wildlife or products regulated under the Convention on International Trade in Endangered Species (CITES).
- Production or trade in unbonded asbestos fibers. This does not apply to purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.
- Production or activities involving harmful or exploitative forms of forced labor /harmful child labor.
- Commercial logging operations for use in primary tropical moist forest.
- Production or trade in wood or other forestry products other than from sustainably managed forests.
- Transboundary movements of waste prohibited under international law (Basel Convention).
- Activities prohibited by legislation of Lao PDR or by international conventions relating to the protection of biodiversity resources or cultural heritage (Bonn Convention, Ramsar, World Heritage Convention and Convention on Biological Diversity).
- Shipment of oil or other hazardous substances in tankers that do not comply with International Maritime Organization (IMO) requirements (MARPOL, SOLAS and Paris MOU).

22. Further, The World Banks Operational Policies (OP) also prohibit the conversion or degradation of critical natural habitats (OP4.04), significant conversion or degradation of critical forest areas (OP4.36). OP4.09 prohibits the use of specified categories of pesticides under certain circumstances; OP 4.12 prohibits involuntary land acquisition absent specified pre-conditions; and OP 4.11 prohibits certain activities adversely affecting physical cultural resources.

3.4 PROJECT IMPLEMENTATION AND MANAGEMENT

23. PMU of DWS, MPWT will be the lead project implementing agency responsible for the overall supervision, execution, and management of the project. Nam Saat and DHHP Ministry of Health will provide (a) technical advice during the implementation of integrated WASH project cycle to support the design and implementation of the water supply systems and the sanitation and hygiene component; (b) carry out periodic water quality testing and surveillance; (c) carry out the tasks as described under Components 2.

4 POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

4.1 RESPONSIBLE AGENCIES

24. The draft Strategy for Rural Water Supply, Sanitation and Hygiene (WASH) in Lao PDR, which is in the final stages of approval, identifies the need for improving the quality and speed of delivery of water supply systems, and extending sanitation and hygiene behavior change towards achieving Sustainable Development Goal (SDG) targets. While the Ministry of Public works has been traditionally mandated with the planning and development of urban water supply and sanitation systems, it also increasingly takes care of water supply schemes for rural clusters. As urbanization increases and villages consolidate into larger clusters, the strategy allows for survey and design of gravity-fed piped schemes to be increasingly transferred to DWS and with time, increasing numbers of systems moving to the purview of the water utilities, or NPSEs. At the same time, even though the development of small water supply schemes remains within the mandate of MOH, the focus will increase on the reduction of open defecation, promotion of sanitation and hygiene, water quality improvement, and collection and validation of sector information.

4.2 LAO PDR ENVIRONMENTAL AND SOCIAL LEGISLATION FOR WATER SUPPLY

25. Key government legislation applicable to the project includes the following.

4.2.1 Environmental Protection Law (2012)

26. The law governing the protection of the environment, including the assessment and management of projects in Lao PDR is the Environmental Protection Law (EPL) amended in 2012. EPL specifies necessary principles, rules and measures for managing, monitoring, restoring and protecting the environment from pollution that are man-made or natural. The aim is to protect the public, natural resources and biodiversity, and to ensure the sustainable socio-economic development of the nation. Article 2 defines "environment", whereas article 3 defines "environment protection". Basic principles of environment protection are set out in article 5. Article 8 states the applicability of the law to all citizens and non-citizens active in the Lao PDR. Part III concerns prevention of environmental degradation.

4.2.2 Law on Water and Water Resources (2017)

27. The Law on Water and Water Resources amended in 2017, defines principles, regulations, and measures relating to the protection, administration, exploitation, use and development of water and water resources, protection damage to water or water resources, rehabilitation of the effected areas to ensure the quality, quantity and sustainability of water resources. The water resource needs to be sufficient (i) for the people's living requirements, (ii) to support agriculture and industry, (iii) to ensure that the natural and social environments are protected, (iv) to develop the nation sustainably and (v) to support the socio-economic development. The Law bestows ownership of water and water resources in “the national community whom the State represents” (Article 4). Provision is made for water resource allocation, but not in detail. Article 11 states that “The allocation of water sources and catchments shall be based on surveys and on data collected, in order that water and water resources are distributed, managed and used effectively and in accordance with their purposes”. The law separates water use into small, medium and large-scale use. The definition of medium-scale use including constructing small-scale intake structures for water (Article 16) and for large-scale includes the construction of medium or large-scale reservoirs. Provision for approvals is made in Article 18, which states that water and water resources shall be centrally managed, that large-scale use shall be approved by government, and that medium-scale use shall be approved by a relevant agency (“relevant agency” is not defined in the law).

4.2.3 Law on Water Supply (2009)

28. The Water Supply Law (2009) allocates priority to water supply. Article 18 of the Water Supply Law states that “individuals or organizations may have the rights of possession and use of water sources for water supply production only if they have received the authorization from the sectors concerned with the approval of the water resources and environment sectors at the same level.” From this it is understood that approval for water use by the NPSEs requires the approval of the Provincial PONRE (the provincial water resources and environmental sector).

4.2.4 Forestry Law (2007)

29. The Amended Forestry Law, No. 06/NA (Dec. 2007) stipulates the basic principles, regulations and measures concerning forest conservation, management, and use. It aims to make the forests and forestland a stable source of livelihood and use for the people, by ensuring sustainable preservation of water sources, preventing soil erosion and maintaining soil quality, conserving plant and tree species and wildlife species, preserving the environment, and contributing to national socioeconomic development.

4.2.5 Wildlife and Aquatic Law (2008)

30. The Wildlife and Aquatic Law restricts and regulates the management, monitoring, conservation, and protection of wildlife and aquatic species in their natural habitats to promote the sustainable regeneration and utilization of wildlife and aquatic life, without any harmful impact on natural resources or habitats and decreasing species and the extinction of wildlife and aquatic life. Wildlife and aquatic species living within the territory of the Lao PDR are considered property of the national community, with the State representing the national community in managing those species throughout the country. If an individual or organization has permission to raise and reproduce any of these species, it is then considered their own property as long as they abide by the laws and regulations.

4.2.6 Land Law (2003)

31. The Land Law was enacted on 23 October 2003. The law determines the management, protection and use of land to ensure its efficient use and to conform with land-use objectives,

with other laws and regulations, to contribute to national socio-economic development, and to contribute to the protection of the environment.

4.2.7 Ministerial Instruction No. 8029

32. The responsibilities and procedures for environmental monitoring of projects are set out in the Ministry of Natural Resources and Environment (MONRE) Ministerial Instructions No. 8029 (for IEE) and No. 8030 (for EIA) issued on 17 December 2013. Under the Agreement No. 8056 as issued by MONRE on 17 December 2013, investment projects are categorized according to a schedule or list of projects such that for Category 1 or small-scale projects, an IEE is required and for Category 2 or large-scale projects, an EIA report is prepared. Under the Ministerial Agreement No. 8056/MONRE, (Item 3.35) water supply facilities fall under Category 1, therefore an IEE is required.
33. The Ministerial Instructions No. 8029 requires (i) appropriate screening, based on project categorization, of the required level of environmental assessment, (ii) environmental assessments to identify direct and indirect physical, biological, socioeconomic and cultural resources, (iii) presentation of alternatives (where an EIA is required), (iv) analysis to identify ways of avoiding and/or mitigating negative impacts and enhancing positive impacts, (v) extensive stakeholder consultation, (vi) disclosure to the public, (vii) preparation, approval, implementation and verification of environmental management and monitoring plans, (vi) specific provision for national biodiversity conservation areas and (vii) engagement of competent expertise for environmental impact assessment and management planning.
34. The Ministerial Instructions No. 8029 stipulates responsibilities for the key stakeholders involved in the process. These are listed as MONRE, local administrations, development project responsible agencies (taken to mean, essentially, the line agency either at central, provincial and district level), concerned sector bodies and project developers. The tasks required, from inception through to approval, are investigations, field inspections, information dissemination, public consultation, review of draft IEEs, updating IEEs in response to comments and the issuance of certificates of compliance.
35. Project developers are defined as any person, legal entity or organization, from the public or private sector, who/which is licensed to undertake study, survey, design, construction and operation of an investment project. In this case the developer is the Ministry of Public Works and Transport.

4.2.8 Drinking Water Quality Standards

36. The MOH has issued the Water Quality Standard for Management for Drinking and Domestic Use in March 2014 in accordance with Decision 561/MOH, 2014 (Annex 8). The MOH has the responsibility of overseeing and monitoring drinking water quality in Lao PDR. The NPSEs and Nam Saats are required to monitor drinking water quality to ensure water safety and protect consumer health through regular water quality sampling and laboratory analysis of the gathered samples. As stipulated in the MOH Drinking Water Quality Standards, 2014, the PNP are required to conduct regular water quality monitoring.

4.2.9 Discharge Standards

37. The Agreement on National Environmental Standards 2010, Water Resources and Environment Administration (WREA) of 2009, defines the discharge standards for industrial wastewater discharges from manufacturing facilities which covers a comprehensive range of parameters (Annex 8).

4.2.10 Law on Hygiene, Disease Prevention and Health Promotion

38. The Law on Hygiene, Disease Prevention and Health Promotion has the function to determine the principles, regulations and measures relating to the organisation of activities on

hygiene, disease prevention and health promotion to maintain the good health, quality of life and longevity of the people thus contributing to national preservation and development.

4.2.11 Decree #84 on Compensation and Resettlement of People Affected by Development Projects (2016).

39. Decree on Compensation and Resettlement of People Affected by Development Projects No.84/GoL, dated April 5, 2016. This Decree provides principles, regulations and standards on the management, monitoring of compensation of losses and the management of resettlement activities in order to properly and effectively implement development projects with the aims to ensure that the affected people are compensated, resettled and are assisted with permanent livelihood alternatives leading to improving of living conditions to be better off or to be at the same level as they were before as well as to ensure that the projects can contribute to the socio-economic development of the nation in sustainable manners.

4.2.12 Technical Guidelines on Compensation and Resettlement of People Affected by Development Project (2005)

40. Pursuant to Prime Ministerial Decree No. 192/PM, GOL endorsed the Technical Guidelines on Compensation and Resettlement of People Affected by Development Projects, first issued in November 2005. These guidelines adopted under the Decree 192 are currently under review and revision to be in line with the new Decree 84 and expected to be approved in 2018. In the meantime, the guidelines prepared under Decree 192 remain applicable. Any discrepancies and gaps identified between the GOL legislation and the World Bank's policy on Involuntary Resettlement (OP/BP4.12), the latter will override. This legislation provides procedure for the assessment, planning, and mitigation of environmental as well as social impacts from development projects. These guidelines include detailed procedures for the conduct of public consultation and other participatory processes, to inform affected people of the environmental and social impacts, and to assure their involvement in all aspects of the mitigation and compensation process, from planning to implementation.

4.2.13 Decree on the Preservation of Cultural, Historical and Natural Heritage (1997)

41. This decree outlines the regulations and measures for the management, conservation and use of the national heritage, including for upgrading of movable and immovable assets with historical or cultural or natural value into national heritage with the view of raising the spirit of patriotism, people's democracy, awareness and ownership of the fine national and ethnic cultures. This decree requires that in order to prevent exploitation of relics and antiquities, any person who discovers archaeological relics or a cultural site must inform the provincial and district offices within three days.

4.2.14 Guideline on Consultation with Ethnic Groups (2013)

42. The guideline on Consultation with Ethnic Group launched by the Lao Front for National Construction (LFNC) in 2013 aims to (a) ensure that the implementation of consultation with ethnic groups follows effective principles and processes in line with the relevant national Laws and regulations, (b) ensure that the rights and lost assets of the ethnic people affected by development projects are fairly compensated by development projects, and (c) to prevent or mitigate the potential environmental and social impacts on ethnic groups generated by development project and ensure that the project is properly designed for the sustainability.

4.2.15 Decree 333 on Protection Forest (2010)

43. This Decree defines the principles, the procedures, and the measures on the management, the protection and conservation, the development, and the sustainable use of the protection forest, with the aims of bringing the richness to the protection forests and the protection of

forestry lands, ensuring the protection of the environment, the water sources, prevention of soil erosion, and safeguarding the soil quality, the strategic national defense and public security forests, including the restoration, the encouragement, the monitoring and assessment of the laws in order to contribute to the improvement of the living standards of the people and the national socio-economic development.

