

Environmental and Social Management Framework (ESMF)

Nepal Livestock Sector Innovation Project (NLSIP)

Ministry of Livestock Development
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Executive Summary

Nepal is ranked one of the economically poorest countries in the world with per capita income of US\$ 762. It has wide agriculture potential which can address livelihood of rural communities and offer sustainable development pathways to improve rural lives. One of the ways to improve rural livelihood is by appropriate, adequate and effective intervention and engagement in livestock activities to achieve intended outcomes in local and national level as highlighted in the Nepal Livestock Sector Innovation Project (NLSIP). The World Bank supported NLSIP to be implemented through Ministry of Livestock Development (MOLD) is at the inception level for intervention. The objectives of NLSIP is to increase productivity, enhance value addition, and improve resilience of smallholder farms and agro-processing enterprises in selected livestock value chains in Nepal in three ecological and altitudinal zones. The characteristically different ecological zones offers varied livestock opportunities with specific socio-ecological concerns and need for conservation on the intended goals of intervention.

In order to undertake the project Environmental and Social Management Framework (ESMF) prepared at the Ministry level. The ESMF assesses adverse impacts of the project to individuals and communities. The ESMF serves as a guideline and sets out principals, rules and procedures to screen, assess, manage and monitor the mitigation measures of environmental and social impacts. The environmental and social impacts refer to (i) any change, potential or actual, to the physical, natural or cultural environment, and (ii) impact on people (including social aspects of labor, health, safety, equity and security) resulting from the project implementation.

The smallholder dairy and goat farmers and women are the primary beneficiaries where small and medium level agro-entrepreneurs can benefit and play a major role in facilitation. The human resources at various levels can benefit from the comprehensive capacity building and skill development components. MoLD selected intervention sites in districts are based on value chain of pashmina, goat and dairy. The expected site specific environmental, social and cultural impacts are diverse based on currently identified activities. Since project activities evolve over time, exact nature and scale of their impacts is unknown.

This ESMF forms part of the comprehensive environmental and social management approach that is adopted for addressing potential environmental and social impacts from NLSIP. The ESMF defines (a) the approach for identifying the environmental and social issues associated with the NLSIP activities, (b) the requirements for conducting environmental and social screening and environment and social assessment studies, and (c)

measures to prevent, mitigate and manage adverse impacts and enhance positive ones. It includes exclusion list and a simplified screening checklist used to determine types of environmental and social assessment required for proposed initiatives, resettlement policy framework describing mechanisms for addressing potential disruptions of services, employment and income (e.g., temporary or permanent displacement of affected peoples/informal vendors, loss of business or commercial sites etc), and temporary and permanent restrictions on access to facilities, including land use while the construction work is ongoing in the project area. Furthermore, it includes vulnerable community development plan, a gender development framework, and capacity building measures and a monitoring mechanism. The ESMF preparation is grounded on methodology on objectives of project with room for availability of revisions and modification based on beneficial and adverse impacts rendered by NLSIP.

Acronyms

1.0 Project Overview

1.1 Country Context

Nepal is one of the poorest countries in the world with per capita income of US\$ 762 in 2015. Eighty percent of Nepal's population resides in rural areas, and 66 percent are engaged in agriculture. Most industrial activity involves the processing of agricultural products, including dairy, meat, pulses, jute, sugarcane, tobacco, and grain. Agricultural development is therefore critical to the long term economic prospects of Nepal's rural poor.

Though the poverty rate in Nepal halved from 42 percent in 1995/96 to 21 percent in 2015, this reduction took place overwhelmingly within urban and peri-urban areas clearly suggesting that gains in poverty has been biased against the rural poor. Thirty-seven percent people in the rural hill areas were below the poverty line, compared to the national average of 25.2 percent¹.

On April 25, 2015 a 7.8 magnitude earthquake struck central Nepal, resulting in human and economic costs. Rural areas were especially hard hit, with crop losses and loss of post-harvest storage infrastructure. A post disaster needs assessment completed later in 2015 found that livestock losses amounted to US\$26 million, and \$85 million in livestock-related infrastructure losses. Combined with weakened agricultural performance earlier in the fiscal year, the earthquake contributed to a slowdown in economic growth to 3.4 percent in FY 2015 – two percentage points lower than the previous year. In FY16 growth is projected to slow further to 1.7 percent, revised downwards from an earlier projection of 3.7 percent owing to severe disruptions to external trade that are on-going since the promulgation of the new Constitution on September 20, 2015.

In September of 2015, a second shock to the economy came in the form of a near complete disruption of external trade following the adoption of the new Constitution. The blockade of borders by discontent political parties has resulted in serious shortage of essential goods including fuel which has affected transportation of goods and services. The economy is projected to continue contracting if the current blockade continues into the third quarter of the fiscal year – mid March 2016. With suboptimal monsoon rain and winter drought, government estimates agriculture share of GDP will contract below 2015 level (3.4 percentage growth rate in 2015) with disruptions in the supply of agriculture inputs (fertilizer, fuel for irrigation, animal feed and vaccinations). While the vagaries of nature have had an impact on agriculture performance, the new Periodic Plan sustainable development goal aims to improve the welfare of the rural population through sustainable livelihood interventions, livestock income being one channel to deliver the new planned outcome.

The World Bank is supporting the Government of Nepal to implement a project entitled 'Nepal Livestock Sector Innovation Project (NLSIP)'. The project will be implemented through the newly established Ministry of Livestock Development (MOLD).

The project will be implemented in select locations in Nepal (exact locations yet to be decided). The main objective of the project is **“to increase productivity, enhance value-**

¹ Central Bureau of Statistics, Nepal Living Standard Survey, Volume II, Kathmandu.

addition and improve resilience of smallholder farms and agro-processing enterprise in selected livestock value-chains in Nepal”. The project will have the following four major components: (i) strengthening critical regulatory and institutional capacity, (ii) promoting sector innovation and modernizing services delivery, (iii) promoting smallholder inclusive value chains for selected livestock, and (iv) project management and knowledge generation.

As part of project preparation, the Ministry has developed this Environment and Social Management Framework (ESMF) for the project. The ESMF provides the governance and policy framework to avoid, minimize and mitigate against any environmental and social impacts of activities implemented by the project and enhance positive impacts. Environmental and social impacts refer to (i) any change, potential or actual, to the physical, natural or cultural environment, and (ii) impact on people (including social aspects of labor, health, safety, equity and security) resulting from the project implementation. The emphasis of the ESMF is on vulnerable groups (poor, displaced, landless, elderly, women, children, indigenous people and ethnic minorities, and *Dalits*).

1.2 Project Development Objectives

- The objectives of Nepal Livestock Sector Innovation Project is to increase productivity, enhance value addition, and improve resilience of smallholder farms and agro-processing enterprises in selected livestock value chains in Nepal.
- The primary project beneficiaries will be smallholder dairy and goat farmers with a potential for market-oriented production and growth, in districts selected according to criteria that will be developed during project preparation. Given their important role in animal husbandry, it is expected that women will be well represented among primary beneficiaries. Other direct beneficiaries of the project include private sector, in particular the small and medium agro-entrepreneurs, who will benefit from stronger backward and forward linkages in the selected value chains. Finally, staff from the newly established Ministry of Livestock Development, including at the decentralized levels, will benefit from the comprehensive capacity and skills development program implemented by the project.

1.3 Project Institutional and Implementation Arrangement

The implementing agency for the NLSIP will be MOLD. A Project Implementation Unit (PIU) will be established at MOLD. A project director has already been appointed and the PMT will be staffed with necessary technical and procurement officials. Detailed organization structure will be finalized during the project preparation. It is envisaged that three unit offices: Pokhara, Biratnagar, and Nepalgunj will be established.

1.4 Type and Nature of Components/Activities Supported Under the NLSIP

Component A – Strengthening Critical Regulatory and Institutional Capacity: this component focuses on the ability of the new Ministry of Livestock Development (MoLD) and its agencies at the regional, district and village levels, to establish and enforce a policy and regulatory framework that strengthens the livestock sector. It will contribute to the PDO by helping establish an enabling environment that improves the delivery of demand-driven services to livestock producers and provides adequate incentives for private sector investments in livestock. **An Institutional Capacity Enhancement Needs Assessment (CENA)** of MoLD and its key agencies will be carried out in the first year of project

implementation. The CENA outcomes will be subject to a prioritization process to select further activities for Component 1, while other outputs should be funded through government sources or other donors. A lead international livestock agency should be recruited (e.g. ILRI, OIE, FAO) to support MOLD with the implementation of this component.

Sub Component A.1 – Sector Policies and Strategies: this sub component will support MoLD and its agencies in developing capacity for strategic sector planning and for evidence-based sector strategies that promote private sector led growth within the sector. The outputs of this component will be fully aligned with the recommendations of the ADS. Activities under this sub component will include updating the **Livestock Master Plan** that compiles into one official document the GoN's medium term plan of actions to implement the vision spelled out for the livestock sector in the ADS. The sub component will also support: (i) the comprehensive revision of the **Livestock Breeding Policy**, in order to secure an enabling policy framework for the national breeding programs to be implemented under Component 2; and (ii) the operationalization in project areas of the livestock components in the **National Adaptation Programme of Action (NAPA) to Climate Change**.

Sub Component A.2 – Animal Health: the sub component will support the development and roll out of a national action plan for the **eradication of FMD and PPR**. This action plan will include investments aimed at significantly increasing the supply of certified vaccines manufactured in-country. Moreover, the veterinary quality control and animal nutrition laboratories will be strengthened to carry out adequate quality control tests on veterinary drugs, animal feed and feed ingredients. Accordingly, this sub component will finance investments in skills development, lab equipment, lab accreditation and animal/product certification. Effective government control of veterinary medicines is important for public health and there is an urgent need for developing a new **Veterinary Drug Act** through a process consistent with the standards set by the Codex Alimentarius. Finally, this sub component will support ongoing efforts to institutionalize the One Health approach with the government.

Sub Component A.3 – Food Safety and Food Quality: this sub component seeks to strengthen MoLD and its agencies in the area of **food safety and food quality** in order to improve the sector's ability to effectively meet the growing demand of the urban population for healthy meat products and for increasing the livestock sector's **export competitiveness**. To that effect, the sub component will strengthen the institutions' capacity to review and enforce the relevant legislations, as well as to formulate and apply internationally acceptable national standards for quality control of animals, animal production, and inputs and products of animal origin. Activities will include a comprehensive technical review of the main Acts that are relevant in the context of the SPS-related issues, as well as the institutional strengthening of the relevant agencies to effectively **enforce the various Acts** for product quality control, hygiene and environmental management (e.g. Animal Health and Livestock Services Act, the Animal Feed Act, the Slaughterhouse and Meat Inspection Act).