4.3 WORLD BANK SAFEGUARDS POLICIES

44. The World Bank Environmental and Social Safeguards policies are designed to ensure that Environmental and Social issues are addressed throughout the project cycle of a Bank’s financed project. The safeguards policies are applied to all World Bank’s financed projects. All safeguard related reports, assessments and plans must be developed by the country (borrower) and cleared by the Bank, and disclosed at both borrower’s and World Bank’s website and a hard copies must be available at the MPWT at the central, province and district levels, before project appraisal can take place. The environmental and social impact assessment report must explain all possible impacts on local community and environment, and mitigation measures.

4.3.1 Other Requirements

4.3.1.1 Environmental, Health, and Safety (EHS) Guidelines

45. MPWT will take note of the Environmental, Health, and Safety (EHS) requirement for Water and Sanitation projects. It is a technical reference document with general and industry-specific examples in the guideline provided as a Good International Industry Practice. The EHS Guidelines contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs. Application of the EHS Guidelines existing facilities may involve the establishment of site-specific targets, with an appropriate timetable for achieving them.

4.3.2 World Bank Safeguard Policies Triggered for the Project

46. The Water Supply and Sanitation Project is classified as Category B status as it may involve minor adverse impacts on local environment and communities. The Project will trigger up to five of the World Bank safeguard policies as presented in Table 4.1.

Table 4-1: List of WB safeguard policies triggered for the Project

	WB Safeguard Policies	Triggered?	Safeguard instruments
1	Environmental Assessment OP/BP 4.01	Yes	ESMF/ESMP/ECOP
2	Natural Habitats OP/BP 4.04	No	
3	Forests OP/BP 4.36	No	
4	Pest Management OP 4.09	No	-
5	Physical Cultural Resources OP/BP 4.11	Yes	ECOP
6	Indigenous Peoples OP/BP 4.10	Yes	EGDF/EGDP
7	Involuntary Resettlement OP/BP 4.12	Yes	RPF/RAP/ARAP
8	Safety of Dams OP/BP 4.37	No	-
9	Projects on International Waterways OP/BP 7.50	Yes	The World Bank, on behalf of, and at the request of, the Lao PDR government has notified the Mekong riparian countries including China,

			Vietnam, Myanmar, Thailand and Cambodia.
10	Projects in Disputed Areas OP/BP 7.60	No	

47. **Environmental Assessment – OP/BP 4.01** – Potential environmental impacts resulting from project activities include soil erosion during construction of intake structures, pipe installation, construction of water distribution and sanitary systems, and pollution of surface and ground water. Given the small-scale nature of planned water supply and sanitation infrastructure in component 1, environmental impacts are expected to be minor, temporary, and site specific and can be managed through implementation of appropriate mitigation measures. Within the ESMP a matrix of mitigation measures will be created that presents all the required measures and monitoring responsibilities corresponding to the impacts as assessed in the IEEs. The mitigation measures required cover all stages of the subproject and are separated into pre-construction, construction and operation phases. The ESMP matrix will be based on the type, extent and duration of the environmental impacts identified at the design stage. In the event that unexpected changes occur during design and implementation, the ESMP will be amended to take into account of these unexpected impacts, and mitigation measures will be amended as necessary. Potential impacts during the construction period include dust dispersion, noise, traffic obstruction and access, construction and road safety, etc. Mitigation measures for these impacts during construction have been incorporated into the generic ECoP (Annex 3).
48. **Indigenous People’s - OP/BP 4.10** – District level data from the census on ethnicity confirms the presence of ethnic groups in the project target areas and meet eligibility criteria under OP/BP 4.10. The Hmong, Khmu, Mien, Akha, Lao Phong, Tai-dam and Lao Lum are living in the Project’s target districts. These are considered to be vulnerable ethnic groups in Lao PDR as their livelihood is primarily based on subsistence agriculture and natural resources. The impact of the water supply and sanitation project on these communities is generally positive, however, any negative impacts that may occur are addressed in the EGDF (Annex7). Need for preparation of EGDP will be identified during the safeguard screening. WB approval of EGDP will be required
49. **Physical Cultural Resources - OP/BP 4.11** – This policy is triggered as a precaution in case of any chance finds occurring during water supply and sanitation infrastructure construction. There is likely to be numerous sites of local importance in villages including temples, spirit houses, swings and village gates in the Akha communities, natural features, and natural environments that have become part of the cultural landscape. During the preparation of ESMP or ECoP potential negative impacts will be identified and mitigation measures undertaken. A “chance find” procedures will also be included in the construction contracts’ specifications.
50. **Involuntary Resettlement - OP/BP 4.12** – While Component 1a will promote improvements in sanitary, and drainage and collection systems, and component 1b will finance spring collection structures, water supply pipes, groundwater recharge structures, groundwater well, pumps and pump stations, it is not expected that these investments will result in significant land acquisition. The project may involve minor land acquisition for the installation of the main pipes of raw water, pump stations, water intake, and water treatment plant. Pipe networks installation may affect trees and front yards, but no major loss of private assets including land would occur. Resettlement Policy Framework has been prepared (Annex 6) describing policies and procedures to avoid, minimize or mitigate impacts associated with the project investments. Need for preparation of RAP and ARAP will be identified during the safeguard screening to be conducted for the sub-projects in each target province. World Bank approval of RAP and ARAP will be required.

International Waterways OP7.50 – The policy is triggered because some of the project sub-projects would be implemented along tributaries of the Mekong River, which is an international waterway, in accordance with the World Bank’s Operational Policy for Projects on International Waterways (OP 7.50). OP7.50 applies to the Project and requires that notification be made to all riparian states of the Mekong River. At the request of the Government of Lao PDR, the World Bank is providing a notification to China, Myanmar, Vietnam and Thailand in accordance with Paragraph 4 of OP 7.50. In the World Bank’s assessment, the proposed investments would not adversely affect the flow, quantity or quality of the Mekong River’s waters. All sub-projects will be of small scale and have no discernable effects on the international waterway.

5 EXISTING ENVIRONMENTAL AND SOCIAL CONDITION

5.1 HOUAPHAN PROVINCE

51. **Population¹, Location and Topography:** Houaphan Province is inhabited by 289,393 people from different ethnic groups such as Lao Loum, Lao Phong, Lao Phouan, Tai Deng, Tai Dam, Hmong, and other minority groups. The province is located in the north east of Laos. It has an area of 17,363 km² and borders Vietnam to the east, Luang Prabang to the northwest and Xieng Khouang to the southwest. The landscape of Houaphan is dramatic. Rugged mountains dominate the landscape and rise to an altitude of 2079m at Phou Pan-Gai.
52. **Land and Forest Resources:** Only 6% of its land surface is flat, and this area coupled with land sloping less than 35 degrees (4%) is the primary production area for its population. Forest area covers about 1,209,572 ha (69%) of total land in the province of which 462,214 ha (or 26.4%) are assigned as national, provincial, and district protected forest areas. In addition, about 171,441 ha covering 8 villages have been assigned as production forests, from which native trees are harvested for timber products.
53. **Biodiversity:** Houaphan has two important national protected areas, the Nam Et-Phou Louey National Biodiversity Conservation Area (NBCA) and the Nam Xam NBCA with a total area of 390,000 ha. These protected areas have high biodiversity including high value tree species, diversified plant, and wild life species and some of them are classified as endangered species such as Bengal tiger, bear, chamois, bull, elephant, monkeys, gibbon, and birds, aquatic animals and various type of insects. Species populations and densities are unknown and the risks to them from illegal poaching and habitat destructions is of ongoing concerns. Biodiversity studies are rare. Some of the listed species, such as the Bengal tiger, may no longer have viable populations within the province.
54. There are a number of Important Bird Areas (IBA) including the Nam Neun IBA (85,450 ha) in Nam Et which is adjacent to the NBCA. The habitat is characterized as mixed deciduous forest, as well as dry evergreen forest, with stands of bamboo, and occasional conifers; cleared areas have been replaced by areas of secondary grassland. Key avifauna includes Great Hornbill *Buceros bicornis* and Blyth's Kingfisher *Alcedo hercules*.
55. There are five national Protection Forest Areas (PFAs) in the province all of which have not been subject to detailed surveys, and maybe home to endangered plants and animal species. The PFAs are important sources of TFP and non-timber forest products (NTFP) for local communities and agriculture, such as swidden rice, is practiced within their boundaries.

¹ 2015 Population Census

- Laeng Nam Ma (1665 km²)
 - Nhot Nam Et – Nam Xam (1310 km²)
 - Laeng Nam Nean (545 km²)
 - Nam Xam (997 km²)
 - Sopphaen-Houay Ko (1088 km²)
56. **Water Resources:** Houaphan is abundant with water resources of good quality and the key rivers include; Nam Xam, Nam Ma, Nam Ma Ad, Nam Neun, Nam Khan, and Nam Sim. The Nam Ma, Houaphan's largest river is an unregulated (international) river that originates in Vietnam entering in Laos at Et (Ad) District and flows in a south-east direction through XiangKhor District and then Sopbao District before reentering Vietnam. The Nam Ma river flows for about 83 km in Laos, entirely within Houaphan Province.
57. **Climate:** The climate in the Houaphan is characterized by two seasons; dry and wet seasons. Based on data averages collected from Xamneua airport met station, the coolest months are December and January with an approximate minimum average of 9.4 °C and the warmest months being June and July with a monthly maximum average of 29.3 °C. The dry season occurs between November and February while the wet season occurs between May and October. August is typically the wettest month with an average rainfall of 322.5 mm compared to December the driest month with only 17.4 mm. Annual rainfall of 1,165-1,966 mm with 80% of the rainfall occurring during the monsoon (May to September) season.
58. **Cultural Heritage:** The province is the home to the Viengxay caves, an extensive network of caves used by the Pathet Lao. Wat Pho Xai or Wat Pho Xaysanalam is on the outskirts of Sam Neua. Hintang Archaeological Park, a UNESCO World Heritage Site, is one of the most important pre-historic sites in northern Laos, dotted with about 2,000-year-old menhirs (standing stones) or megaliths, which were unearthed in 1931.
59. As works for the water treatment plants will be conducted within and close to village settlements it is most likely such activities will come into contact with areas of religious ceremony, contain religious artifacts, spirit forests, cemeteries, temples and places of worship.

5.2 XIENG KHOUANG PROVINCE

60. **Population², Location and Topography:** Xieng Khouang Province is a mountainous area covering some 16,850 km² but is sparsely populated with less than 250,000 people of 5 main ethnic groups: Lao Loum, Thai Phuan, Hmong, Khmu and Tai Dam. Xieng Khouang Province is located in the north east of Laos on the Xieng Khouang Plateau. The province borders with Luang Prabang in the northwest, Houaphan to the northeast, Vietnam to the east, Bolikhamxay to the southeast and Vientiane Province to the southwest.
61. **Land and Forests:** Apart from floodplains, the largest area of level land in Laos is located on the Xieng Khouang Plateau. This area is categorized by rolling hills and grasslands with an altitude of 1,300 meters above sea level (masl). The provincial capital city, Phonsavanh, has an elevation of 1,000 masl and Kham district is situated in a low laying basin of 600 masl.
62. Geographically, Xieng Khouang Province is characterized as a mountainous area (90%), with a plateau area (8%) and lowland paddy area (2%). The province is located between 500 to

² 2015 Population Census

2,280 masl. The average altitude is around 1300 masl, and the highest peak is Phou Bia at 2,820 masl, which is also the highest in Laos.

63. Approximately 55% of the total areas are steep mountainous with scattered forest cover of some 900,000 ha or 58% of the provincial land area. Arable land covers some 7%. Xieng Khouang Province is known for its grassland area (295,000 ha), used for extensive livestock raising of mainly cattle.
64. **Biodiversity:** Approximately 43% of the province is covered by forest. The province has two NBCA: Phou Sa Bot - Phung Chong NBCA covering two districts: Kham and Nong Het with a total area of 149,000 ha (18.7 percent total land area) and a small proportion of Nam Et - Phou Leoi NBCA (8,000 ha) bordering Houaphan and Luang Prabang provinces. There are five National Protection Forest Areas, principally for water protection, totaling 761,200 hectares, and three National Production Forest Areas totaling 310,600 ha. Furthermore, there are three District Conservation Forests: Phou Pha Xay, Phou Nang Non and Phou Pha Tung and twelve Provincial Forest Conservation Areas totaling of 47,800 ha.
65. Protection of forests, including pine (*Pinus kesiya*) and hing (*Keteleeria evelyniana*) forests, as well as rivers and watershed systems have a high priority, although widespread slash and burn agriculture has some negative effects to the forests and biodiversity. The demand for and consumption of natural resources has increased in both domestic and international markets and has resulted in a decreasing biodiversity and disappearances of species. The decrease is also due to various other factors such as slash and burn cultivation, uncontrolled and illegal logging and hunting, unsustainable harvesting of non-timber forest products (NTFPs), land concessions, and infrastructure developments.
66. The mining industry is active with approximately 15 mining companies exploring various minerals including gold, copper, iron, aluminum, zinc, lignite, and coal. Several hydropower plants are also operating or being developed. Additionally, and there is an increasing number of tourists are arriving for among others visiting the Plain of Jars.
67. The province is rich in natural resources and has a climate that is suitable for diversified agriculture. Soils are relatively infertile and extensively used as grassland for cattle, but the province is also known for its rice varieties (Khoa Kai Noi), as well as a number of temperate and subtropical fruits. Most farmers are growing various vegetables but are also making good use of a larger number of medicinal plants and non-timber forests products providing supplementary food and income. Nearly 600,000 ha (approximately 40%) of the province is grouped as high risk for soil erosion, land with moderate erosion risk covers more than 700,000 ha (45%) and slight erosion risk covers 20,000 ha or 0.1%.
68. Apart from paddy and upland rice, a great number of other field crops are cultivated including maize, sesame, jobs tears, and groundnut. Wild tea is cultivated in a few areas, as well as subtropical and temperate fruits, including peach and pear. Normally, the markets have a large variety of vegetables herbs. Xieng Khouang is also known for large cattle breeds, but also for raising native poultry and pigs.
69. **Water Resources:** There are several major tributaries of Mekong originating from Xieng Khouang Province including the Nam Ngum, Nam Xan, Nam Ngiep, Nam Hang and more than 102 smaller streams flowing through the province before discharging into the Mekong River. In addition, Nam Neun River is an international river flowing through the province to Vietnam. There are a total of 80 fish conservation zones, 46 fishponds and 38 reservoirs.
70. **Climate:** The province experiences two seasons, a dry (winter) and a rainy season. The dry season lasts from October to March and the rainy season is from April to September with the heaviest rain from June to August. The average temperature is 20.5°C, the rainfall is 1,500 mm/year, the humidity averages around 40%.

71. **Cultural Heritage:** There are many notable landmarks in the province. The tourism department of Laos has listed 63 sites of which 32 are natural sites, 18 are cultural sites, and are 13 historical sites. The most prominent and popular sites are Plain of Jars which consist of urns of large stone of height varying from 1–3 m. They are found throughout the province at many locations throughout the provinces in bunches of 300 jars at each location.
72. As works for the water treatment plants will be conducted within and close to village settlements it is most likely such activities will come into contact with areas of religious ceremony, contain religious artifacts, spirit forests, cemeteries, temples and places of worship.

5.3 OUDOMXAY PROVINCE

73. **Population, Location and Topography:** Oudomxay has the population³ of 307,622 people. The main ethnic groups living in the province include Khmu, Lao Loum, Akha, Leu, Hmong, Ewmien and other minority groups. The province covers an area of 15,370 km² and is located in the northwest of Laos. It borders China to its north and the provinces of Phongsali, Xayaboury, Phonsaly, Luang Namtha and Bokeo. The topography is mountainous with altitudes varying between 300-1,800 masl. Due to Oudomxay's location as the most important traffic junction in northern Laos (the only road from Luang Prabang up north crosses Oudomxay).
74. **Land, Forests and Biodiversity:** According to estimations of the IUCN, approximately 12% of Oudomxay forests are primary forests, 48% secondary forests. There are no NBCAs within the province but there is the Upper Lao Mekong Important Bird Area (IBA) of 10,980 hectare in size that spans the provinces of Oudomxai, Bokeo, and Xayboury. The altitude is 300-400 masl. Oudomxay has 130,000 ha of National Protection Forests and 3 Production Forests with the total area of 220,695 ha.
75. Households undertake different livelihood activities around the year, including paddy cultivation, upland cultivation of rice and other crops, fishing, collection of other aquatic organisms and plants, riverbank gardening, raising livestock, hunting, collection of NTFP, and planting of industrial trees such as teak. The collection of NTFP is an important livelihood activity or all villagers living in the province whether it is for food for home consumption or sale, or as medicinal plants. Many species have high commercial value and are sold for cash income. Tourism also plays an important part of the local economy to the province as it is a traffic junction between five provinces, and with China.
76. **Climate:** Oudomxay has a moderate monsoonal climate, with a distinct wet season between May and October and a pronounced dry season for the rest of the year. Annual rainfall is between 1,900-2,600 mm while evaporation rates represented 66% (879 mm). Around 84% of the total rainfall occurs during the wet season, with the highest rainfall occurring in the months of July and August. The hottest months are from April to June. Temperatures are lowest in December and January. Temperatures in February and March average between 18 and 19°C, from April to May temperatures climb over 31°C. Due to high altitudes there are more variations in temperature during the year and a colder dry season in northern Laos as in the rest of the country.
77. **Water Resources:** There are approximately 60 river systems in the province, the largest being the Nam Ou. In the Oudomxay districts along the Nam Ou river, more than 90 villages have 35 conservation pools and 101 protection pools, figures from the 2017 provincial validation workshops show. Local regulations prohibit the use of explosives, electrofishing,

³ 2015 Population Census

and biocides (poison) to catch fish; however, these activities are still undertaken in some communities.

78. Heavy rain in August 2016 has caused flash flood in 7 districts of Oudomxay and 132 villages were affected with 12,200 people affected. Meuang La appears to be the district most affected by flash flooding, with three big recorded events in 1975, 1991, and 2008.
79. **Cultural Resources:** As works for the water treatment plants will be conducted within and close to village settlements it is most likely such activities will come into contact areas of religious ceremony, contain religious artifacts, spirit forests, cemeteries, temples and places of worship.

5.4 PHONGSALY PROVINCE

80. **Population⁴, Location and Topography:** Phongsaly Province is resided by 177,989 people. The ethnic groups in the province include Akha, Phou Noi, Lao Loum, Lolo, Hor and other minority groups. The province covers an area of 16,270 square kilometers, out of which 77% has forest cover. The province borders China to the north and west, Vietnam to the east, Luang Prabang Province to the south, and Oudomxai Province to the southwest. The highest mountain in the province is Phou Doychy with an elevation of 1,842 masl.
81. **Land, Forest and Biodiversity:** In Phongsaly there are two NBCA forest: Phou Den Din – 222,000 Ha and Phou Hipfi 87,000 ha. The 126,880 ha Phou Den Din Important Bird Area (IBA) is located within the Phou Den Din NBCA. There are five national protection forests, primarily for water source protection, and two district protection forests covering a total area of 797,409 ha, and two production forests covering a total of 158,573 ha. The Phou Pha Provincial Conservation Forest is located on forested mountain slopes adjacent to the provincial administrative center of Phongsaly and covers around 200 ha. The area is protected primarily to conserve the township's water resources. The area is also managed as a district protection forest by the Phongsaly District Agriculture and Forestry Office.
82. **Climate:** Phongsaly is characterized by a relatively cool climate. Weather in the province is described as “four seasons in a single day” with cold mornings and evenings, humidity during the day, and rains in the afternoon. It is a moderate tropical monsoon, with a distinct wet season between May and October and a pronounced dry season for the rest of the year. Average annual rainfall is 1,752 mm at Phongsaly, the provincial capital, while evaporation rate is 43% (747.8 mm). Around 84% of the total rainfall occurs during the wet season, with the highest rainfall occurring in the months of July and August.
83. Temperatures at Phongsaly recorded average maximum temperatures of 26°C to 35°C from 1988 to 2006. The hottest months are April to June. Average minimum temperatures range is from 0.4-12.4°C. Temperatures are lowest in December and January. In December and January, temperatures can drop below zero degrees. Prolonged periods of up to 10 days of cold weather have been recorded in several years, most recently in 2016.
84. **Water Resources:** The main river system in the province is the Nam Ou. The Nam Ou Basin lies within the Northern Indochina subtropical terrestrial eco-region as defined by World Wide Fund for Nature (WWF). The basin also lies within the moist, sub-tropical broadleaf forest biome. The tributaries of the Nam Ou can be classified as medium-sized rivers based on their mean annual flow of 10-100 m³/sec with high seasonal flow variability.
85. In Phongsaly, three major floods have taken place since 2001:

⁴ 2015 Population Census

- 2016 Nam Lan and Nam Leng in Boun Tai.
 - 2011 Meuang Mai and all tributaries of the Nam Neua.
 - 2001 In Meuang Gnot Ou, the urban area close to the river was flooded with significant damage, including the concrete irrigation water pipe.
86. Households undertake different livelihood activities around the year, including paddy cultivation, upland cultivation of rice and other crops, fishing, collection of other aquatic organisms and plants, riverbank gardening, raising livestock, hunting, collection of NTFP, and planting of industrial trees such as teak. The collection of NTFP is an important livelihood activity for all villagers living in the province whether it is for food for home consumption or sale, or as medicinal plants. Many species have high commercial value and are sold for cash income.
87. **Cultural Resources:** In the province are the Wat Ou-Tai Temple, the Wat Luang Ou-Neua Temple and the That Phou Xay Stupa. Additionally, as works for the water treatment plants will be conducted within and close to village settlements it is most likely such activities will come into contact areas of religious ceremony, contain religious artifacts, spirit forests, cemeteries, temples and places of worship.

6 POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACT

88. The subprojects will provide direct and indirect benefits for all people living and working in the beneficiary villages. Principal benefits include a secure and continuous supply of safe, clean water. The new water supply will also enable commercial establishments which in turn will provide employment. The subprojects will also provide investment to improve local village drainage systems, improve capacity of villagers' household sanitation practices, improve sanitary facilities at selected schools, markets and households, and improve government capacity to manage and maintain their new water treatment and supply system.
89. Since not all the subproject locations are known before appraisal, in addition, it is possible that the project activities may create negative impacts, however, due to the nature of project activity, there is no specific environmental issue that would require high attention. Standard implementation of an ESMP will be developed to meet environmental conditions appropriate to the national and international laws, guidelines and regulations. It is anticipated that the negative impacts are temporary and can be mitigated to acceptable levels during construction phase. Positive impacts on public health, quality of life and economic development are expected during project operation phase and significantly increase through the expansion of safe water supply and sanitation.

6.1 THE PROJECT COMPONENTS

90. The project will support improved water supply service delivery, sanitation and hygiene, and implementation support and sector capacity building. The project will be implemented in twelve districts in Xieng Khouang, Houaphan, Oudomxay, and Phongsaly provinces. The project will include small scale water supply and sanitation infrastructure which may cause minor environmental or social impacts. The project component 1 will be applicable for the implementation of this ESMF as it involves the construction of water supply system and sanitation infrastructure that may post negative impacts to local environment and community.

6.1.1 Component 1b: Water supply infrastructure

91. The project will finance construction of new water supply systems, rehabilitation of non-functioning systems, and improvement of existing systems to improve performance. The

project will adopt a demand driven approach to improving service levels. For example, drinking water treatment systems could be added or upgraded in a second phase beyond the basic services, piped schemes with neighborhood tap points could be upgraded to household connections, or the number of wells that serve a community could be gradually increased. The project will finance feasibility studies and detailed design for infrastructure investments such as small scale expansion of existing water treatment plants, new and rehabilitation of distribution systems; pump stations and primary, secondary and tertiary supply pipelines.