Component B – Promoting Sector Innovation and Modernizing Services Delivery: this component aims to improve the quality and increase the impact of livestock services delivered to smallholder farmers. This will directly contribute to the PDO by enhancing animal

productivity and helping farmers generate a marketable surplus. Most activities under this component will be implemented at farm level and will involve government agencies whose capacity is being strengthened under Component 1. In line with principles already applied in the crop sector, this component will promote a decentralized approach to demand-driven livestock services whose delivery relies on multiple stakeholders (government agencies, academia, private actors – and farmers themselves). It will also specifically contribute to **GHG** emission reduction through promoting activities geared towards improved herd management and animal nutrition.

The participation of local level stakeholders (e.g., producer groups, communities, community-based Animal Health Workers (AHW), junior technicians and technician assistants (JT/JTA) at the sub district level (Livestock Service Centers) in the activities of this component will be subject to receiving **training on nutrition** sensitive livestock farming and animal protein-rich household level nutrition, designed and delivered to the various cohorts by an NGO competitively recruited under this component.

Sub Component B.1 – Livestock Extension and Advisory Services: this sub component will support the modernization of livestock extension services by promoting and scaling up the use of **ICT** in Extension and Advisory Services. Each Livestock Service Center in the project area will be equipped with a small IT station with internet connectivity and a computer terminal connected to a central MoLD database that serves as a repository for the knowledge generated on livestock (including from relevant NARC agencies and research stations, as well as global research providers). In addition, the component will introduce the use by extension agents of electronic tablets to improve the efficiency of livestock advisory services through on-farm, real-time, two-way knowledge and information sharing between the farming community and the public extension (and research) service. The component will also support the development of smartphone apps geared towards smallholder livestock producers.

A comprehensive MoLD handbook for livestock extension practitioners will be developed under this component; it will include updated Good Livestock Practices and emphasize **climate-smart technologies and practices** to improve, among others, animal husbandry, rangeland and pastures management, and product handling and processing. The handbook will be produced in a digital format and hosted on a GoN server accessible across the decentralized MoLD agencies, including on the sub district Livestock Service Centers computer terminals and the extension agents' tablets.

In line with good practices from previous livestock projects, the component will strengthen the capacity of **multiple types of extension agents** to deliver better advisory services more efficiently, and will include: (i) support for public extension staff like livestock officers in the District Livestock Services Offices and junior technicians and technician assistants (JT/JTA) at the sub district Livestock Service Centers), (ii) increase in the number of adequately trained community-based Animal Health Workers (AHW), (iii) support to the cooperatives in the delivery of advisory services to their members; and (iii) take advantage of the considerable rural penetration and outreach by agro-vet dealers. To that effect, a comprehensive **skills development/ToT program**, replicable by MoLD to other districts, with action-learning

modules tailored to each extension agent type, will be designed and implemented in the project area by a specialized service provider recruited under this component. In addition, the project will provide a tailor-made **extension toolkit** (goods and training) to public extension staff (and on a refundable or cost-sharing basis for private extension agents).

Given the expected financial returns on livestock assets (e.g. improved breeds), including for smallholders to be linked with market opportunities under Component 3, a fee-for-service approach will be adopted (at least for standard animal health and herd improvement services). Concomitantly, to maintain a high quality of the extension and advisory services provided in the project area, an ICT-supported performance-based system will be introduced for all extension agents (public and private) to capture in real-time beneficiaries' feedback on the enhanced livestock extension services.

Sub Component B.2 – Livestock Research: this sub component will develop a small **Competitive Research Grant Program**. In-country public and private research providers, in partnership with international research bodies, will be eligible for this program. The main features of the program will: (i) emphasize on-farm research with the participation of extension agents and smallholders and/or communities; (ii) include research topics based on a priority list to be developed by MoLD and focused on the sub sectors selected for the value chains in Component 3 (including post-production); (iii) cover cross cutting themes, e.g. climate smart livestock production, livestock and gender/nutrition/jobs, livestock and nutrition; and (iv) support value chain-related research partnerships between public and private, national and international research providers. Research proposals will undergo a rigorous review process led by an independent panel of national and international researchers. A detailed implementation manual for this research grant program will be developed during project preparation, and will take into account lessons learned and operational principles from similar programs successfully implemented in Nepal. The program should be started early and support research activities programmed such that their outcomes can be scaled up during the final years of the project.

Sub Component B.3 – Livestock Breeding and Veterinary Services: Under this sub component, the project will support the implementation of **breeding, restocking and herd improvement programs** in the project area for large cattle and small ruminants. This will include support for veterinary services and the upgrading of existing breeding stations, as well as refundable financial support for the production of improved breeds by cooperatives and private sector. Activities will also include scaling up artificial insemination, with corresponding technical skills enhancement campaigns and equipment for community-based animal health workers (“para vets”). This sub component will also train smallholders and facilitate their access to improved-bred animals managed within eligible farmer groups as a revolving asset. It will also support the design and roll-out of a national **ICT-based disease information and monitoring system** for an effective control of zoonosis and economically important diseases of animals. This control mechanism will be embedded in the national action plan for the eradication of FMD and PPR to be developed under Component A.2.

Sub Component B.4 – Adopting Climate Smart Livestock Practices: This sub component will address key shortcomings in range, forage and waste management, as well as in animal

nutrition. For project areas in the hills and mountain regions, the sub component will promote a community-based approach to a productive, comprehensive management of rangelands and pastures, taking into account the evolving carrying capacity of livestock in fragile environments that are only slowly adapting to the changing climate. As the case for the production of improved animal breeds, the sub component will promote local production of improved seeds for forage and fodder by providing (refundable or on cost-sharing basis) financial support to private sector, cooperatives or communities engaged in this commercial activity. The project will also promote the adoption of climate-smart livestock practices and climate-smart livestock processing technologies in the selected value chains. In addition, the project will support the development and implementation of the livestock-relevant sections of the **Local Adaption Program of Action (LAPA)** under NAPA. At producer level, for example, to improve waste management, the project will explore the feasibility of setting up small biogas plants (including at domestic level) in collaboration with the Bank's Supported Extended Biogas Project.

Component C – Promoting Smallholder-inclusive Value Chains for Selected Livestock

Commodities: this component seeks to develop a more commercial-oriented approach for selected livestock sub sectors and to contribute to import substitution (for dairy products and goat meat) and export promotion (for *Chyangra* cashmere) by improving the **performance and competitiveness** of select value chains. The component will directly contribute to the PDO by supporting the integration of smallholder livestock farmers in those value chains. The component will focus on improving smallholders' access to markets and on strengthening the backward and forward linkages among value chain actors. Activities will target the actors involved in production, logistics, processing or marketing in the value chains selected (i.e. producer groups, cooperatives, local service providers, traders, and other private sector). It is envisaged that experiences of Productive Alliances generated in Bank-supported programs in Latin-America might be brought to bear in detailing design and operational arrangements of this component.

Sub Component C.1 – Business Skills Development: On the basis of value chain analyses carried out in recent years, this sub component will support the roll out of a comprehensive knowledge and learning program for livestock producer groups and cooperatives as well as livestock entrepreneurs. This skills development program will aim at improving their **entrepreneurial skills** (e.g. livestock farming as a business) to facilitate their integration in emerging commodity value chains. To that effect, the project will collaborate with IFC and IFC-accredited training partners in Nepal to customize and deliver relevant training modules from **IFC's Business Edge** learning suite to the different project beneficiary groups (in particular on Operations Management, Marketing Management, and Financial Literacy Management and Accounting).

Sub Component C.2 – Improving the Competitiveness of Selected Livestock Value Chains: This component will help develop model enterprises (including market-oriented farms, handling and processing facilities) and support them in adopting advanced quality management systems. This will improve the overall **food safety and hygiene conditions** across meat and milk processing enterprises through demonstration effects. Similarly, the development of model **live animal markets** in different locations across the project area will

serve as learning centers for different stakeholders to work together in improving the basic infrastructures and marketing management practices and replicate the successful lessons. The component will also support the adoption of **climate smart-production and processing technologies** in selected value chains, as well as the piloting of other smallholder-based, income-generating livestock activities with clear potential for import substitution or export promotion, subject to analytical evidence generated under Component 4.

Sub Component C.3 – Financing Livestock Value Chains: To facilitate **access to finance** for participants in the select value chains, this sub component will support a three-pronged approach:

- a. To support actors upstream in the select livestock value chains (e.g. farmer groups, cooperatives, local services providers and other micro and small rural entrepreneurs with demonstrated/potential linkages to smallholders), a **Value Chain Promotion Fund (VCPF)** will be established in close consultation with IFC. This fund will be managed by a fund manager recruited competitively by the project. It is expected that the VCPF will operate on a revolving fund basis, with refundable financial support to selected, growth-oriented, income-generating sub projects. The VCPF will be designed taking into account good practices applied in development projects in Nepal (e.g. with Heifer International) and elsewhere. Accordingly, VCPF modalities could range from producers transferring within their group or community the first female off-springs from the improved-bred mothers they acquired with VCPF support; to local entrepreneurs and service providers refunding capital investment received from VCPF for income-generating, value-adding activities (e.g. feed pellet machine, milk cooling equipment, etc.). Alternative approaches (e.g. cost-sharing; full grants for climate-smart technologies; credit scheme) will be reviewed during project preparation and assessed against a refundable/revolving fund approach. A Manual of Administrative and Operational Procedures will be developed prior to disbursement of the VCPF.
- b. For larger commercial operations in the more capital intensive downstream segments of the select value chains (e.g. logistics, processing, export), the project will work with IFC and link eligible entrepreneurs with **IFC’s SME Ventures** program for Nepal (Business Oxygen, BO2). BO2 is a locally managed fund that provides both risk capital and technical assistance to eligible SMEs.
- c. For infrastructure investments with a clear business case, the project will directly implement the corresponding activities. Such investments should directly support a better integration of smallholders in select value chains and facilitate their access to market opportunities (e.g. the “last mile” of a rural road or rural electrification, including for infrastructure investments complementary to sub projects funded by VCPF and/or BO2).

Component D – Project Management and Knowledge Generation: This component will host a Project Management Team (PMT) mapped to the MoLD Secretary’s office and responsible with ensuring that project activities are implemented in line with the provisions in the official project documents. The PMT will also be in charge of **financial management** and project **procurement**, as well as of ensuring **safeguards** compliance for all project activities implemented. The component will also support all activities related to project **communication**, public awareness and outreach, including the development of a

comprehensive project web site that would also provide a platform to capture stakeholders complaints (as part of a project **grievance redress mechanism**). The component will also finance the services of specialized consultant firms to develop and implement a comprehensive **project impact evaluation**, as well as the project's Monitoring, Evaluation and Reporting system.