6.1.2 Component 1b: Environmental Impacts and Management:

92. The subprojects are unlikely to cause any adverse permanent impacts on water and land resources. Temporary negative impacts can be expected from:
- i. Sedimentation of water ways and receiving environments.
 - ii. Air pollution from fugitive dust and construction fumes.
 - iii. Noise and vibration increase from construction activities.
 - iv. Clearing of vegetation for facilities water infrastructure siting.
 - v. Impacts on private gardens and trees for infrastructure placement and/or construction activity requirements.
 - vi. Generation of construction wastes.
 - vii. Generation of domestic (camp) wastes.
 - viii. Use and disposal of hazardous materials.
 - ix. Competition for local resources (NTFP and TFP) from migrant labor force.
 - x. Risks to biodiversity from the illegal trade and consumption of wildlife.
 - xi. Risks to archeological sites and relics.
 - xii. Disruption to traffic and pedestrians' access to properties
 - xiii. Occupational health and safety of workers and villagers.
93. These impacts are expected to be short-term, localized, and can be mitigated through the application of specific requirements which will be included in the ESMP and/or ECoP for the large scheme in the emerging towns and for the small schemes in the villages respectively, and close supervision of subproject owner (DPWT). Appropriate compensation provisions will be necessary for loss of private vegetation and garden assets. Mitigation measures through the application of specific requirements included in the ESMF and/or ECoP, and close supervision of subproject owner (DPWT) will be required.
94. During operation phase impacts will be avoided or limited through complementary or new preventive operation and maintenance related procedures of the new water supply system and existing sanitation scheme. Environmental Management Plans or ECoPs will include health and safety measures as complementary steps for minimizing disturbances to nature and people. Typical operational phase environmental impacts may include:
- i. Generation of backwash water and sediments at water treatment plants.
 - ii. Water extraction to supply beneficiary villages can impact on the hydrological needs of local fisheries.
 - iii. Water supply infrastructure such as the design and location of intakes and weirs, may impact on fishery conservation zones.
 - iv. Generation of operational related general waste.
 - v. Use and disposal of hazardous materials.

- vi. Septic sludge management / disposal.
- vii. Occupational health and safety of workers
- viii. Community health and safety.

95. **Water Source Protection:** There are norms of prohibition of clearing upstream forests or polluting rivers. The Stakeholder Engagement and Assessment Framework of June 2018 revealed that it is possible that there will be forest clearance, agricultural and mining activities that may create impact on the water quality therefore it will be critical that government, principally PONRE and DONRE in consultation with DEDP/PTI and DWS, support water source protection schemes with full participation of beneficiary and near-by communities. Protecting and enhancing existing vegetation cover and limiting developments in water source catchments is essentially to maintaining supply and reducing treatment costs.

7 PROPOSED ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES AND MANAGEMENT

96. This section details mitigation and management measures by phase corresponding to potential impacts detailed in Section 6

Table 7-1: Environmental and social mitigation measures and management for pre-construction phase

SOCIAL AND ENVIRONMENTAL IMPACT	MITIGATION MEASURES	MONITORING	BUDGET	RESPONSIBLE OFFICE
I. PRE-CONSTRUCTION PHASE				
<u>Impact on Communities' land and assets</u> Loss of community assets due to land acquisition and damage to properties by construction activities.	Develop and implement land acquisition and compensation plan (RAP). The plan has to be approved by the World Bank. Design access roads to minimum necessary width and installation of pipelines within the Right-of-Way when feasible.	External RAP monitoring report.	NPSEs operations cost	PIU
<u>Water pollution</u>	Establish water quality baseline, a sample must be collected at the intake location. Samples should be collected at least once during dry season and once in the wet season.	See Annex 8 on Water Quality Standard	NPSEs operations cost	CMU
<u>Impact on other water users due to diverting away of raw water</u> Downstream river uses such as irrigation, bathing, washing, and fishing will be affected if excessive water abstraction will occur.	The abstraction rate for water supply to a subproject will be limited to maintain other river services and support downstream users.	River level assessments at the intake on a monthly basis River flow rate measurement on a monthly basis.	NPSEs operations cost	PMU, CMUNPSEs
<u>Impact to natural resources and</u>	Cutting of trees will be undertaken as per approved design and only upon	Conduct inventory of trees to be	N/A	PMU

SOCIAL AND ENVIRONMENTAL IMPACT	MITIGATION MEASURES	MONITORING	BUDGET	RESPONSIBLE OFFICE
<u>protected areas</u> Impact on natural resources and protected areas from cutting/clearing of trees and other vegetation for construction activities.	approval. Avoid cutting of trees as much as possible and minimize damage to native vegetation. Trees that need to be cut in private land, the owner of the trees will be compensated in cash by the PMU in accordance with the approved Land Acquisition and Compensation Plan. Orient workers about restrictions and prohibitions on harvesting of natural resources from protection areas.	affected.		
<u>Impact on Historical and Archaeological Sites</u> Damage to relics and artefacts during the conduct of the works.	The Contractor will ensure that the workforce are briefed that in the event of accidental finds relics they should immediately cease any works in the area and promptly report the find to their supervisor.	Accidental finds	NPSEs operations cost	PIU, NPSEs
<u>Environmental compliance</u>	Submit the IEE to PONRE and secure an Environmental Compliance Certificate (ECC) prior to subproject implementation.	Approved ECC secured from PONRE	NPSEs operations cost	PIU, NPSEs
<u>UXO contamination</u>	UXO clearance plan must be prepared and implemented prior to the subproject implementation	UXO clearance plan, complete clearance report and certificate	NPSEs operations cost	PIU, NPSEs, valid UXO clearance consultant firm, and NRA (National Regulatory Authority).

Table 7-2: Environmental and social mitigation measures and management for construction phase

II. Construction Phase				
ENVIRONMENTAL IMPACT	MITIGATION MEASURES	MONITORING	BUDGET	RESPONSIBLE OFFICE
<u>Temporary disruption of existing community roads, pathways, and accesses</u> Pipe laying will cause temporary disruption of community services and access to properties. Particularly at pipe road crossings, construction activities along narrow roads may lead to temporary blockage or closure of roads and hamper movement of vehicles and people in the emerging towns. Community access to areas in the vicinity of the WTP, pump station, reservoir, and intake will be affected. Community access to	Walking access will be maintained to affected properties and access routes will be temporarily lined with timber or similar material. Particular attention will be given to ensuring safety along roads and paths used by school children. Side street parking of construction vehicles on prolonged basis will not be allowed. Install barriers and safety warning signs on road sections and if necessary deploy traffic aides/ flag persons at affected locations. Information boards at blocked roads will provide information about the temporary closure of roads, schedule of works and the traffic-rerouting plan. Require the contractor to immediately rehabilitate the excavated areas and any damaged road and path	Contract documents to include the ECoP with health and safety provisions monitoring. If an ESMP needs to be prepared for a subproject then that would be included through the Construction Supervisor's reports. Report any complaint received from the community to PIU	Included in civil works cost	PIU, NPSEs

<p>areas in the vicinity of schools, temples, village offices, market places and meeting halls will be affected during construction of public latrines for schools and health centers.</p>	<p>sections. Enclose the WTP; pump station, reservoir, and intake perimeters so that pathway use and stream access remains unimpeded. Enclose the latrine construction site to prevent access and limit disruption for the use of the schools and public buildings.</p>			
<p><u>Air pollution</u> Dust and air emissions from earthworks and movement of vehicles can pose nuisance to nearby communities</p>	<p>Require the contractor to cover materials with tarpaulin or other suitable materials while in transit to avoid spillage of materials. Moisten earthen roads during dry and dusty conditions, particularly roads near residences and through the town core area. Impose speed limits on construction vehicles. Conduct regular maintenance on construction equipment and vehicles to control air emissions during vehicle operation.</p>	<p>Contract documents to include the EMP with health and safety provisions monitoring through the Construction Supervisor's reports. Report any complaint received from the community to PIU</p>	<p>Included in civil works cost</p>	<p>PIU is responsible for monitoring all contract work activities, while the contractor is responsible for implementing mitigations, including rehabilitation</p>
<p><u>Noise</u> Operation of construction equipment such as jackhammer will cause excessive noise resulting in nuisance to communities.</p>	<p>Limit construction activities, particularly operation of noise generating equipment at night. Position any stationary equipment that produce high noise levels such as diesel generators as far as practical from sensitive receptors. Erect temporary barriers around construction sites especially near schools, hospitals, and houses. Install noise suppression devices to noise generating equipment. Require drivers to minimize blowing of horn and to comply with speed limits. Provide information to community on schedule of construction activities through billboard/signs.</p>	<p>Include EMP in bid documents and contract. Report any complaint received from the community to PIU.</p>	<p>Included in civil works cost</p>	<p>PIU is responsible for monitoring all contract work activities, while the contractor is responsible for implementing mitigations, including rehabilitation</p>
<p><u>Impact of borrow materials</u> Quarrying of aggregates on rivers will cause siltation and affect the ecological condition of the river.</p>	<p>The contractor will be prohibited from quarrying materials directly from rivers. Construction materials will be procured from Government-permitted sources / suppliers only.</p>	<p>Include EMP in bid documents and contract. Report any complaint received from the community to PIU</p>	<p>Included in civil works cost</p>	<p>PIU is responsible for monitoring all contract work activities, while the contractor is responsible for implementing mitigations, including rehabilitation</p>
<p><u>Impact on ecological resources</u> Construction workers may undertake hunting of wildlife and cutting of wood upstream of the intake.</p>	<p>The contractors will prohibit activities such as cutting wood for cooking, hunting of wildlife for consumption and trading.</p>	<p>Include EMP in bid documents and contract Report any complaint received from the community to DPWT or sustainability Unit. of Nam Saat.</p>	<p>Included in civil works cost</p>	<p>PIU is responsible for monitoring all contract work activities, while the contractor is responsible for implementing mitigations, including</p>

				rehabilitation
<p><u>Clearing of vegetation</u> Poor planning and execution of tree clearing/vegetation removal at project facilities and along pipeline alignments can result in loss of vegetation and general landscape.</p>	<p>Cutting of trees will be undertaken as per approved design and only upon approval of relevant authorities. Avoid cutting of trees as much as possible and minimize damage to native vegetation. Trees that need to be cut in private land, the owner of the trees will be compensated in cash by the PMU in accordance with the approved Land Acquisition and Compensation Plan.</p> <p>Roads and paths to the intake, WTP, and reservoir will only be sufficiently wide to accommodate construction vehicles/equipment to minimize land take.</p> <p>Manual labor will be utilized in sloping terrain where use of heavy equipment would cause unnecessary damage. Steep exposed slopes will be graded and covered with bush and grass to minimize erosion.</p> <p>Implement landscaping and planting of trees/vegetation at WTP site.</p>	<p>Include EMP in bid documents and contract</p> <p>Report any complaint received from the community to PIU</p>	<p>Included in civil works cost</p>	<p>PIU is responsible for monitoring all contract work activities, while the contractor is responsible for implementing mitigations, including rehabilitation</p>
<p><u>Water pollution - Sediment runoff</u> Sediment runoff undertaken during excavation, earthworks and grading in the rainy season will cause siltation of rivers.</p>	<p>Construct silt traps, deviation channels, mounting barriers or trenches around the stockpiles of materials.</p>	<p>Include EMP in bid documents and contract</p> <p>Report any complaint received from the community to PIU</p>	<p>Included in civil works cost</p>	<p>PIU is responsible for monitoring all contract work activities, while the contractor is responsible for implementing mitigations, including rehabilitation</p>
<p><u>Water Pollution - Worker's camp</u> Domestic wastewater from worker's camp would result to the discharge of sewage into drainage canals.</p> <p>Unsanitary conditions at the worker's camp will occur without the provision of necessary sanitation arrangements.</p>	<p>Provide adequate water supply and temporary toilet facilities at the worker's camp.</p>	<p>Include EMP in bid documents and contract</p> <p>Report any complaint received from the community to PIU</p>	<p>Included in civil works cost</p>	<p>PIU is responsible for monitoring all contract work activities, while the contractor is responsible for implementing mitigations, including rehabilitation</p>
<p><u>Water pollution - Generation of residual chlorine during pipeline and reservoir disinfection</u> Prior to commissioning, disinfection will be undertaken on the pipeline and reservoir.</p> <p>Discharge of residual chlorine above the allowable limits is toxic to fish and other aquatic life.</p>	<p>Follow the recommended dosage of chlorine during the disinfection of pipes and reservoir. Discharge of water with high chlorine concentration to soil at the end of pipelines to be controlled to minimize soil erosion.</p>	<p>Include EMP in bid documents and contract</p>	<p>Included in civil works cost</p>	<p>PIU is responsible for monitoring all contract work activities, while the contractor is responsible for implementing mitigations, including rehabilitation</p>
<p><u>Generation of construction waste - Generation of excavated soil</u></p>	<p>During pipe laying, excavated material will be utilized to backfill the trench. The contractor will be</p>	<p>Include EMP in bid documents and contract</p>	<p>Included in civil works cost</p>	<p>PIU is responsible for monitoring all contract work</p>