This component will also finance a range of **analytical studies** aimed at addressing key knowledge gaps prevailing in the livestock sector that can help inform other MoLD projects, programs, and investments. Possible studies could e.g. include a comprehensive review of the existing **GoNLivestock Insurance Scheme** so that an improved scheme could be introduced under Component 2 and scaled up for selected sub sectors. Other studies could include a thorough analysis of **other livestock value chains** with opportunities for import substitution, export promotion, and smallholder inclusion (yak cheese, buff meat, hides and skins, or Vyanglung sheep farming for wool). Similarly, other early studies could provide the **analytical underpinnings for sector policies** and strategies to be designed under Component 1. The prioritization of knowledge gaps and launch of some of these studies can be financed also with a **Project Preparation Advance** to be requested by the competent authorities.

1.5 Need for Environment and Social Management Framework

The general thrust and broad project interventions are well understood as outlined above. Based on the identified activity, the expected site specific environmental, social and cultural impacts are of limited nature. Since specific project activities are yet to be defined the exact nature and scale of their impacts will be known only later. The activities under NLSIP components may trigger ESMF screening requirements and subsequent documents. Such screening and other aspects are elaborated in ESMF as ready to use by the stakeholders.

In the above context, a safeguard framework document is needed to 'guide' the planning, design and construction elements of the project activities. Such a guidance document or a framework would help in integrating and harmonizing the environment and social management principles at the various stages of project preparation and execution. In this context, this Environment and Social Management Framework (ESMF) has been prepared for the NLSIP.

This ESMF forms part of the comprehensive environmental and social management approach that has been adopted for addressing the potential environmental and social impacts from NLSIP, even when these are considered minor in nature.

Since specific NLSIP activities will only be identified in the course of project implementation, a mechanism for screening and assessing possible adverse short-term environmental and social impacts during the project preparation is required. This ESMF defines (a) the approach for identifying the environmental and social issues associated with the NLSIP activities, (b) the requirements for conducting environmental and social screening and environment and social assessment studies, and (c) measures to prevent, mitigate and manage adverse impacts and enhance positive ones. This ESMF includes an exclusion list and a simplified screening checklist, which will be used to determine what types of environmental and social

assessment are required for the proposed initiatives. Environmental Management Plans/Social Action Plans (EMP/SAP) for specific initiatives will be prepared if required. This ESMF includes a resettlement policy framework describing mechanisms for addressing the possible temporary disruption of services and income (e.g., temporary displacement of informal vendors), and temporary restrictions on access to facilities while the construction work is ongoing in the project area. The ESMF includes a vulnerable community development plan, a gender development framework, and capacity building measures and a monitoring mechanism.

1.6 Process Adopted for Preparing the ESMF

The process adopted for the preparation of this ESMF includes: review of project specific documents, relevant environmental and social policies, acts, regulations and guidelines of GON, safeguard policies of World Bank, and interactions and consultations with all concerned stakeholders. Therefore, this ESMF is primarily based on the reviews of available relevant literatures and consultations with the sample project level stakeholders.

1.7 Purpose and Objectives of the ESMF

The ESMF seeks to:

1. Establish clear procedures and methodologies for screening, reviewing and managing environmental and social safeguards for the components to be financed under the NLSIP.
2. Consolidate and facilitate understanding of all essential policies and regulations of the GoN as well as the World Bank's environmental and social safeguards regime that are applicable to the Project
3. Provide practical guidance on the implementation of the environmental and social management measures.
4. Specify norms and procedures for the conservation and restoration of historic and archeological objects for dealing with chance finds during works.
5. Specify institutional arrangements, including appropriate roles and responsibilities for managing, reporting and monitoring environmental and social concerns of the NLSIP component investments.
6. Provide a framework for consultation and information disclosure.
7. Determine the other institutional requirements, including those related to training and capacity building, needed to successfully implement the provisions of the ESMF.

The application and implementation of the ESMF therefore, will:

1. Support the integration of environmental aspects into the decision making process at all stages related to planning, design, execution, operation and maintenance of NLSIP investments, by identifying, avoiding and/or minimizing adverse environmental impacts early-on in the project cycle.
2. Minimize environmental degradation to the extent possible resulting from either directly NLSIP component activities or through indirect, induced and cumulative effects of project activities.
3. Enhance the positive/sustainable environmental and social outcomes through improved/appropriate planning, design and implementation of sub-activities of the project components.

4. Consider the level of environmental and social risk of each type of NLSIP component activates in allocating time and resources to be dedicated for stakeholder consultation.
5. Build the capacity of the MOLD to take-up and coordinate responsibilities related to the application and implementation of the ESMF, including the preparation of the NLSIP Component specific Environmental Assessment and Management Plans (if required).
6. Provide guidelines and procedures for further consultations during project implementation, in particular in defining and designing NLSIP component specific works.
7. Provide a systematic guidance to address potential risks and to enhance quality, targeting, and benefits to the surrounding communities.
8. Ensure that those stakeholders, irrespective of whether they benefit from or are adversely affected by the project interventions, are well informed and are able participate in the decision-making process.
9. Support compliance with applicable legal/regulatory requirements of GoN as well as with the requirements set forth in the relevant Bank policies.

1.8 Revision/Modification of the ESMF

The ESMF will be an 'up-to-date' or 'live document' enabling revision, when and where necessary. Unexpected situations and/or changes in the project or components design would therefore be assessed and appropriate management measures will be incorporated by updating this ESMF. Such revisions will also cover and update any change/modification introduced in the legal/regulatory regime of the country. Also, based on the experience of application and implementation of this framework, the provisions and procedures would be updated, as appropriate, in agreement with the World Bank and the MOLD.

1.9 Limitations of the ESMF

This ESMF has been developed in line with World Bank's Operational Policies (OPs) and is based on GoN laws and regulations, as applicable at the time of preparation of this document. Any proposed modifications in the laws, regulations or guidelines that were notified as 'draft' at the time of preparation of this document have not been considered. The ESMF is prepared based on the available data and information and any gaps or information obtained in later phases shall be incorporated at revision stage.

1.10 The scopes of consultant services in the preparation of the ESMF will include the following tasks, but not necessarily limited to:

- i) **Stakeholder analysis and due diligence:** Provide an overview of the key stakeholders involved in the project and describe their roles, responsibilities and relationship with the project;
- ii) **Legal and policy environment:** Review the existing legal and policy environment in relation to the project, which may be applicable to project investments and the World Bank safeguards policies that is applicable to the project and identify the gaps between the national system and bank's safeguard policies.
- iii) **Collect baseline data/information on the bio-physical environment and resources (secondary/primary).**
- iv) **Site Visits:** Conduct site visits and interact with DAO/environmental specialists of similar projects (e.g AFSP and PACT) and identify all environmental and social concerns and

gaps related with typology of sub-projects; and document lessons learned, and internalize the findings in the preparation of the ESMF.

- v) ***Institutional capacity***: Conduct analysis of staff capacity of the newly formed MOL to carry out environmental and social safeguards responsibilities particularly proper implementation of environmental and social management and monitoring plan; and identify key skill deficits and recommend how these might be filled in the short term, medium and long term, including possibilities to hiring of additional staff and overall estimated costing of such a plan.
- vi) ***Capacity Building Activities***: Given that one of the objectives of the ESMF is to mainstream environmental and social safeguards in project planning and implementation, review the structure of the implementing agency and identify gaps and measures and identify robust capacity building plans at various levels of stakeholders, there is a need to identify suitable training plan for the different agencies/institutions involved

ESMF: Based on the aforementioned activities/findings develop an Environment and Social Management Framework (ESMF) that would provide: (i) mitigation action to avoid, contain, minimize and/or reverse identified adverse impacts; (ii) good practices guidelines for specific investments; (iii) technical guidelines on specific activities ***(iv)*** the institutional and human resource requirements for implementing the ESMF, provide a detailed budget/costs for the same and (iv) identify when specific subprojects require site specific Environmental and Social Management Plans (ESMPs) and/ or specific assessment based on a screening checklist to be included in the ESMF

Pest Management Plan (PMP)

1. The subprojects to be implemented under the Nepal Livestock Sector Innovation Project might involve use of veterinary chemicals and animal health products in excess of recommended dosages in anticipation of higher returns. Therefore, as a matter of precaution to address any potential and unforeseen consequences arising out of their use and disposal of chemicals on both human health and the environment (soil, water, air), a Guide on Safe Use of Animal Health Drugs and Chemicals will be prepared.
2. The proposed plan will be considered as a part of the ESMF. The specific tasks to be carried in the preparation of the plan are:
 - i) Review legislation related to the use of agro-chemicals in Nepal and review the rules and regulations of WHO, World Bank and other Development Agencies;
 - ii) Review the type of agro-vet chemicals/pesticides that are likely to be used by the project and to ensure that the products are within the list of recommended products by relevant authority; and does not include pesticide/ chemical that fall in WHO classes IA and IB. Explicitly explain to what extent project activities will involve the use of these chemicals and the nature of the usage i.e. high, low, moderate or;
 - iii) Develop instruments for screening, controlling and monitoring of chemicals usage that are pragmatic and best suited in Nepal's rural area; develop a strategy for safe use of chemicals for activities supported under the sub-projects.

Resettlement Policy Framework

3. Under the Nepal Livestock and Horticulture Project, some of the sub-project activities might involve land acquisition. Accordingly, a Resettlement Policy Framework (hereafter, RPF) will be prepared to serve as a practical tool that would be applied if there is to be any form of land acquisition (voluntary and involuntary). The RPF will include:
 - i) Principles and objectives governing land acquisition, resettlement preparation and implementation under the project;
 - ii) Legal framework guiding land acquisition and resettlement (Nepali laws and World Bank's policy on Involuntary Resettlement);
 - iii) Steps to be followed while preparing the Resettlement Action Plan for: (i) Voluntary Land Donation; (ii) Involuntary Land-Taking.
 - iv) Description of the process for preparing and approving resettlement plans; eligibility criteria for defining various categories of displaced persons; methods of valuing affected assets; organizational procedures for delivery of entitlements;
 - v) Description of the implementation process, grievance redress mechanisms, and consultations.
 - vi) Description of monitoring arrangements and capacity building needs.

Vulnerable Community Development Planning Framework

4. The Nepal Livestock Sector Innovation Project is likely to be implemented in areas where there is presence of vulnerable groups. As part of the ESMF, a Vulnerable Community Development Planning Framework (hereafter, VCDF) will be prepared to serve as a practical tool that will help ensure that the project fully respects the dignity, human rights, economies and cultures of vulnerable groups, including the Indigenous Peoples. Among others, the VCDF will included:
 - i) Agreed principles, policies, guidelines and procedures to be integrated into project implementation and assist in the achievement of the compliance with applicable Nepali laws relating to indigenous peoples and other marginalized groups and regulations and relevant World Bank's safeguard policies and objectives relating to Indigenous Peoples.
 - ii) A screening process to determine whether vulnerable groups are present in or have collective attachment to the project area; framework for consultation and participation where the project affects (both positively and negatively) vulnerable groups, including indigenous peoples; mechanism for managing impacts by developing appropriate mitigation/rehabilitation measures; and a framework for monitoring such measures during implementation.
 - iii) Institutional arrangements for the implementation of mitigation measures, the monitoring arrangements, and capacity building needs.

1.11 Methodology Followed for Preparing ESMF

The ESMF is prepared by using both the methodology i.e by using primary and secondary source of information. Regarding the secondary source of information, the related plan, policies, legislations, guidelines were reviewed. Similarly, the Project Concept Note of NLSIP, other documents available at MOLD related to the project was also reviewed.

Primary information shall be collected by field visits, direct interview with the project director, WB officials, experts and stakeholders at the proposed 3 clusters namely Pokhara, Biratnagar, and Kathmandu. The outcomes of workshop as applicable shall be incorporated in relevant sections in ESMF.

1.12 Main Outputs of ESMF

- i) ESMF for as per Bank's OP 4.01 and Government of Nepal's legal and regulatory framework;
- ii) PMP in accordance with Bank's OP 4.09 guidelines and Government's legal and regulatory framework.
- iii) Vulnerable Community Development Framework in accordance with Bank's OP 4.10 and the Government's legal and regulatory framework.
- iv) Resettlement Policy Framework in accordance with Bank's OP 4.12 and the Government's legal and regulatory framework.
- v) The ESMF has to be concise and limited to significant environmental and social issues. The PMP, RPF and VCDF can be part of ESMF. The main text of ESMF shall focus on findings, conclusions and recommended actions, supported by summaries of the data collected and citations for any references used in interpreting those data.

Chapter 2

Plan, Policies, Legislations, Guidelines, Directives Applicable to NLSIP

2.1 Applicable Policies, Acts, and Regulations

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
The Thirteenth Plan(2013-2016)	The three year plan has a vision of graduating Nepal from LDC category to a developing country status by 2022. It is consistent with the Istanbul Plan of Action, an outcome of the UNLDC IV meeting held in Istanbul on 9-13 May 2011. The plan has infancies' Agriculture development as one of governmental sectors of higher priorities and identify as one of the pillar for Nepalese economy.	Yes
Agriculture Perspective Plan, 1995–2015	The 20-year APP is a strategic document formulated in the mid-1990s and reviewed in 2001–2005 and 2006. The APP recognized livestock as one of its four priority outputs, and saw livestock as contributors to regional balance and gender mainstreaming.	Yes
Livestock Insurance Policy and Agriculture and Livestock Insurance Regulation (2013)	<p>Livestock insurance is extremely important, as livestock husbandry is risky, particularly for small and low-income farmers who face financial ruin in case of theft, injury, illness or death of an animal. According to Department of Livestock Development, premature mortality is about 2 percent to 3 percent per annum for cattle and buffalo and considerably higher for small ruminants and pigs. Livestock insurance helps livestock farmers to cope with such risks, and facilitates farmers' access to finance by increasing their creditworthiness.</p> <p>Although general insurance was introduced in Nepal in 1937 after the establishment of Nepal Bank Ltd, the country's first commercial bank, and the National Insurance Corporation was established in 1967 [13], livestock insurance began only in 1987 in form of livestock credit or micro-finance guarantee insurance against animal mortality and loss. In Nepal, many organizations provide livestock insurance services on a limited scale; they include the Small Farmers' Development Bank (SFDB),</p>	

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
	<p>Micro-Finance Institutions (MFI), Community Livestock Development Projects (CLDPs) sponsored community-based organization (CBOs) and Financial Intermediary Non-Governmental Organizations (FI-NGOs) which are not regulated by the Insurance Board (IB), the national-level regulating body.</p>	
<p>Rangeland Policy, 2012</p>	<p>The Policy defines rangeland as natural pasture land, grassland and shrub-land. It aims to increase productivity by improving forage/grass productivity, to protect livestock farmers' traditional rights for pasturing livestock in community rangeland and forest, and to determine stocking density to minimize competition between grazing domestic and wild animals.</p> <p>The Policy seeks to secure the facilities traditionally enjoyed by livestock farmers using range-lands located within community forests. The Policy identifies provisions to collect and conserve the green forage (grass) during the rainy season and winter and dry seasons in order to ensure continuous supply of cattle feed round the year. The Policy seeks to determine livestock density on the basis of capacity of the rangelands for minimizing the grazing competition and pressure of both domesticated and wild animals, and imposes charges or penalties on cattle for using rangeland with the goal of limiting unproductive cattle on the rangeland.</p>	<p>Yes</p>
<p>National Land Use Policy, 2012</p>	<p>The Policy aims to encourage optimal use of land for agriculture by classifying the country's land territory into seven land use categories— agricultural, forest, residential, commercial, public, industrial, and others. Land in the agriculture category is for agricultural cultivation, livestock farming, and tree plantation. The Policy also aims to increase agricultural productivity by systematizing land fragmentation and by adopting a land pooling system. The goal is to</p>	<p>Yes</p>

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
	encourage commercial, cooperative and contractual farming.	
Climate Change Policy, 2011	<p>The Climate Change Policy, 2011 is based on Nepal's ratification on November 1, 1993 of the United Nations Framework Convention on Climate Change (UNFCCC) negotiated at the UN Conference on Environment and Development (UNCED) or the Earth Summit held at Rio de Janeiro, Brazil in June 1992 [16]. Nepal also acceded to the Kyoto Protocol (KP) which is an international agreement linked to the UNFCCC, on 19 September 2005. Nepal also adopted a National Adaptation Program of Action (NAPA), 2010 and Local Adaptation Program of Action (LAPA), 2011 for climate change adaptation.</p> <p>The main goal of the Climate Change Policy, 2011 is to improve livelihoods by mitigating and adapting to the adverse impacts of climate change, adopting a low carbon emissions socio-economic development path, and meeting the spirit of the country's national and international agreements related to climate change.</p>	Yes
Poultry Policy (2068)	<p>The poultry policy demands for the registration of firms prior to its operation. It encourages individuals/firm to conduct research and development of new breeds of chicken. The policy promote establishment of poultry of local breeds with better infrastructures with insurance from natural calamities/hazard. The policy attracts private investor in the poultry farming sector to product parent stock within the country and bring significant improvement in quality of poultry to meet the international standard maintaining disease free zone with application of bio-security in poultry farms. Further policy have open the space for poultry market information system, upgrading the laboratories to conduct research, surveillance, control and eradication of poultry disease along with scientific</p>	Yes

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
	<p>management, and its transportation and distributions. Moreover, the poultry have urged private sector to build a slaughter houses and meat processing plant. It has directed local bodies to establish directive committee for the introduction of Public Private Partnership (PPP) in poultry sector. The policies guide the directive committee to interact with government for incorporation of necessary measures in poultry sector to bring significant improvement in the country.</p>	
<p>Dairy Development Policy, 2007 (2064 BS)</p>	<p>The policy (DDP) envisions investment in the income and employment generating and poverty-alleviating dairy business. To achieve this vision, it has adopted the policy of providing pasture (grazing land) and cattle feed year-round. The DDP encourages concerned organizations to provide collateral-free soft (concessional) loans, group loans and technical assistance to farmers, particularly women and underprivileged communities, with a view to promoting livestock farming. The DDP seeks to mobilize farmers' cooperatives to promote livestock insurance service extension, and provides that the Nepal government may subsidize the premium on livestock insurance obtained by farmers through their cooperatives and groups. Accordingly, the Nepal Government, in its national budget speech-2014/15, has announced a 75 percent subsidy on the livestock insurance premium [11].</p> <ul style="list-style-type: none"> ▪ To ensure quality dairy production, the DDP has entrusted the Department of Livestock Service with the responsibility to provide technical services, manage cattle-feed and livestock health training, and minimize costs. ▪ The Policy is based on a long-term vision to encourage participation of public, private and cooperative sectors in dairy production. ▪ A DDP objective is to increase production and productivity of milk in rural areas which helps alleviate rural poverty. 	<p>Yes</p>

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
Trade Policy 2009	<p>The Trade Policy is formulated to address issues of international trade dynamics such as affiliation with the regional and multilateral trading system, expansion of bilateral free trade areas, simplification of trade procedures, development of new border transit system, sanitary and phyto-sanitary (SPS) measures, and managing technical barriers to trade (TBT), which could contribute towards sustaining the export trade. This policy aims to support economic development and poverty alleviation through enhanced development of the trade sector. Nepal is a chronic trade-deficit country, having a trade imbalance of more than national budget in the fiscal year 2013/14.</p> <p>The Policy lays emphasis on commercial livestock farming and the promotion and supply of improved breeds. The Policy offers capital and technical assistance for the commercial farming of animals to ensure supply and export of high-quality rawhide and skins.</p>	Yes
Agriculture Bio-Diversity Policy, 2007	<p>The Agriculture Bio-diversity Policy resulted from Nepal's accession in 1993 to the International Convention on Biological Diversity (CBD)—informally known as Convention on Biodiversity—adopted at the Earth Summit in Rio de Janeiro, Brazil in 1992. This policy is in accordance with the objectives of NAP-2004 to protect, promote and utilize bio-diversity and to promote ecological balance. It intends to lead to benefit from protection and utilization of genetic resources for food security, livelihood security and poverty reduction. Livestock genetic improvements enabled by diversity are expected to contribute to increased productivity.</p>	Yes
Nepal Biodiversity Strategy (2002); and Nepal Biodiversity Strategy Implementation Plan (1992)	<p>Nepal biodiversity strategy, adopted by GoN in August 2002, specifies the implementation of impact assessments process in accordance with the provisions of EPA 1997 and EPR 1997 to assess the impacts of development activities on biodiversity. The strategy has given emphasis in ensuring effective implementation of existing</p>	Yes

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
	<p>rules and regulations regarding environmental impact assessments.</p> <p>The National Biodiversity Strategy plan describes the protection and wise use of the biologically diverse resources of the country, the protection of ecological processes and systems, and the equitable sharing of all ensuing benefits on a sustainable basis for the benefit of the people and to honour obligations under the Convention on Biological Diversity. Biological diversity in Nepal is closely linked to the livelihoods and economic development of people, and relates to agricultural productivity and sustainability, human health and nutrition, indigenous knowledge, gender equality, building materials, water resources, and the aesthetic and cultural well-being of society.</p>	
<p>National Agriculture Policy (2061, 2004)</p>	<p>The National Agriculture policy has vision of improving living standard through sustainable agricultural development achieved by commercial and competitive farming system. The main objectives of the policy are: Increase production and productivity; increase competitiveness in regional and world markets developing foundations of commercial and competitive agriculture; and protect, promote and utilize existing natural resources, environment and bio diversity.</p> <p>The policy emphasized to develop an appropriate policy and strategy for encouraging cooperative and private sectors for commercial production, processing and marketing of the agricultural products.</p>	<p>Yes</p>
<p>Agro-Business Promotion Policy (ABPP), 2006</p>	<p>The ABPP, 2006 aims at diversification, service delivery and private sector involvement to Transform agriculture from subsistence to commercial farming. The policy aims to reduce poverty by encouraging production of market-oriented and competitive agro-products and promoting internal and external markets. The policy's specific measures include public-private partnership in services delivery and in infrastructure for storage, marketing and processing.</p>	<p>Yes</p>