Generation of excavated materials during pipe laying and foundation works for WTP tanks and reservoirs.	required to properly reinstate the excavated trench after completion of pipe laying. Surplus excavated material/cut soil from construction of the WTP and reservoir will be used as backfill material for low-lying areas that have been identified by the village authority.	Report any complaint received from the community to PIU		activities, while the contractor is responsible for implementing mitigations, including rehabilitation
<u>Generation of construction wastes – Solid, Inert and Hazardous Wastes</u> Solid wastes, inert construction wastes, and hazardous wastes during construction will result to pollution of land and receiving water bodies.	Provide appropriate segregation bins or areas for construction wastes. Secure and control storage of all hazardous materials including fuels. Reuse recyclable construction wastes such as wood, steel, and scaffoldings or sell to junk shops. Solid waste to be collected and disposed in approved disposal site of the District.	Include EMP in bid documents and contract Report any complaint received from the community to CMU	Included in civil works cost	PIU is responsible for monitoring all contract work activities, while the contractor is responsible for implementing mitigations, including rehabilitation
<u>Community health and safety</u> Community may be exposed to dangers of open excavation	Install barricades/barriers and sturdy plate covers in open excavations during non-working time. Install warning signs in the area.	Include EMP in bid documents and contract Report any complaint received from the community to PIU	Included in civil works cost	PIU is responsible for monitoring all contract work activities, while the contractor is responsible for implementing mitigations, including rehabilitation
<u>Occupational health and safety</u> Construction activities may pose hazards to workers because of the use of heavy equipment, lifting of heavy loads, and exposure to open excavations and chemicals. Potential conflict with local people will occur if migrant workers will be brought to the site.	Require the contractor to implement the construction health and safety plan in accordance with the World Bank EHS Guidelines (http://www.ifc.org/ehsguidelines) as a minimum standard. The contractor will appoint an environment, health and safety officer to ensure implementation of the plan. The plan will at minimum include: <ul style="list-style-type: none"> • Provision of first-aid facilities readily accessible by workers. • Provision of personal protective equipment (PPEs) such as hard hats, gloves, rubber boots, etc., • Wearing of PPEs while working onsite will be a mandatory requirement for workers. • Posting of safety signs/reminders in strategic areas within the construction area. • Installation of sufficient lighting at night. • Employ only trained personnel in handling chlorine during the line disinfection process. • Ensure that vehicle and equipment operators are properly licensed and trained. • Provide staff with communicable disease and HIV-related awareness training. The contractor will be required to	Contract documents to include the EMP with health and safety provisions and a code of conduct which will be monitored through the Construction Supervisor's reports. Report any complaint received from the community to PIU.	Included in civil works cost	PIU is responsible for monitoring all contract work activities, while the contractor is responsible for implementing mitigations.

	provide priority hiring of qualified construction workers from the villages and consult with the local authority to avoid conflict if migrant workers will be brought into the site.			
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Table 7-3: Environmental and social mitigation measures and management for operation phase

III. Operation Phase				
ENVIRONMENTAL IMPACT	MITIGATION MEASURES	MONITORING	BUDGET	RESPONSIBLE OFFICE
<p><u>Generation of incremental waste water and increased burden on drainage systems</u></p> <p>Increased water supply to public buildings and households will generate additional quantities of wastewater.</p>	<p>As project policy, water connection will be provided only if the household has an approved sanitation facility to cope with the increased wastewater generated.</p> <p>The public institution shall sign a service and management agreement before construction and have sufficient funds to maintain the facility.</p>	<p>Monitor the number of households with latrines and with water connections, population served, and billed water volume.</p> <p>Monitor that the service and management agreements are followed and facilities are properly maintained.</p>	Part of NPSEs operations cost	NPSEs
<p><u>Deterioration of water quality</u></p> <p>Potential deterioration in quality of raw water supply and of treated water</p> <p>Potential risk on public health in deterioration of treated water quality due to use of poor-quality treatment chemicals</p>	<p>Monitor community activities in the catchment area that may cause contamination of raw water quality.</p> <p>Provide laboratory test equipment and training to allow the NPSEs to conduct regular monitoring of raw and treated water quality parameters.</p> <p>Follow O&M standard operating procedures in accordance with the water treatment plant manuals.</p> <p>Use of potable grade chemicals, especially PAC, and request a Supplier product specification data sheet signed off by a reputable external laboratory.</p>	<p>Monitor the following parameters:</p> <p>Daily at the inlet to the treatment plant: turbidity, pH</p> <p>Daily after the reservoir: pH, turbidity, residual chlorine, temperature</p> <p>Weekly at several locations in the network: residual chlorine, pH, turbidity.</p> <p>Annually after Clearwater tank for parameters in the annex 8-Standard Water Quality.</p>	Part of NPSEs operations cost	NPSEs
<p><u>High Pressure and Leaks on the Pipeline</u></p> <p>The proposed distribution network will have sections located at low elevations which may experience high water pressure which may potentially result in leakages in the line and ultimately water loss</p>	<p>This risk will be minimized by: (i) the use of durable standard pipes for the main and secondary (rider mains) lines, (ii) use of pressure reducing valves for the rider mains, (iii) careful construction supervision by the Project Implementation Assistance Consultants PIA to ensure that pipe laying and jointing is done to the highest standard by the contractor, and (v) regular inspection of the network and prompt isolation and repair when leaks occur.</p>	<p>Daily visual monitoring of pipelines.</p> <p>Occasional pressure monitoring will also be applied.</p>	Part of NPSEs operations cost	NPSEs
<p><u>Occupational health and safety</u></p> <p>Potential hazards to WTP workers due to accidental release of</p>	<p>Provide secure, dry and well ventilated storage facilities for chlorine and other hazardous chemicals.</p> <p>Use chlorine compounds in power</p>	<p>Training undertaken for staff on chemicals handling and monitoring and</p>	Part of NPSEs operations cost	NPSEs

III. Operation Phase				
ENVIRONMENTAL IMPACT	MITIGATION MEASURES	MONITORING	BUDGET	RESPONSIBLE OFFICE
chlorine	form, which is safer than gas. Training of staff and allocation of responsibility to ensure that materials are properly handled.	reporting of incidents		
<u>Community health and safety</u> Potential hazards to residents and school children near the WTP site.	Facilities (Intake, WTP and Laboratory, Office and Reservoir) properly fenced and secured and watchmen/security personnel to be employed on a 24 hour basis.	Daily log of security personnel	Part of NPSEs operations cost	NPSEs

8 PRINCIPLES FOR IMPACT MITIGATION

97. In order to ensure that the environmental and social issues are addressed properly in accordance and in compliance with the World Bank Safeguards Policies, all project activities in particular the construction of new water supply system including raw water intakes, water treatment plants, storage tanks or towers, and pumping stations; new pipe laying or pipe replacement (usually along road alignments); and construction of public sanitation facilities shall undergo screening, assessment, review, and clearance process before execution of the physical activities shall undergo screening, assessment, review, and clearance process before execution of the physical activities. The project will use a structured approach to environmental and social management to allow the project development process, follow the hierarchy of avoidance, minimization, compensation/mitigation for negative impacts and enhancement of positive impacts where practically feasible and advantageous. This chapter describes the process for ensuring that environmental and social concerns are adequately addressed through the institutional arrangements and procedures used by the project for managing the identification, preparation, approval, and implementation of subprojects. Detailed environmental and social safeguard process are in Table 8-1.

Table 8-1: Steps for E&S Screening, E&S impact Assessment, Appraisal, Monitoring and Reporting

WSSP E&S Capacity & Sub-projects Process	Responsible Entity/person	Resource / Toolkit *
<u>Step 1: E&S Screening and Review</u>		
1.1 Eligible screening <ul style="list-style-type: none"> • Check against non-eligible activities 	PMU together with DPWT, NPSEs and DHHP	Annex 4: Non-eligible activities
1.2 E&S Impact/Risk screening <ul style="list-style-type: none"> • Safeguard screening • Identify sub-project Category and if safeguard instrument will be required. (No safeguard instrument will be required for Category C sub-project) 	PMU together with DPWT, NPSEs and DHHP	<ul style="list-style-type: none"> • Table 8-2: Site Sensitivity and Safeguard Policies • Annex 1: Safeguard Screening & Project categorization <ul style="list-style-type: none"> ○ Form A: Initial screening ○ Form B: Environmental Assessment Category Screening Form for Water Supply and Sewage Treatment Maintenance ○ Form C: Ethnic group screening ○ Land Acquisition & Resettlement (LAR) Screening Form for Water Supply and Sanitation Project
<u>Step 2: E&S Impact Assessment</u> <ul style="list-style-type: none"> • Identify environmental and social impacts and determine safeguard instruments • First public consultation 	PMU together with DPWT, NPSEs and DHHP	<ul style="list-style-type: none"> • Annex 1: Safeguard Screening & Project categorization <ul style="list-style-type: none"> ○ Form A: Initial screening ○ Form B: Environmental Assessment Category Screening Form for Water Supply and Sewage Treatment Maintenance ○ Form C: Ethnic group screening ○ Land Acquisition & Resettlement (LAR) Screening Form for Water Supply and Sanitation Project

WSSP E&S Capacity & Sub-projects Process	Responsible Entity/person	Resource / Toolkit *
<p><u>Step 3: Appraisal with Environmental and Social Safeguard instrument</u></p> <ul style="list-style-type: none"> • Prepare IEE and get clearance from PoNRE if the sub-project required IEE • Prepare Environmental Code of Practices (ECoP), RAP/ARAP and EGDP • Second public consultation (as necessary) 	<p>PMU, PIU with the assistance of registered environmental and social consultants to prepare IEE</p>	<ul style="list-style-type: none"> • Annex 3: Environmental Code of Practice (ECoP) • Appendixes 3 & 4 in Annex 6: Resettlement Policy Framework • Annex 7: Ethnic Groups Development Framework (EGDF)
<p><u>Step 4: Monitoring and Reporting</u></p> <ul style="list-style-type: none"> • Annual E&S Report from PIU • Annual PMU/DWS Report to WB 	<p>PMU, PIU DEDP/PTI</p>	<ul style="list-style-type: none"> • STEP 4- Monitoring and Reporting • E&S Supervision/Audit Report

* All referenced tools and guidance are found in the Annex and separate **Social safeguard instrument**.

8.1 STEP 1: ENVIRONMENTAL AND SOCIAL SCREENING

98. This screening is essential to quickly assess potential environmental and social impacts of the subproject interventions. The screening identifies the consequences of the proposed subprojects in the broader sense, without having very much detailed investigation. Critical issues are also identified through the screening which needs detailed investigation during the impact assessment. Based on the extent of environmental and social impact obtained from the screening result, the decision for further environment and social impact assessment will be taken. The screening includes eligibility screening and E&S impact screening for assessment of potential impacts, policies triggered and instruments to be prepared. The E&S impact screening needs to be carried out all the major components of the subprojects.

8.1.1 Eligibility Safeguard Screening

99. The project aims at improving water supply system and sanitation in rural villages and emerging towns in northern provinces of Lao PDR. This is done through (a) rehabilitation of existing water supply systems (water intake, water treatment plants, building of PUI offices, installation of pipe networks etc.); (b) construction of public sanitation facilities; (c) support capacity building/strengthening of DPWT, DWS, Nam Saat/DHHP; (d) support establishment/strengthening of Village Development Committee to effectively operate and maintain small scale water supply infrastructure. Screening will be based on an assessment of subprojects and site sensitivity. List of non-eligible activities was provided in Annex 5. It is anticipated that some subprojects for the emerging towns will require IEE as per Lao PDR Law and thus an IEE needs to be prepared and submitted to PoNRE for its clearance and ECC should be obtained before physical construction can start. The project will finance IEE required sub-projects with the condition that IEE was approved by PoNRE prior to sub-project.

8.1.2 E&S Screening (Determination of sub-project Category and Safeguard Instrument Requirement)

100. After subprojects are determined to be eligible for financing, a E&S impact screening will be carried out. The purposes of the E&S screening are to: (i) identify the World Bank safeguard policies triggered; (ii) classify subprojects into B or C categories as per site sensitivity matrix in Table 8-2 and Guidance to classify level of impact from the sub-project activities; and (iii) to determine if the safeguard instrument needs to be prepared for the sub-project.