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
<p data-bbox="169 936 462 1055">National Micro-Finance Policy 2005</p> <p data-bbox="169 1272 462 1310">Forest Policy, 2002</p>	<p data-bbox="485 226 1166 808">The National Micro-Finance Policy, 2005 mainly aims at helping to alleviate poverty through micro-financial services, and targets the agricultural and livestock sectors, among others. The revised Forest Policy (2002) emphasizes the protection of soil, water, flora and fauna constituting the main element of forestry to sustain biodiversity. It recognizes that the sustainable forests management is only possible when it give adequate attention to meet the basic needs of the people, sustainable utilization of forest resources, participation in decision making and sharing of benefits and above all on socio-economic growth.</p> <p data-bbox="485 853 1166 1391">The forest policy does not specifically mention environmental policy strategies with regard to other development programs which might intervene the forested areas, however, in other policy strategies related to forest management and forestry program implementation emphasizes on the need of land use planning, prioritization for the conservation of biodiversity, ecosystem, and genetic resources, effective production and utilization of forest resources and blending forestry management, biodiversity conservation and community development activities in holistic sense.</p> <p data-bbox="485 1447 1166 1603">The policy is compliant with key agricultural national documents including the supplementary to the National Agriculture Policy (NAP), 2004 and Agri-business Promotion Policy, 2006.</p> <p data-bbox="485 1697 1166 1899">It plans to make the poultry business more productive, competitive and sustainable by improved quality of chicks through well-managed hatchery and rearing as well as by systematizing distribution of poultry products.</p> <p data-bbox="485 1951 1166 2063">The policy envisages programs to base bird rearing and poultry businesses on comparative cost advantages and production potentials.</p>	<p data-bbox="1289 1128 1350 1160">Yes</p>

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
	<p>The policy is consistent with the national policy thrusts of public-private partnership and environment protection as far as its implementation plans are concerned.</p>	
<p>Labor Policy, 1999, and Child Labor Act, 2000</p>	<p>Nepal, a member of the International Labor Organization (ILO), has so far signed 11 ILO conventions [4,19]. Hence, it should make its labor policy and practices fully compliant with its commitment to international labor standards and practices. The Labor Policy, 1999 in compliance with the Child Labor Act, 2000, bans use of child labor in economic activities. The policies and provisions also have bearing on livestock management.</p>	<p>Yes</p>
<p>Animal Health Program Implementation Procedure, 2013 and Animal Health and Livestock Services Act, 1999</p>	<p>The Animal Health Program Implementation Procedure, 2013 was introduced in line with the Animal Health and Animal Service Act, 1999 and its related Regulation. The policy rightly aims at promoting production, distribution, consumption and export of healthy livestock and making animal-health related programs more effective, as these functional areas are crucial in livestock management</p>	<p>Yes</p>
<p>Constitution of Nepal 2015</p>	<p>The interim constitution of Nepal, 2015 focuses on raising the standards of living of the general public. The Article 35 (1) asserts that; The State shall pursue a policy of raising the standards of living of the general public through the development of infrastructures such as education, health, housing and employment of the people of all regions, by equitably distributing investment of economic investment for the balanced development of the country.</p>	<p>Yes</p>
<p>Right to Information Act, 2064 (2007)</p>	<p>The aim of this act is to make the functions of the state open and transparent in accordance with the democratic system and to make it responsible and accountable to the citizens. It intends to make the access of citizens to the information of public importance held in public bodies simple and easy and to protect sensitive information that could have an adverse impact on the interest of the nation and citizens.</p>	<p>Yes</p>

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
	<p>Clause 3 of the act ensures the Right to Information. It says that every citizen shall, subject to this Act, have the right to information and they shall have access to the information held in the public Bodies unless confidentiality has been maintained by laws.</p> <p>Clause 4 of the act describes the Responsibility of a Public Body to disseminate information. It mentions that each Public Body has to respect and protect the right to information of citizens. Public Bodies shall have the following responsibilities for the purpose of protecting the right to information of citizens:</p> <ul style="list-style-type: none"> to classify and update information and make them public, publish and broadcast to make the citizens' access to information simple and easy to conduct its functions openly and transparently, to provide appropriate training and orientation to its staffs, <p>Public Bodies may use different national languages and mass media while publishing, broadcasting or making information public. A Public Body shall arrange for an Information Officer for the purpose of disseminating information held in its office.</p> <p>The clause 7 of the act prescribes the Procedures of Acquiring Information. It states that a Nepali Citizen, who is interested to obtain any information under this Act, shall submit an application before a concerned Information Officer by stating the reason to receive such information. <i>United Nations Declaration on the Rights of Indigenous Peoples shall be followed (as applicable)</i></p>	
National Foundation for Upliftment of Adivasi/Janjati Act, 2058 (2002)	Government of Nepal has identified and legally recognized 59 indigenous communities. They are officially referred to as Adivasi Janajati in Nepali and Indigenous Nationalities in English as per the National Foundation for Upliftment of Adivasi/Janjati Act, 2058 (2002). One can find vast disparities in terms of socio-economic standing among the Adivasi and Janajati groups. According to Nepal Federation of	Yes

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
	<p><i>Adivasi Janajati</i> (NEFIN) 10 of the 59 <i>Adivasi Janajati</i> are "endangered", 12 "highly marginalized", 20 "marginalized", 15 "disadvantaged" and 2 are "advanced" or better off on the basis of a composite index consisting of literacy, housing, landholdings, occupation, language, graduate and above education, and population size.</p>	
<p>Labor Act 1991 (2048 BS)</p>	<p>Section 3 relating to classification of the posts; section 4 relating to appointment letter; Section 5 prohibition on child labour and restriction on minor and women; Section 10 on job security; section 12 related to retrenchment and re-employment, section 16, 17, 18 and 19 relating to working hours; section 20, 21, 22, 23, 25 and 26 related to remuneration; section 27 to 36 relating to occupational health and safety; section 37 to 44 relating to welfare arrangements; section 46 related to special arrangement is the construction sites; Section 50 to 60 related to conduct and penalties; section 72 to 82 related to settlements of labour disputes.</p>	<p>Yes</p>
<p>ILO Convention on Indigenous and Tribal Peoples, 1989 (No.169)</p>	<p>In 2007, the UN Declaration on the Rights of Indigenous Peoples was adopted by the General Assembly. Nepal ratified ILO Convention No. 169 on September 14, 2007 (BS 2064/05/28). Article 1 of the convention provides a definition of tribal and indigenous peoples. Article 6 requires consultation with the peoples concerned through appropriate procedures and, in particular, through their representative institutions, whenever consideration is being given to legislative or administrative measures which may affect them directly. In Article 15, it states that indigenous and tribal peoples shall, wherever possible, participate in the benefits of natural resource utilization activities and shall receive fair compensation for any damages which they may sustain as a result of such activities. Article 16(2) clearly mentions that where the relocation of these peoples is considered necessary, such exceptional measures and</p>	<p>Yes. As indigenous peoples are present in the sub- project area, the convention requirements are applicable to the proposed project.</p>

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
	<p>such relocation shall take place only with their free and informed consent.</p> <p>Where their consent cannot be obtained, such relocation shall take place only following appropriate procedures established by national laws and regulations, including public inquiries where appropriate, which provide the opportunity for effective representation of the peoples concerned.</p> <p>Article 16(3) mentions that, whenever possible, these peoples shall have the right to return to their traditional land as soon as the grounds for relocation cease to exist.</p> <p>Article 16(5) specifies the persons thus relocated shall be fully compensated for any resulting loss or injury.</p>	
Land Acquisition Act 1977 (2034 BS)	<p>Article 3 stipulates power to the government to acquire any land anywhere for public purpose subject to compensation under this Act; Rule 4 empower government to acquire land upon request by institutions subject to the payment of compensation and all other expenses under this Act; Rule 5, 6, 7 and 8 stipulates provisions and procedures for initiating initial land acquisition process and estimating compensation rates; Rule 9 and 8 stipulates procedures and provisions for notification to land acquisition; Rule 11 stipulates provision of right to file complain by the affected on the public notice with regard to the land right; Rule 13, 14, 15 stipulates procedures and provisions of Compensation Fixation; Rule 16 and 17 stipulates criteria for compensation fixation; Rule 19 stipulates discloser of the compensation entitlement through public notification; Rule 25 stipulates provision of Complain against the compensation rates to the Ministry of Home affairs. The decision of the Ministry of Home affairs on the complaint is final.</p>	<p>The project needs to acquire or passes through structures and agricultural field land use restrictions may apply.</p>
Environment Protection Act 1997, Environment Protection Rules 1997	<p>Environmental Protection Act, 1997, Environmental Protection Rules 1997 as Amended (1997, 1999, 2007) Nepal has enacted a comprehensive and umbrella type environmental act, the Environment Protection</p>	<p>Yes</p>

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
	<p>Act (EPA) 1997, and followed by Environmental Protection Regulation 1997 and as amended (1999, 2007, 2009 & 2010) which are now enforced through appropriate regulatory measures.</p> <p>Section 3 of the Act requires the proponent to conduct an IEE and EIA in relation to the prescribed proposals. Section 4 of the Act prohibits implementation of development proposals without prior approval of the concerned agencies or Ministry of Environment (MoEnv) as specified by the Act. Section 5 of the Act provides that all the IEE/EIA of the development proposals should be presented to the concerned agencies for approval. Under section 7 of the Act, industries or any others development projects owners are required not to discharge, emit or dispose waste, sound, radiation or any such acts which will cause pollution or to allow pollution to be caused in a manner which is likely to have significant adverse impacts on the environment or to harm human life or public health. Further, the section stipulates that causing pollution or allowing such pollution to be caused a punishable act.</p> <p>The proposals requiring IEE studies are broadly listed in Schedule 1 under Rule 3 of the EPR enforced under the provisions of EPA. Under the Forest Sector of the Schedule 1, it is mandatory to conduct IEE study and approval as per the rule provisions for the removal of plants and vegetation from forestland less than 5 ha.</p> <p>Rule 7 of EPR provides that the proponent shall, on the basis of the approved work schedule pursuant to Rule 5, prepare the report of initial environmental examination (IEE) in the format as indicated in Schedule 5, and the report. Under sub rule 2, Whilst preparing the IEE report, the proponent shall affix a notice in the concerned VDC or Municipality, Office of the District Development Committee, school, hospital and health post requesting the VDC or Municipality and District Development Committee or concerned individuals or</p>	

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
	<p>institutions to offer their written opinions and suggestions within 15 days with regard to the possible impact of the implementation of the proposal on the environment where the proposal is to be implemented and prepare a Deed of Public Enquiry (Muchulka) of that deed. The said 15 days' notice shall also be published in a national level daily news paper. After the publication of such notice, the opinions and suggestions so received shall also be included in the final report.</p> <p>Rule 12 of EPR stipulates that the proponent is obliged to follow the terms of conditions set by concerned agencies or MoPE in the approval letter during project implementation and operation. Rule 13 provides that the concerned agency to be responsible for the project monitoring</p>	
<p>The Animal Health and Livestock Services Rules, 2056 (2000)</p>	<p>Animal health and livestock services rules 2056 (2000) has spelled out several items including establishment of quarantine check post, quarantine spot, terms and criteria to be followed while constructing quarantine spot, period for keeping in quarantine, functions and roles and responsibilities of quarantine officer. The rules has also provision for issuing quarantine certificate, awarding of letter of recommendations relating to establishing of industries, and recommendations for import and export.</p> <p>The Act has also mentioned the procedure for disposal and also included the function, duties and power of veterinary inspector.</p>	<p>Yes</p>
<p>Animal Health and Livestock Services Act, 2055 (1999)</p>	<p>An Act Made to Provide Necessary Arrangement Relating to Animal Health and Livestock Services was enacted in 2055 (1999). The Act has provisions relating to animal quarantine, arrangements relating to the establishment of an industry and export , import, provision for penalty and appeal for importers etc.</p>	<p>Yes</p>
<p>The Slaughterhouse and meat inspection</p>	<p>The Slaughterhouse and meat inspection Act was enacted in 2055, and covers that no establishment of a slaughterhouse or selling of</p>	<p>Yes</p>

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
Act was enacted in 2055,	meat be made without license, establishment of slaughterhouse, licensing provisions are mandatory. The appointment of meat inspector, their roles and responsibilities, examination of animals before slaughtering, examination of meat and slaughter house, stamping and marking of meat etc are included in the Act.	
Forest Act 1993 its amendment 1999 and Forest Regulation 1995	<p>Forest Act, 1993, its amendment (1999) and Forest Regulation (1995), recognizes the importance of forests in maintaining a healthy environment. The Forest Act requires decision makers to take account of all forest values, including environment services and biodiversity, not just the production of timber and other commodities. The basis of the Act's approach to forest and forest products is "resource oriented" rather than "use oriented".</p> <p>Section 49 of the Act prohibits reclaiming lands, setting fires, grazing, removing or damaging forest products, felling trees or plants, wildlife hunting and extracting boulders, sand and soil from the National forest without the prior approval.</p> <p>Section 68 of the Act empowers GoN to use any of forest. Notwithstanding anything contained in this Act, in case there is no alternative except to use the Forest Area for the implementation of the plan having national priority and if there shall be no significant adverse effect in the environment while conducting such plan, Government of Nepal may give assent to use any part of the Government Managed Forest, Community Forest, Lease hold Forest or Religious Forest for the implementation of such plan.</p> <p>In case any damage is to be occurred to any person or community while giving assent to use the Forest pursuant to Sub-section (1), Government of Nepal shall have to make proper arrangements in this regard.</p> <p>Forest Rules, 1995 detailed the legal measures for the conservation of forests and wildlife. Based on forest legislation, 13 plant species are included in the level of protection list. GoN has</p>	Yes

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
	banned the felling, transportation and export of Champ (<i>Michelli achampaca</i>), Khayar (<i>Acacia catechu</i>) and Sal (<i>Shorea robusta</i>).	
Local Self-Governance Act, 1999 and Local Self Governance Rules, 1999	The Local Self-Governance Act, 1999 provides more autonomy to District Development Committees, Municipalities and Village Development Committees. Section 25 of the Act provides the functions, rights and duties of the Ward Committee. Section 25(e) of the Act requires the ward to help for protection of environment through plantation over the bare land, cliff and mountains. Section 28 has mentioned the functions, rights, and duties of VDC. The VDCs are required to protect the environment, nature and natural resources. Section 55 empowers VDC to levy taxes on utilization of natural resources. Section 68 lists the property of the VDC, which includes natural resources. Apparently, natural resources include mineral resources and thus, VDCs have an absolute authority over the natural resources.	Yes
Animal Health and Livestock Services Act 2055 (1999)	Provisions relating to animal quarantine, arrangement for animal breed improvement, arrangement relating to the establishment of an industry and export import, clauses for penalty and appeal are included in the Act.	
Industrial Enterprise Act (1992)	Enterprise relating to establishment of agro farm has been defined as industry. GoN may issue directives to any industry in the matters relating to the pollution of environment and it shall be the duty of the concerned industry to follow such directives.	Yes
Feed Act (2033) and Regulations (2051).	The Act has provision for prohibition on production, sale, distribution, export, import, and storage of contaminated feed. It also prohibits sale and distribution of feed by lying or misleading. The Act has provisioned for the appointment of feed inspector by GoN. The licensing provision is clearly mentioned in Act as per with any person/firm intending to produce, sell or distribute the prescribed feed shall obtain the license as prescribed by authority. The Act has penalty clauses for violating clauses of act	Yes

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
	and liability of office committed by the firm or body corporate is also mentioned in Act.	
National Guidelines EIA	<p>To address environmental impact assessment as envisaged by NCS, 1987, National Environmental Impact Assessment (EIA) Guidelines were endorsed by Government of Nepal on 27 September 1992 and gazetted on 19 July in 1993, Volume 43, Number 5. The guideline provides criteria for project screening and initial environmental examination (IEE). This also includes scoping, preparation of terms of reference for EIA, methods of EIA report, impact identification and prediction, impact mitigation measures, review of the draft EIA report, impact monitoring, evaluation of impact studies, impact auditing, community participation and schedules and annexes to IEE and EIA.</p> <p>Many of the guideline provisions are now included in the Environment Protection Act, 1997, and Environment Protection Regulation, 1997. EIA in Nepal has now become legally mandatory. However, as the National Environmental Guidelines, 1993 have not been issued under the Environmental Protection Act (1997); they do not have any legal force. It is a policy guideline issued by the Government that is still followed in the matters which are not covered by the Environment Protection Act (1997) and Environment Protection Regulations (1997).</p>	Yes

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), 1973	The convention classifies species according to criteria where access or control is important (e.g. I - species threatened with extinction; II - species which could become endangered; III - species that are protected; E - Endangered; V - Vulnerable, R – Rare (CITES 1983). The project will have to minimize impacts to the CITES species as far as possible.	Yes
Convention on Biological Diversity, 1992	Conve The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding. Under the Article 14 of the convention, the each contracting party should introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures.	Yes
The Building Act, 2055 (1998), revised 2007	Whereas, it is expedient to make necessary provisions for the regulation of building construction works in order to protect building against earthquake, fire and other natural calamities, to the extent possible	Since the construction of classroom, laboratory, etc are likely activities under NLSIP, this is applicable.
Nepal National Building Code , 2065 (2008)	There are 23 different title wise volumes of building code, which form a single national building code of Nepal, 1993. National Building Code was prepared in 1993 by then Ministry of Housing and Physical Planning now (MoPPW). This code emphasizes the need for changes and improvement in current building construction design and methods. The publication represents	Since construction of building is one of the components under NLSIP, this is triggered.

Plan/ Policies, Act / Regulation	Salient Feature/s	Applicability
	a standard of good practice and therefore takes the form of recommendations	
Environmental Standards	GoN has formulated different standards in different time frame The formulated standards are National Sound Pressure Level, Nepal, 2069BS (2012); Air Emission Limits for Imported Generator into Ambient Air, 2069BS (2012); Nepal Water Quality Guidelines for the Protection of Aquatic Ecosystem, 2065BS (2008); Nepal Drinking Water Quality Standards, 2063BS (2006); Tolerance Limits for Generic Industrial Effluent Standards Discharged into Public Sewers & Inland Surface Water, 2060BS (2003); Tolerance Limits for Effluent Standards Discharged into Inland Surface Water from Combined Wastewater Treatment Plants, 2060BS (2003) which will be considered while implementing the project.	Yes Refer Annex1
Treaties/Convention	Following international conventions and treaties in which Nepal is a signatory are applicable to NLSIP <ul style="list-style-type: none"> - Basal Convention (Controlling trans-boundary movements of hazardous waste and their disposal , started May 1989, rectified 15 Aug 1996) -Montreal Protocol on substances that deplete the ozone layer (signed 2 May 1984, amended 1990, and 1992) - Stockholm Convention on Persistent Organic Pollutant (starting date may 2001, rectified April 2002) -Rotterdam convention on Prior Informed consent procedure for certain chemical and pesticides in international trade (signed 11 Sept 2004, rectified Feb 2004) 	Yes

2. 2 Applicable World Bank Policies

The World Bank's environmental and social safeguard policies (ten of them) are a cornerstone of its support to sustainable poverty reduction. The objective of these policies is to prevent and mitigate undue harm to people and the environment in the development process. These policies provide guidelines for the identification, preparation, and implementation of programs and projects.

The following operational policies of the World Bank are relevant for NLSIP from an environmental and social viewpoint:

Table: Safeguard Policies Triggered in NLSIP

Safeguard Policies Triggered by the NLSIP	Yes	Potential	No
Environmental Assessment OP/BP 4.01	X		
Natural Habitats OP/BP 4.04			X
Forests OP/BP 4.36		X	
Pest Management OP 4.09		X	
Physical Cultural Resources OP/BP 4.11		X	
Indigenous Peoples OP/BP 4.10	X		
Involuntary Resettlement OP/BP 4.12		X	
Safety of Dams OP/BP 4.37			X
Projects on International Waters OP/BP 7.50			X
Projects in Disputed Areas OP/BP 7.60			X

2.3 Environmental Assessment (OP/BP 4.01)

Environmental Assessment is used by the World Bank to identify, avoid, and mitigate the potential negative environmental impacts associated with the Bank's operations early on in the project cycle. The policy states that Environment Assessment (EA) and mitigation plans are required for all projects having significant adverse environmental impacts or involuntary resettlement. Assessment should include analysis of alternative designs and sites, including the "no project option" and require public participation and information disclosure before the Bank approves the project.

In World Bank-funded operations, the purpose of Environmental Assessment is to improve decision making, to ensure that project options under consideration are sound and sustainable, and that potentially affected people have been properly consulted and their concerns addressed. The World Bank's environmental assessment policy and recommended processing are described in Operational Policy (OP)/Bank Procedure (BP) 4.01: Environmental Assessment.

2.4 Physical Cultural Resources (OP/BP 4.11)

The World Bank Policy OP/BP 4.11 defines physical cultural resources as movable or immovable objects, sites, structures, groups of structures, natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings, and may be above or below ground, or under water. Their cultural interest may be at the local, provincial or national level, or within the international community.