101. The screening also provides brief descriptions of the nature and extent of potential negative impacts on natural and environmental resources and local people related to land acquisition, resettlement, land donation, and/or involvement with ethnic minority. For the Category C sub-project, no safeguard instrument will be required and form B in Annex 1 will be filled up as an attachment to the sub-project proposal. For the sub-project type that requires IEE, it is likely to be classified as Category B sub-project. However, it is unlikely that the small scale water supply systems for one single village be required IEE. Form B Annex 1 will be used to screen sub-project category and assess the project and identify type of safeguard instrument needs to be prepared and implemented by the subproject.

Table 8-2: Site Sensitivity and Safeguard Policies

Safeguard Policy or Site Characteristic	SITE SENSITIVITY		
	Low Sensitivity	Medium Sensitivity	High Sensitivity
Natural Habitats (OP 4.04)	No natural habitats present of any kind	No critical natural habitats; other natural habitats occur	Critical natural habitats present
Forest (OP 4.36)	No production, conservation and protection forest present of any kind	Production forest present but no conservation and protection forest present	Conservation and protection forest present
Physical Cultural Resources (OP 4.11)	No known or suspected physical cultural resources as per OP 4.11 including sacred grove present	No physical cultural resources (PCR) as per OP 4.11 including sacred grove present but has historical record from villagers or local authorities' potential to chance find the PCR	Physical cultural resources as per OP 4.11 including sacred grove present
Resettlement (OP 4.12)	No new sites are required. Project site is already acquired and is free of squatter; legal tenure is well- defined.	Project site has tenant renters. Yet to be acquired.	Project site will entail resettlement of vulnerable or required land more than 10% of agriculture land
Indigenous Peoples (OP 4.10)	No indigenous population	Dispersed and mixed indigenous populations; mainstream (highly acculturated) indigenous populations	Indigenous territories and reserves; vulnerable indigenous populations

Natural hazards vulnerability; floods, soil stability/erosion	Flat terrain; no potential stability/erosion problems; no known volcanic/seismic/flood risks	Medium slopes; some erosion potential. Medium risks to erosion. volcanic/seismic/flood/hurricanes	Mountainous terrain; steep slopes; unstable soils; high erosion and land slide potential; volcanic, seismic or flood risks
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8.2 STEP 2: IMPACT ASSESSMENT (DETERMINATION TYPE OF SAFEGUARD INSTRUMENT REQUIREMENTS)

102. After an E&S impact screening was conducted and the sub-project Category was identified, the sub-project category B detailed impact assessment will be carried out. The purpose of the impact assessment is to identify from the level of the impact and determine the type of safeguard instrument that needs to be prepared for the subproject (e.g. IEE, or ESMP or ECoP). The impact assessment will be used as an input to set scope of mitigation measures. The impact assessment will give the environment and social issues due importance in the decision-making process by clearly evaluating the environmental and social consequences of the proposed sub-project before action is taken. Early identification and characterization of critical environmental and social impacts allows the public and the government to form a view about the environmental and social acceptability of a proposed development sub-project and what conditions should apply to mitigate or minimize those risks and impacts. The scope of the impact assessment will depend on the screening results. Data collection, field survey, and consultation with local communities and affected population will be carried out.
103. As the water supply and sanitation project is small scale in nature, it is unlikely that the proposed sub-projects will be classified as Category A of which will require EIA. However, it is anticipated that as per the requirement of the Lao government, an IEE will be required for the subprojects in the emerging towns. Where no IEE is required, ECoP, ARAP/RAPs and/or EGDPs will be prepared in line with this ESMF, RPF and/or EGDF which has been developed for the Project. Due attention should also be given to address the issues related to gender, ethnic groups, and other vulnerable groups.
104. In brief, depending on the results of the screening exercise and level of the Category B - subproject impact, following documents will be required at subproject level:
- Initial Environmental Examination (IEE)
 - Environmental Codes of Practice (ECoP);
 - Abbreviated Resettlement Action Plan (ARAP)
 - Resettlement Action Plan (RAP);
 - Ethnic Group Development Plan (EGDP);
 - Gender Action Plan, including Gender Monitoring Plan that are integrated into any applicable instruments (ARAP/RAP/EGDP).

Table 8-3: Definition of required subprojects' safeguard document

Type of Category B Sub-Project	Level of Impact	Required Safeguard Instruments
Type and size of project that required IEE	Likely significant negative impact that can be mitigated through appropriate mitigation measures	Initial Environmental Examination (IEE)
Type and size of project that not required IEE	Moderately negative impact that can be mitigated through appropriate mitigation measures	Environmental and Social Management Plan
Type and size of project that not required IEE	Low negative impact that can easily mitigate through code of practices to be attached as part of contractor contract	Environmental Code of Practices

105. The key steps of impact assessment are: planning, scoping, impact assessment and consultation. The impact assessment will clarify: (i) how will the particular subproject activity give rise to an impact? (ii) how likely is it that an impact will occur? (iii) what will be the consequence of each impact? and (iv) what will be the spatial and temporal extent of each impact? The assessment of impacts largely depends on the extent and duration of change, the number of people or size of the resource affected and their sensitivity to the change. Potential impacts can be both negative and positive (beneficial), and the methodology defined in Step 3 will be applied to define both beneficial and adverse potential impacts and propose mitigation measures.

8.3 STEP 3: APPRAISAL WITH ENVIRONMENTAL AND SOCIAL SAFEGUARD INSTRUMENT

106. After the subproject categorization and the safeguard instrument/s is/are identified, those instruments will be prepared and completed before project implementation.

8.3.1 Mitigation Measures and Public Consultation

107. *Mitigation Measures:* Appropriate mitigation measures will be identified according to the nature and extent of the potential negative impacts. ECoP for specific type of sub-projects will be used to minimize adverse impacts and enhance positive impacts. For all Category C subprojects to be implemented under the project, the ECoP should be a part of the Contract Document.

108. *Public Consultation:* Preparation and implementation of the subproject safeguards documents during project preparation need to follow the Bank requirements for public consultation under OP 4.01. The objectives of consultation are to generate public awareness by providing information about a sub-project to all stakeholders, particularly the sub-projects affected persons (PAPs) in a timely manner and to provide opportunity to the stakeholders to voice their opinions and concerns on different aspects of the project. Consultation would help facilitate and streamline decision making whilst fostering an atmosphere of understanding among individuals, groups and organizations, who could affect or be affected by the subprojects.

109. Consultation is a continuous process by which opinion from public is sought on matters affecting them. The opinions and suggestions of the stakeholders would assist PIU/DPWT in taking appropriate decisions for effective environmental and social management of the sub-projects. It would help facilitate and streamline decision making whilst fostering an atmosphere of understanding among individuals, groups and organizations, who could affect or be affected by the subprojects. The specific objectives of public consultation are:

- To keep stakeholders informed about the sub-projects at different stages of implementation,
- To address the environmental and social concerns/impacts, and device mitigation measures taking into account the opinion/ suggestions of the stakeholders,
- To generate and document broad community support for the sub-projects,
- To improve communications among interested parties; and
- To establish formal complaint submittal/resolution mechanisms.

110. At least 2 stages of consultation with the project affected people, project beneficiary and relevant stakeholders will need to be carried out. The first stage consultation for environmental and social impact assessment is required during the subproject E&S screening level. The second level consultation should be carried out once the impacts are clearly identified and draft management plan are prepared. If required, more than two consultations should be carried out. The following are the guidelines for carrying out consultation:

- The mode of consultation will be either public consultation (PC) or focus group discussion (FGD). The consultative meeting or discussion will provide opportunity to the participants to raise their concerns freely about the sub-projects and their impacts on their life, livelihood and their community as a whole. Discussion will also be focused on subproject(s) specific environment and social issue, so that stakeholders can contribute their knowledge on better environmental and social management.
- The composition of participants may differ depending on the nature and location of the sub-projects. A stakeholder analysis needs to be carried out to identify the key stakeholders and Project Affected Persons (PAPs). Depending on the social formation and interest of different groups, separate meetings should be organized.
- Information on the PC/FGD needs to be announced locally using loud speakers and putting notices in public important places at least 7 to 10 days prior to the consultations. In general, it must be ensured that the PAPs and other stakeholders are informed and consulted about the sub-project, its impact, their entitlements and options, and allowed to participate actively in the development of the subproject. This should be done particularly in the case of vulnerable PAPs, such as affected ethnic groups. This exercise should be conducted throughout the sub-project preparation, implementation, and monitoring stages. An open-door policy should be maintained for community people, so that stakeholders feel comfortable approaching DPWT/OPWT directly to ask questions and raise concerns on environmental and social issues. Create a responsive management system should be created for recording and responding to comments and concern on environmental and social issues. It should be ensured that the DPWT/OPWT and its consultant capable of responding to questions/comments, appropriately.

8.4 Step 4: Monitoring and Reporting

111. *Monitoring Plan:* The primary objective of the environmental and social monitoring is to record environmental and social impacts resulting from the sub-project activities and to ensure implementation of the “mitigation measures” identified earlier to reduce adverse impacts and enhance positive impacts from project activities. Apart from general monitoring of mitigation/enhancement measures, important environmental and social parameters will be

monitored during the construction and operation phases of the subprojects. The requirement and frequency of monitoring would depend on the extent and scope of subproject and field situation.

RAP Monitoring

112. Monitoring is a continuous evaluation process of the project implementation which is related to the unified implementation schedule on the use of the project inputs, infrastructures and services. Monitoring provides concerned agencies with continuous reflections on the implementation status. Monitoring determines the reality, successful possibility and arising difficulties as soon as possible to facilitate the due adjustment in the project implementation.

Monitoring includes 2 following purposes:

(i) Monitor whether the project activities complete efficiently or not, including quantity, quality and time.

(ii) Assess whether these activities reach the objectives and purpose of the Project or not, and how much do they reach.

113. The executing agency (PMU/DWS) with the support of the DEDP/PTI shall monitor and supervise the RAP implementation regularly.

Internal Monitoring

114. Internal monitoring of the ARAP/RAP implementation of the Subprojects is the main responsibility of the implementation agency with the assistance of the project consultants. The implementation agency will monitor the progress of RAP preparation and implementation throughout the regular progress reports. The criteria of internal monitoring include but not limit

(i) Compensation payment for affected households for the different types of damage pursuant to the compensation policies described in the resettlement plans

(ii) Implementation of technical assistance, relocation, allowance payment and relocation assistance.

(iii) Implementation of income recovery and entitlement to recovery assistance.

(iv) Dissemination of information and consultation procedures.

(v) Monitoring of complaint procedures, existing problems that require the manageable attention.

(vi) Prioritizing affected persons on the proposed selections.

(vii) In coordination to complete RAP activities and award construction contract.

115. The PMU/DWS will collect information every month from the different resettlement committees. A database tracking the resettlement implementation of the Project will be maintained and updated monthly. The PMU/DWS will submit internal monitoring reports on the ARAP/RAP implementation as a part of the quarterly report they are supposed to submit PTI and the WB. The reports should contain the following information:

(i) Number of affected persons according to types of effect and project component and the status of compensation, relocation and income recovery for each item.

(ii) The distributed costs for the activities or for compensation payment and disbursed cost (iii) for each activity.

- (iv) List of outstanding Complaints
- (v) Final results on solving complaints and any outstanding issues that demand management agencies at all levels to solve.
- (vi) Arisen issues in the implementation process.
- (vii) RP Schedule is actually updated.