The Bank assists countries to avoid or mitigate adverse impacts on physical cultural resources from the development projects that it finances. The impacts on physical cultural

resources resulting from project activities, including mitigating measures, may not contravene either the borrower's national legislation, or its obligations under relevant international environmental treaties and agreements. The borrower addresses impacts on physical cultural resources in projects proposed for Bank financing, as an integral part of the environmental assessment (EA) process. The World Bank will also follow compliance with Nepal's chance find policy.

Norms and procedures for the conservation and restoration of historic buildings and for dealing with chance finds during small works will be specified. The conservation and restoration of historic buildings will use traditional materials and construction techniques as per the specifications of the Department of Archeology. A protocol for use by the construction contractors in conducting any excavation work will be developed, to ensure that any chance finds are recognized and measures are taken for their protection and conservation. As per the agreed protocol, all excavation work at the site would need to stop when there are chance finds of archaeological material until the Department of Archeology determines if the site needs to be documented or scientifically excavated. The protocols and protective measures will be included in the EMPs that will be prepared for specific initiatives, with a focus on consultations and participation of the local stakeholders.

2.5 Indigenous People (OP/BP 4.10)

Indigenous People (OP/BP 4.10) is triggered because of the presence of Janajati in the project area (See section 3.1.2 for explanation). Dalits and other vulnerable groups are also present in the project area.

This policy states that any development process under World Bank financing should fully respect the dignity, human rights, economies, and cultures of Indigenous Peoples (IPs). The project should engage in a process of free, prior, and informed consultation with IPs that should result in broad community support to the project by the affected Indigenous Peoples.

Projects should include measures to avoid potentially adverse effects on the IP's communities or when avoidance is not feasible, minimize, mitigate, or compensate for such effects. They should ensure that the IPs receive social and economic benefits that are culturally appropriate and gender and inter-generationally inclusive.

2.6 Involuntary Resettlement (OP/BP 4.12)

As per World Bank policy, Involuntary Resettlement (OP/BP 4.12) is triggered in case the project results into loss of private properties such as land, houses, structures and commercial places or disruption of formal /informal sources of income and livelihoods happens due to project interventions.

OP/BP 4.12 recognizes that involuntary land-taking resulting in loss of shelter, assets or access and income or sources of income should be addressed in World Bank-financed projects. Displaced persons should be meaningfully consulted, given opportunities to participate in planning and implementing resettlement programs and assisted in their efforts to improve their livelihoods and standards of living. Absence of legal title to land should not be a bar for compensation, resettlement, and rehabilitation assistance. Vulnerable groups such as IPs, women-headed households, and senior citizens should be entitled to special

benefit packages in addition to compensation and resettlement. The Operational Policy is applicable whenever there is involuntary land taking resulting in displacement of people and / or loss of livelihood or source of livelihood.

2.7 Forestry (OP 4.36)

There is no community or GoN forest in within the candidate site of NLSIP. However, this aspect needs to be clearly screened during the sub project selection

2.8 Comparison of Government of Nepal and World Bank Policies

Table below presents a comparison of Government of Nepal and World Bank policies, and recommendations to bridge identified gaps.

Table Comparison of GoN and World Bank Policies Gaps and Recommendations

Category	GON Policy	World Bank Policy	The GAP	Recommendations to Bridge Gaps
<p>A. Environment (Natural Habitat , & Forest including terrestrial and aquatic</p>	<p>Development Project falling under EPR criteria should be subjected to IEE/EIA.</p> <p>1, Forest regulation requires permission from related authorities (DFO, CFUGetc.) for any intervention in forested area. Compensatory re-plantation ratio is defined for commercial projects.</p> <p>National Park and Wildlife Conservation Act, demands permission from Ministry of Forest and Soil Conservation besides Ministry of Environment. The NLSIP is not affecting the national parks and conservation areas</p>	<p>Environmental Assessment has to be carried out for identifying potential risks and adverse impacts, mitigation measures and environmental management plan. When natural habitat and forest policies are triggered Environmental assessment and environmental management plan (EMP) will adequately address the relevant issues.</p>	<p>Activities listed in EPR Schedule I, particularly cross sectoral provisions related forest and investment limits is likely to requires an IEE, and those listed in Schedule II requires EIA. The Schedule I and II is based on activity type, Potential risk is not formally considered for screening.</p>	<p>In order to fill the gap between WB and GON requirements/approach, environmental screening is must for each subproject, and consider potential environmental risk : project Environmental Screening Format includes this. An Environmental Management Plan (EMP) shall be prepared for each contract during detail engineering design phase.</p> <p>The plan aims to address adverse environmental impacts arising due to project intervention. The project will strictly follow re-plantation as per the ratio of plantation in the forest guideline 2006..</p>

Category	GON Policy	World Bank Policy	The GAP	Recommendations to Bridge Gaps
B. Physical-Cultural Resources	Clause 28 of EPR states that physical and cultural resources shall not be disturbed or damaged without the prior approval of concerned authority.	Environmental assessment has to be carried out in case such resources are found to be affected by the subproject.	“Chance find’ is not covered by the EPR requirements but is stipulated in Ancient Monument Protection Act.	ESMP shall address such issues following GoN and WB policy.
C. Land and Structures	<p>Clause 3 of this Land Acquisition Act states that any asset that is required for public purposes shall be acquired by providing compensation. Compensation Fixation Committee will establish the Compensation rates.</p> <p>Guthi Corporation Act, 2033 (1976). Section 42 of this Act states that Guthi (religious trust land) acquired for a development must be replaced with other land, rather than</p>	<p>Full compensation at replacement cost for lost assets shall be provided according to asset types and location.</p> <p>Resettlement and Rehabilitation assistance to affected people to enable them to improve their living standard.</p> <p>As per OP 4.12 community assets needs to be replaced in consultation with the community.</p> <p>As per OP 4.12, all those who are affected needs to be assisted</p>	<p>The Land Acquisition Act of Nepal only provides for cash compensation based on degree of loss. It does not take into account vulnerability of the land affected person.</p>	

Category	GON Policy	World Bank Policy	The GAP	Recommendations to Bridge Gaps
	<p>compensated in cash</p> <p>Land Reform Act (LRA) 2021 (1964). This Act establishes the tiller's right on the land, which he is tilling. The LRA additionally specifies the compensation entitlements of registered tenants on land sold by the owner or acquired for the development purposes</p>	<p>including, tenants and sharecroppers. Squatters and encroachers will be provided compensation at replacement value for their structures as well as other assistances.</p>		
D. Indigenous Community	<p>The Interim plan encourages each development program to incorporate infrastructure and income generation program targeted to indigenous community.</p>	<p>Ensures free, prior, and informed consultation (FPIC) with the affected indigenous people to obtain broad community support to the project. Social Assessment will be carried out to identify potential effect and prepare plan to ensure that indigenous peoples receive social and</p>	<p>Though GoN's interim plan encourages development programs to incorporate income generation schemes for IPs, there is no mention of broad consent from the IPs. At the same time GoN has also ratified ILO 169 and United Nations Declaration of Rights of Indigenous</p>	<p>Project will carry out free prior informed consultations with the indigenous community and other vulnerable communities to obtain broad consent for the project. Project will prepare Vulnerable Community Development Plan (VCDP) based on community needs of indigenous as well as other vulnerable communities.</p>

Category	GON Policy	World Bank Policy	The GAP	Recommendations to Bridge Gaps
	<p>NFDIN Act 2002, Local Self-Governance Act, 1999 and Tenth Plan (2007-10) and Three Year Interim Plan (2011-13)</p>	<p>economic benefits that are culturally appropriate.</p> <p>Nepal does not have a standalone policy on Indigenous Peoples and other vulnerable communities.</p> <p>These acts have been placed significant emphasis on delivering basic services to the disadvantaged and indigenous people, Dalits, women, disabled and other vulnerable groups</p> <p>These acts and plans include policies for the development of Adivasi/Janajati and other disadvantaged groups:</p> <ul style="list-style-type: none"> ▪ creating an environment for social inclusion; ▪ participation of disadvantaged groups in policy and 	<p>People (UNDRIP), and is in the process of preparing National Action Plan for implementation of these international commitments</p>	

Category	GON Policy	World Bank Policy	The GAP	Recommendations to Bridge Gaps
		decision making; <ul style="list-style-type: none"> ▪ developing special programs for disadvantaged groups; ▪ positive discrimination or reservation in education, employment, etc.; ▪ protection of their culture, language and knowledge; ▪ proportional representation in development process; and ▪ making the country's entire economic framework socially 		
E. Loss of Crops and Income Source	Compensation shall be provided for loss of crop damage/income source.	Full compensation shall be provided		Livelihood assistance shall be provided for business losses (if any, land or access required during implementation shall be fully compensated.

Chapter 3

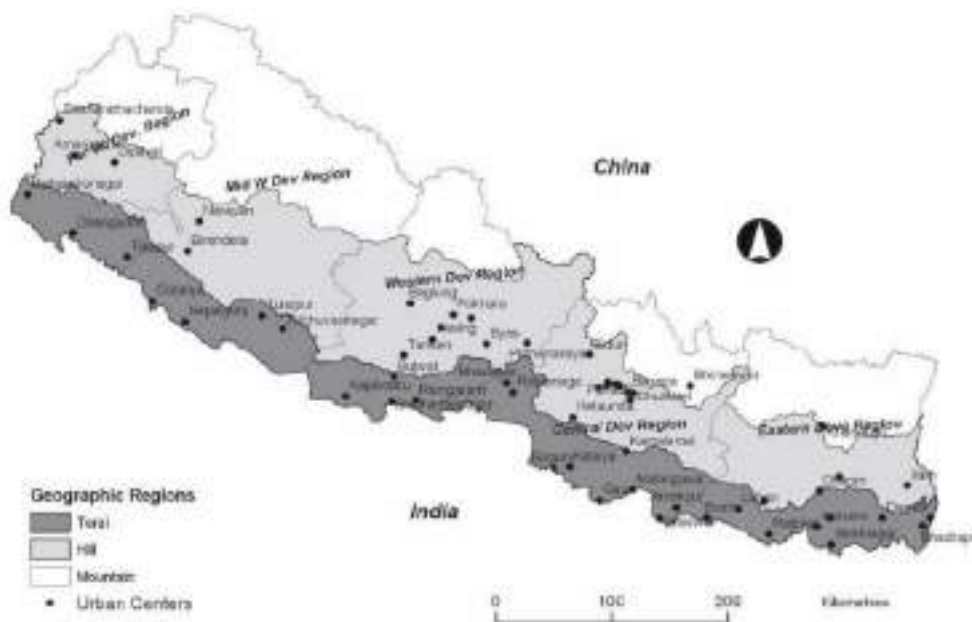
Summary of Biophysical, Socio-economic Baseline of Project Affected People in Project Areas

3.1 Introduction

Nepal is a physiogeographically and socio-culturally diverse country. Nepal is interwoven by its sense of spirituality, ecological values and geographical realities. The altitude range from flat plains as low as less than 100m to the ascending height reaching to be the highest peak (Mt. Everest) in the world. Nepal borders two industrially developed and one of the largest economies of the world, China in the north and India in the south. The country is divided geographically into three layers called the Highhill (mountain), Midhills and flat plains called the Terai².