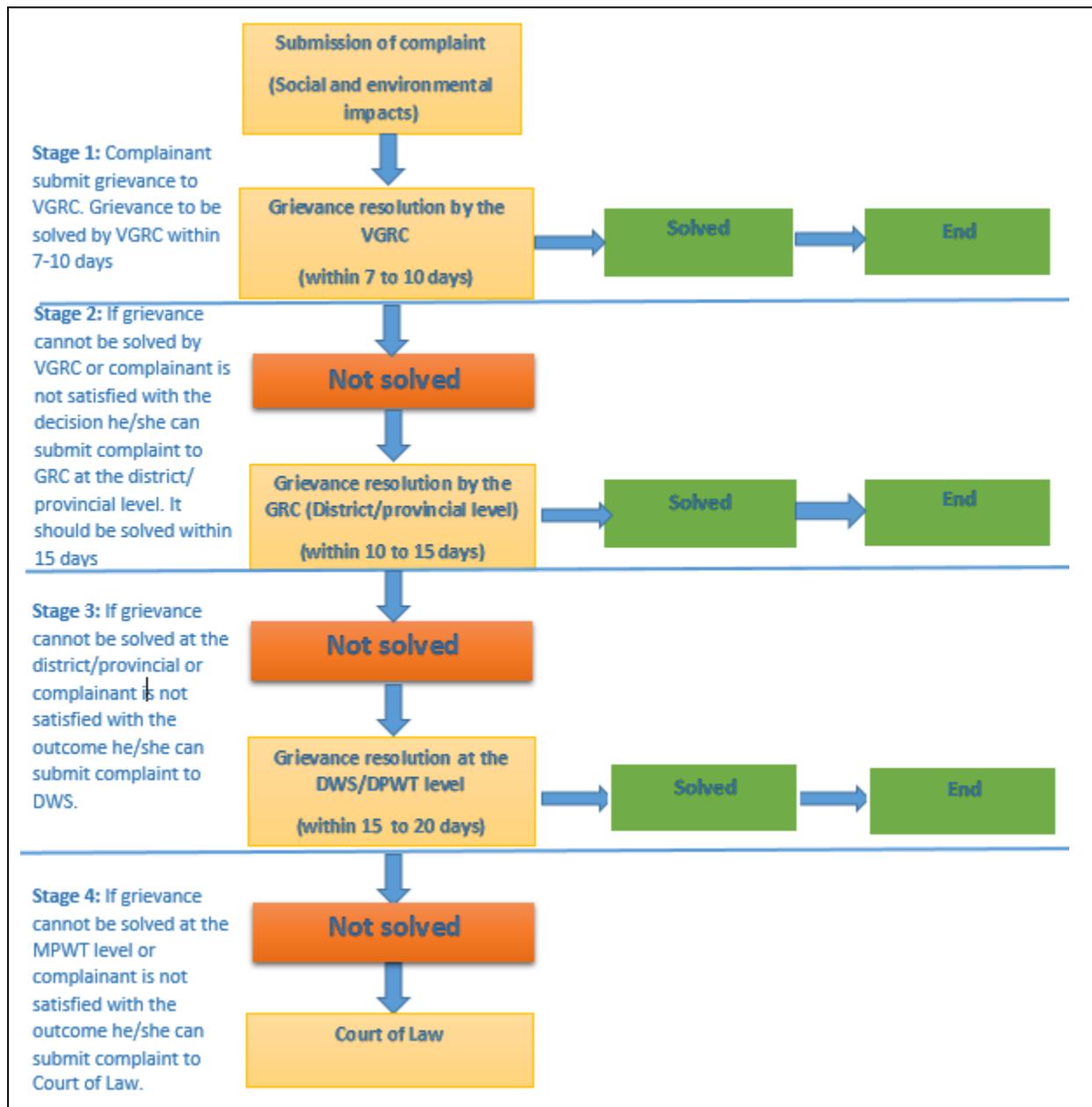
9 GRIEVANCE REDRESS MECHANISM

116. Part VI of Decree 84/GoL requires the Project to establish an effective mechanism for grievance resolution. A well-defined grievance redress and resolution mechanism will be established to resolve grievances and complaints in a timely and satisfactory manner. The objective of the grievance redress mechanism is to resolve complaints as quickly as possible and at the local level through a process of conciliation; and, if that is not possible, to provide clear and transparent procedures for appeal. All affected persons will be made fully aware of their rights, and the detailed grievance redress procedures will be publicized through an effective public information.
117. A grievance redress and resolution mechanism will be established to resolve grievances and complaints in a timely and satisfactory manner. The objective of the grievance redress mechanism is to resolve complaints as quickly as possible and at the local level through a process of conciliation; and, if that is not possible, to provide clear and transparent procedures for appeal. All affected persons will be made fully aware of their rights, and the detailed grievance redress procedures will be publicized through effective public information. For the purposes of grievance redress and resolution, the Project will rely on the existing district offices and village arbitration units. District grievance redress committee will be composed of the Chief or Deputy Chief of the District, Head of OPWT, Head of District Health Office, Head of DONRE, Head of DAFO, head of LWU Office, Head of Lao Front, head of District Justice Office and head of the target villages. Village arbitration units will be established in subprojects areas that do not yet have existing units. The village arbitration unit generally consists of the village chief and/or deputy chief, village elders and village representatives of the Lao Women's Union (LWU), Lao Front for National Construction (LFNC), and the police; the unit is responsible for settling disputes between villagers through conciliation and negotiation. At the district and provincial levels, the district and provincial resettlement committees that are composed of concerned departments, local officials, village chiefs and mass organizations will act as grievance officers.
118. The grievance mechanism is based on key principles that will protect the rights and interest of project participants; ensure that their concerns are addressed in a prompt and timely manner, and that entitlements are provided in accordance with GoL and Bank safeguard policies. PIU/DPWT will ensure that communities directly affected by the Project have a full understanding of the GRM and ways to access it especially on (i) the concept of compensation for any involuntary acquisition of land and/or assets and (ii) ensuring environmental and social mitigation measures in the ESMP's are implemented as planned. APs are entitled to lodge complaints regarding any aspect of the environmental and social impacts associated with the Project. The AP's complaints can be made verbally or in written form to the GRC or, alternatively, raise his/her voice in a public or individual meeting with project staff.
119. The proposed grievance redress procedures during the WSSP can be summarized below:
- a. Stage 1: In the first instance, APs will address complaints on any aspect of compensation, relocation or unaddressed losses to the village arbitration unit (VAU) or other designated village grievance officers. The VAU will organize a meeting with the complainants to resolve the issue using its traditional methods of conciliation and negotiation; the meeting will be held in a public place and will be opened to other APs and villagers to ensure transparency. The VAU aims at clarification and amicable solution agreed with the subproject.
 - b. Stage 2: If after 10 days of lodging the complaint, no understanding or amicable solution can be reached or no response is received from the village arbitration unit, the complainant can bring the complaint to the District/provincial GRC. The District/provincial

GRC will be involved to meet with the complainant and VAU to discuss the complaint, and provide a decision at mutual arrangement within 15 days of receiving the appeal.

- c. **Stage 3:** If the AP is still not satisfied with the decision of the PRC, or in the absence of any response within the stipulated time, the complainant can submit his/her grievance to Department of Water Supply. The DWS will act on behalf of the MPWT. It may consider to seek external opinion on this matter and the appeal must be solved within 20 days of receiving the appeal.
- d. **Stage 4:** As a last resort, the AP may submit his/her case to the Court of Law. The complaint will be lodged with the Court of Law; the decision of the Court will be final.

Figure 10-1: Grievance Procedures



120. It is recognized that in many cases, APs do not have the writing skills or ability to express their grievances verbally, however, APs are encouraged to seek assistance from the family members, friends, village heads or village unit chiefs to have their grievances recorded in writing and to have access to relevant documentation, and to any survey or valuation of assets, to ensure that where disputes do occur all the details have been recorded accurately enabling all parties to be treated fairly. In the case of verbal complaints, a written record of the complaint will be made during the first meeting with the AP. APs who present their complaints within the prescribed procedures will be exempt from all administrative fees incurred. In addition, APs who lodge complaints and appeals to provincial courts will be provided with free legal representation.
121. Recording and processing of grievances: All submitted complaints and grievances will be entered into a database/project files which will be updated regularly. Each complaint and grievance should be ranked, analyzed and monitored according to type, accessibility and degree of priority. The status of grievances submitted and grievance redress will be reported by PIU/DPWT to PMU/DWS. Right of local authority, mass organization, and/or individual to file the grievance and receive attention will be publicly informed/communicated to the local residents and general public through appropriate media (poster, website, etc.). The GRM procedures to be followed for all subprojects will be printed out in poster and posted at the village halls so that they are easily accessible to all stakeholders and made available by the DPWT. All complaints and resolutions will be properly documented by the concerned resettlement committee and be available for the public and review for monitoring purposes.
122. Safeguard monitoring reports will include the following aspects pertaining to progress on grievances: (a) number of cases registered with the Grievance Redress Committee (GRC), level of jurisdiction (first, second, and third tiers), number of hearings held, decisions made, and the status of pending cases; and (b) lists of cases in process and already decided upon may be prepared with details such as name, identification with unique serial number, date of notice, date of application, date of hearing, decisions, remarks, actions taken to resolve issues, and status of grievance (i.e. open ,closed or pending).
123. The Independent External Monitor (IEM) that can be DEPD/PTI will be responsible for checking the procedures for and resolution of grievances and complaints. The IEM may recommend further measures to be taken to redress unresolved grievances.
124. Communities and individuals who believe that they are adversely affected as a result of Water Supply and Sanitation project, as defined by the applicable policy and procedures, may submit complaints to the existing program grievance redress mechanism or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address pertinent concerns. Affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

10 ESMF IMPLEMENTATION AND MONITORING ARRANGEMENT

10.1 IMPLEMENTATION

125. The implementation of the environmental and social safeguard will follow the Project Implementation arrangement. The project implementing agencies will be MPWT, MoH, and the

four project provinces. At central level, MPWT will be responsible for overall implementation and effectiveness, coordination with concerned ministries, including Ministry of Finance and Ministry of Planning and Investment, to process necessary legal amendments or project restructuring to facilitate project implementation, enhance disbursement, and improve the efficiency of the use of IDA.

126. WSSP is joining implementing by MPWT and MoH. MPWT- is the central agency responsible for coordination with concerning stakeholders and overall project implementation.
127. DWS/MPWT - is core of implementing agency of the Project. The Project Management Unit under DWS will work closely with the national and international consultants for preparing the ESMP, ARAP/RAP, EGD in coordination with PIUs. In addition, PMU will also conduct consultations and make local authorities and target communities understand and follow safeguard policy; and lead PUI to monitor project activities.
128. DEDP/PTI/MPWT- will support DWS in annual external monitoring of compliance with safeguard policy in this ESMF.
129. MoH - is part of the project responsible for implementing their respective activities under Components 1 and 2. Hence, MoH assign Nam Saat/DHHP to coordinate with PIU/DPWT to support community water supply and hygiene. The activities amongst others include (i) capacity building for sustainability of community water supply and support for Component 1 implementation, including water safety, and sanitation and hygiene in communities, schools and health centers; (ii) guidelines for self supply for remote villages, (iii) guidelines for sanitation and SBCC, (iv) district-wide sanitation plans; (v) strengthening of sanitation supply chains; (vi) water quality monitoring and surveillance system, (vii) sector M&E system; (viii) national awareness campaigns; (ix) orientation and training of provincial and district staff; (x) rolling out CLTS curriculum at schools and universities.
130. DPWT – will take a lead responsible role at provincial level to supervise E&S consultant and PMU to conduct screening process, review and endorse sub-project proposal, monitor compliance of subproject proposal implementation. For sub-project proposal that required IEE, DPWT will communicate with PoNRE to set out line and timeframe for IEE approval process to ensure the subproject will be completed within the project closing date. DPWT together with OPWT and PMU as well as E&S will conduct regular meeting with PoNRE and other line agencies related to subproject implementation to receive feedback if any recommendation to support the project implementation or any complaint arise due to the sub-project implementation and provide way to resolve the issues.
131. NPSEs - will be responsible for the technical design, contracting and supervision of water supply works. It will monitor together with the site engineer supervision consultant contractor 's compliance with the ECoP/ESMP.
132. OPWT – will take a lead responsible role at district level to supervise E&S consultant and PMU to conduct screening process, review and endorse subproject proposal, monitor compliance of subproject proposal implementation. For subproject proposal that required IEE, OPWT will communicate with PoNRE to set out line and timeframe for IEE approval process to ensure the subproject will be completed within the project closing date. OPWT together with DPWT and PMU as well as E&S will conduct regular meeting with PoNRE to receive feedback if any complaint arise due to the subproject implementation and provide way to resolve the issues.

133. E&S Consultant- E&S consultant will work closely with PMU to provide support in E&S screening and prepare appropriate safeguard instrument. E&S consultant will also supervise and monitor the implementation of the ECoP.
134. PMU - Project Management Unit under DWS will take a coordinator role and provide technical support to E&S consultant to ensure safeguard compliance of sub-project. PMU will supervise the implementation of the ECoP, ESMP, araP/RAP, and or EGDP and will contract qualified laboratory for the monitoring including laboratory testing of water and reporting. PMU will contact PoNRE to determine if the project implementation is meeting all specified ESMF, IEE and ECoP and related social safeguard requirements. PMU will perform supervision site visit during construction works to confirm the ECoP are being adequately implemented.

10.2 MONITORING AND REPORTING

135. To ensure effective implementation of the ESMF requirements, PMU will put in place the following monitoring and reporting system which includes both internal and external monitoring and reporting.
136. **Internal monitoring and reporting:** At subproject/provincial level, PIU/DPWT staff, together with district and village authorities will be responsible for monitoring the implementation of mitigation measures as approved in the ECoP, ESMP, ARAP/RAP, and or EPDP. Monitoring information together with other information collected from various stakeholders together with observations of project activities will be reported monthly to the DPWT using standard reporting forms. Monthly monitoring reports from PIU/DPWT will include:
- a. List of consultations held, including locations and dates, name of participants and occupations.
 - b. Main points arising from consultations including any agreements reached.
 - c. A record of grievance applications and grievance redress dealt with.
 - d. Monitoring data on environmental and social measures detailed in ESMPs.
 - e. Number of construction supervision reports that include assessment of contractor's compliance with safeguards in accordance with ECoP.
 - f. Number of trainings of community groups in environmental and social issues (if any).
137. PMU/DWS will prepare a consolidated six month monitoring reports from the 4 provinces for DWS and PTI which in addition to the above data will include:
- a. Number of national, regional, and/or provincial staff and counterparts trained on ESMF compliance.
 - b. Number of ESMPs prepared and number of ESMPs cleared by WB.
 - c. Number of technical recommendations provided during supervision and monitoring that have been implemented.
138. These reports will be filed to permit easy retrieval and indicators will be incorporated into the Project M&E system.

139. **External monitoring:** An external monitoring of both environmental and social measures will be conducted annually by DEDP/PTI in close coordination with PONRE/DONRE. Efforts will be made to invite representatives from local communities and mass organizations to participate in the process. The external monitoring will assess whether (i) the ESMF process, including RPF and EGDF (if relevant), is being correctly adhered to (ii) relevant mitigation measures have been identified and implemented effectively and (iii) the extent to which all stakeholder groups are involved in subproject implementation. The technical audit will also indicate whether any amendments are required in the ESMF approach to improve its effectiveness and ensure that the project investment ESMPs are developed/cleared and effectively implemented. The external monitoring report will be submitted to DWS and WB for information and comments.

140. Table 10-1 presents the ESMF monitoring that will cover the following aspects of the Project and subprojects:

Table 10-1: ESMF monitoring and reporting requirements

Objectives	Actions	Responsibility	Schedule
Ensure compliance with ESMF and ESMPs	Monitor the ESMPs preparation and implementation of subproject	PIU/DPWT	quarterly
	Review and update ESMP, and submit revisions to the World Bank for approval	PMU/DWS	Annually
Communication structures between Project and local agencies in place	Develop procedures and schedule for coordination and reporting	PIU/DPWT	Prior to implementation
Reporting	Prepare monthly report	PIU/DPWT	For the subprojects
	Prepare six-month report	PMU/DWS	For the 4 Project provinces
	Prepare annual report	PMU/DWS	For the 4 Project provinces
	Prepare ad-hoc reports	PMU/DWS	As required

11 CAPACITY BUILDING

11.1 JUSTIFICATION OF INSTITUTIONAL CAPACITY ASSESSMENT

141. Effective implementation of this Environment and Social Management Framework (ESMF) will require technical capacity in the human resource base of implementing institutions as well as logistical facilitation. Implementers need to understand inherent social and environmental issues and values and be able to clearly identify indicators of these. Even with existence of policies and laws such as the Environmental Protection Law (EPL, 2013) evidence on the ground, still indicates that there is significant shortcoming in the abilities of local and district level stakeholders to correctly monitor, mitigate and manage environmental performance of development projects.

142. Sufficient understanding of the mechanisms for implementing the ESMF will need to be provided to the various stakeholders implementing subprojects of WSSP. This will be important to support the teams appreciate their role in providing supervision, monitoring and evaluation including environmental reporting on the projects activities.
143. There are few officials at DWS who have professional training and affiliation with safeguard operation of ADB supported water supply and sanitation projects. In order to ensure proper ESMF implementation and supervision, additional consultant support required at both provincial and central levels during the project implementation phase..

11.2 HUMAN RESOURCE CAPACITY REQUIREMENTS

144. Human capacity challenges for stakeholders involved in the implementation of the ESMF are of two types:
- Low technical capacity of current staff, and
 - Inadequate (low) numbers of staff.
145. While adequacy in staffing requirements was found to be varied between the various stakeholders, there is very limited presence of directly trained and dedicated staff for environmental and social management purposes within institutions, in particular at the local levels. Staffs from other departments are usually assigned duties related to environmental and social management. As a result, sufficient knowledge on environmental and social management principles, project screening, impact mitigation, monitoring and follow up action was limited within most institutions. In many institutions, staffs have been retained for core activities leaving little if any human resources to directly oversee environmental and social management activities. As a result, this portfolio which in many cases is given little attention is handled by staff members not adequately conversant with it.

11.3 CAPACITY BUILDING AND TRAINING

146. Awareness creation, training and sensitization will be required for personnel of the following institutions:
- PMU/DWS, PTI
 - PIU/DPWT, NPSE, OPWT
 - Nam Saat/DHHP
 - Nam Saat/District Health Office
 - VDC members e.g. village leaders, women's Unions, youth unions, leaders of ethnic groups,
 - Contractors managers and personnel
147. Training will concern:
- Environmental and social impact screening process and using ESMF screening forms/checklist
 - Screening process
 - Assignment of environmental categories
 - Rationale for using Environmental and Social Checklists
 - The importance of public consultations and participation of households in the screening and planning process
 - How to monitor ESMF implementation
 - Safeguard policies, procedures, and sectoral guidelines
 - Review and discussion of national environmental policies, procedures, and legislation
 - Review and discussion of the Bank's safeguard policies

- Selected topics on environmental protection and social safeguards
 - Air, water, and soil pollution
 - Health and safety
 - Waste management and disposal
 - Natural resource utilization
 - Selection of viable, small and medium-scale water supply systems
 - Resettlement and compensation
 - Ethnic development plan
 - Negotiation (Conflict Solving)
 - Public participation, consultation and information dissemination

148. Selection of training courses should identify potential guidelines or good practice documents on environmental management for the key sectors to be financed. World Bank environmental safeguard specialists will be requested to provide periodic supervision and training relative to the identification and management of environmental risk in project evaluation and implementation.

149. During the implementation, further capacity development need assessment will be carried out and the capacity building program will be redesigned according to the need and targeted improvement in project implementation.

12 CONTINGENCY EMERGENCY RESPONSE

150. Contingency Emergency Response is Component 4 of the Project that will allow for a reallocation of credit proceeds from other components to provide emergency recovery and reconstruction support following an eligible crisis or emergency at the national or sub-national level. In light of the Project design, the CERC would be expected to be operationalized through a reallocation of funds from the project to provide emergency recovery and reconstruction support. To ensure that there is capacity an Emergency Response Manual (ERM) will be developed by the Department of Water Supply for specific eligible disasters, detailing fiduciary, safeguards, monitoring and reporting, and any other necessary implementation arrangements. The ECoP needs to be applied during repair and rehabilitation of the damaged infrastructure

13 CONSULTATION AND INFORMATION DISCLOSURE

13.1 REQUIREMENT OF CONSULTATIONS

151. The WB requires consultations held with the project affected peoples, local community and other relevant stakeholders. This consultation should provide information on the following aspects: a) purposes of the project; b) results of the environmental and social assessment; and c) presentation of the complementary studies required in the case that they apply. The ESMF has been prepared through a detailed consultative process both at the provincial and central levels.

152. Consultations were undertaken for the ESMF 29 October 2018 in Oudomxay Province. Participants were representatives from the district and provincial concerned department and

offices and mass organizations. See list of participants in Annex 10. These consultations provided valuable information to validate the project objectives, its components, environmental and social assessment as well as the ESMF (see Annex10. for minutes of meeting).

13.2 REQUIREMENT OF CONSULTATIONS AT PROVINCIAL AND VILLAGE LEVELS

153. The WB requires consultations held with the local community. This consultation should provide information on the following aspects: a) purposes of the project; b) results of the environmental and social assessment; and c) project implementation plan. The results of consultation were summarized in respective documents, including RPF and ESMF.

154. Consultation through a community outreach during implementation is a good practice that can be adopted to ensure that the potential negative impacts and concerns are properly addressed during construction and operation of a project. Extensive consultations with affected population and ethnic minority are required when the activities involve land acquisition, temporary environmental impact that affected the income generation activities/livelihoods/agricultural production of local people, including people from ethnic groups.

15.3 Public Consultation Results

15.3.1 Environmental Consultation Process and Results

155. According to the OP4.01, the environmental assessment process should be available to the public. As such, DWS consulted with all relevant stakeholders in Oudomxay province on project safeguard documents (draft ESMF) during the process of preparation of the safeguards documents. The final RSMF with all annexes will be posted (i.e. RPF, EGDF, ECoP.) will be circulated and posted on the MPWT website in both English and Lao language.

156. The consultations aimed at: (i) providing background information to various stakeholders on the WSSP, (ii) receiving feedback from concerned stakeholders, both targeted communities/enterprises and concerned government agencies, as well as civil society and NGOs to take into an account gender aspects on issues and proposed mitigation measures and institutional arrangements pertaining to the ESMF of WSSP; and (iii) discussing ways to maximize WSSP environmental and social performance.

157. At the consultation meeting, the consultant presented (i) project overview and components (ii) project provinces and proposed activities (iii) National legal framework and World Bank safeguard policies (v) existing and potential environmental issues and ESMF's contents.

158. Summary of comments received at the meeting are summarized as below. Overall, representative from Ministries and provincial departments made positive comments about the content of the presentation including the ESMF and RPF that presented by consultants. Comments, questions and observations made during the plenary sessions are summarized below (details are presented in Annex 11):

- The participants agreed that impacts from the project will be overall positive. Potential negative impacts are envisaged to be minor: limited, localized, manageable and reversible.

- The participants agreed with the environment safeguard tools including ESMF and ECoP for mitigating potential environmental issues during subproject implementation.
- Water sources both both gravity feed or ground water must be clean and free of chemical contamination.
- Compensation costs must be not included in the construction costs.
- Civil works during both construction and operational phases must be carried out during official working hours of the government.
- With regard to those affected land or assets that are going be affected equal or more than 10% of the total area or structure are identified as severely affected households by the project. This issue must be reconsidered that compensation should be calculated according to the affected portion. However, if the AH could not use the remaining area full replacement cost for compensation must be e based on the investigation and approval of the resettlement committee.
- Compensation should be paid in cash. If government fund would be used for this purpose supporting documents and detailed budget needs to be prepared for requesting budget allocation according to the financial regulations and routines of the Ministry of Finance.
- Grievance redress mechanism and procedures must be revised for instance time for grievance resolution must reflect the allocated time by the juridical sector. The members of the GRM must include relevant provincial and district departments and offices for instance local courts.
- Coordination and monitoring of environmental and social impacts must include PoNRE.
- World Bank should include budget for compensation in addition to the budget for construction of the systems.
- Submission of project plan for budget allocation from the government must be in line with the timeline government annual budget allocation.

15.4 Disclosure

159. In line with the Bank's Public Consultation and Disclosure Policy, for the WSSP, the draft ESMF and its annexes have been revised to incorporate feedback from consultation held in Oudomxay on October 29 2018 and is disclosed in English on MPWT website. The final version will be translated into Lao language distributed to relevant department and offices in 4 provinces and 12 districts and uploaded on the website of MPWT.

14 COSTS AND BUDGET FOR ESMF IMPLEMENTATION

As the technical details of sub-projects have not yet been finalized for the project investments, activities to be potentially funded include preparation the IEE/ECoP/ESMP and implementation of the ESMP at the subproject level with training and technical assistance as relevant.