These three geographic regions, which correspond to the three main geo-climatic belts running from south to north, are shown in *Figure* below:

- The south Plain (“Tarai”) covering 23% of its surface at the south border with India; a dense populated area with a subtropical to tropical climate with an altitude ranging from 60 to 500m above sea level;
- The Hills covering 41.8% of its surface; an intermediary zone, densely populated in valleys with a temperate climate, an altitude ranging between 500 m and 2,500 m; and
- The northern Mountains (“Himals”) covering 35.2% of its surface; above 2,000 m, including seven of the eight highest peaks of the world, a very low densely populated area with a subalpine and alpine climate.



Source: Portnov, B., Adhikari, M. and Schwartz, M., 2007

Source: Asian

Development Bank

²Highills, Midhills and Terai contain 35 percent, 41 and 23 percent of total landmass of the country.

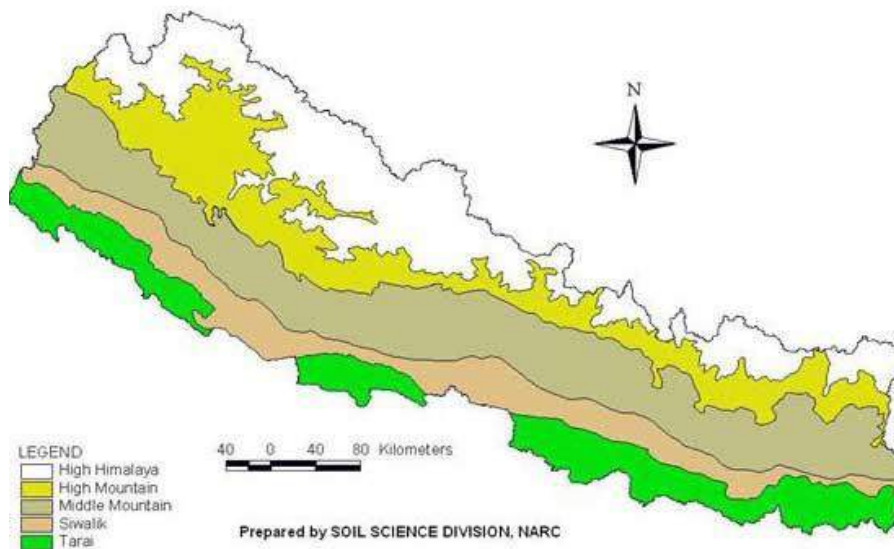
Figure Geographic Regions of Nepal

These 3 geographic regions are being further divided into five physiographic regions. The remarkable differences in climatic conditions between these regions are due to the rapid change of altitude within a short north-south distance, averaging 193 km. Settlements are mostly in the Terai, the Lower Hills and the Middle Mountains. People use the areas in the High Mountains and the High Himalaya for grazing their transhumant livestock and for collecting natural resources for domestic and commercial purposes.

The five physiographic regions are listed, from south to north, in the following table, and shown on the map that follows:

Physiographic region	Altitude (m)	Area (km ²)	Topographical feature	Climate	Mean T-
Terai flatlands	60–500	21,104 (14.3%)	Flat land with slope gradients from 0.2% to 1%	Hot monsoon and mostly tropical	>20 °C
Lower Hills (Chure or Siwalik)	500–1,000	18,858 (12.8%)	Consisting of Dun valleys, about 25%; gradient < 300 m and rarely > 1000 m (75%)	Hot monsoon and mostly subtropical	>20 °C
Middle Mountains	1,000–2,000	44,436 (30.1%)	Tropical valleys and elevated plains, about 6%; relief up to 1000 m is common, maximum up to 2000 m (94%)	Sub-tropical to warm temperate monsoon	15–20 °C
	2,000–3,000			Cool temperate monsoon	
High Mountains	3,000–4,000	29,594 (20.1%)	Sub-tropical–temperate valleys, about 10%; average relief 2000 m	Sub-alpine	10–15 °C
	4,000–5,000			Alpine	
High Himalaya	Above 5,000	33,492 (22.7%)	Dry Trans-Himalayan area	Tundra type and arctic	< 10

Physiographic Regions of Nepal



The predominance of rugged mountainous areas has made the development of transport and communications extremely difficult in the northern region. A large part of the country is inaccessible by conventional transport and communications; essential goods and information cannot reach remote areas in a timely manner.

The most remote districts are also the poorest. They have additional burdens: because of the high transport costs and because they have to depend on outside economies, they are paying two to three times more for some essential goods. The costs of medicines for example, are often beyond the means of the poor in remote regions.

Demographics

Nepal is a land of diversity with marked multi-ethnic characteristics. Approximately 55% of the population comprises indigenous Nepali speakers. The country's social system is characterized by the centrality of the family with factors such as caste and religion having significant impact on the lives of the people.

Nepal has a population of 31,551,305 (July 2015 est.³) and an average growth rate of 1.79% (2015 est.).

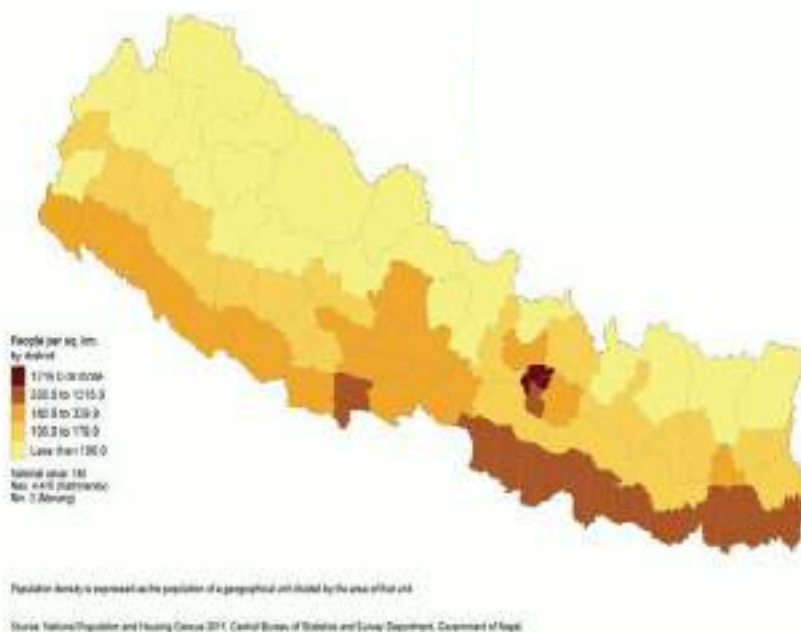
Of the total population, 1.8 million (6.7%) live in mountain, 11.5 million (43.2%) in hills and 13.3 million (50.1%) in Tarai.

As for the distribution of municipalities, of the 58 municipalities that existed until the territorial reorganisation, 31 are located in the Tarai, whereas 25 municipalities lie in the hilly region and only 2 are in the mountain region.

The average population density is 180 inhabitants per square meters, but with huge variations, ranging from 3 in Manang District to 4,400 in Kathmandu Metropolitan City (KMC).

The *Figure* below clearly shows where the most populated areas are located.

³ CIA World Factbook



Source: Central Bureau of Statistics

Figure Population Density per District

Nepal is predominately an agricultural country; domesticated livestock is one of the key livelihood strategies and offers unique set of economic opportunities through sustainable practices. The total land of Nepal comprises about 14.7 million ha. Out of the total land area agricultural land occupy approximately 27 percent. All the agricultural land is not used under crop cultivation, it is estimated that about 20 percent of the total land is under cropping.

In Nepal, the totals of 16 districts are delineated as Highhills, 39 districts as Midhills and 20 districts as Terai. The district delineation although does not follow watershed or ecological framework, the altitudinal framework offers some unique socio-ecological resemblance based on climatic, temperature and ethnic regime. The grouping of the districts is primarily based on administrative purpose rather than ecology and/or altitudinal range. The above realities offers uniqueness in terms agricultural practices in these climatic zones of Nepal practiced throughout the history. The animal husbandry in these climatic zones of Nepal is unique. Domesticated ruminants in Nepal are especially cattle (cow, buffalo and yak), domesticated goat, mountain goat, and sheep. The following section will help understand the animal husbandry of these animals in relation to three topographical region of Nepal.

3.2 Characteristics of Highhills (Mountains)

The Highhills (Mountains) is a high altitude with no clear-cut boundary with Midhills. The Highhills altitude ranges from 2,200 to 4,000 m. It includes 16 districts⁴ that occupies approximately 35 percent (5186, 181 ha) of Nepal. Agricultural land is only 9 percent in Highhills. Over 20 percent of the land categorised as rangelands and 24 percent as forestland. The population Highhills is approximately 8 percent of Nepal. The climatic regime is temperate to alpine with micro-environments supported by varied elevation, aspects, steepness of slope and solar radiation. The farming practiced is mostly subsistence with short growing season with little rainfalls at places. Due to the limitations of the crop growing season

⁴Districts include Taplejung, Sankhuwasabha, Solukhumbu, Dolkha Sindhupalchawk, Rasuwa, Manang, Mustang, Dolpa Mugu, Humla, Jumla, Kalikot, Bajura, Bajhang and Darchula.

and agro-climatic factor livestock play is a key aspect of local economy. The size of landholding is small and the average number of livestock per farm is about 7 and potato, buckwheat, and barley are staple crops. A transhumance livestock production system is practiced in this region. Chauris-yak, sheep and Chyangra-mountain goats graze on alpine rangelands in summer.

3.3 Key socio-ecological Concerns

The change in temperature regime and subsequent melting of glaciers and resulting into new lakes possible Glacial Lake Outburst are key concern in the mountainous areas. The rangeland degradation because of the invasive species is noted concern. The increased animal diseases also have affected livestock in the region. The prevalence of insects and diseases in farming is also affecting farming and including domesticated animals. The disease vectors are also affecting habitat and food selection to wild animals. While biodiversity context is overwhelmed with changes taking place in the region, the cultural transformation is also leading to degradation of social capital inherently tied to man and nature relationship.

Some examples of natural resources impact is increasing trend of sporadic river discharge damaging infrastructure (water supply, irrigation and roads). Sometimes water sources also come under threat of landslides and floods. The increasing uncertainty of river discharge, its impact into food production is directly affecting livelihood concern mainly food security and resulting into outmigration. When the water availability declines from the threshold level, it affects rural irrigation schemes, potable water, micro-hydroelectricity plants and water mills (pani ghatta). The drinking water scarcity, irrigation water supply system; water quality degradation are foundational social concern associated with environmental change.

Mountains offer unique biodiversity (e.g. water, aquatic species and highly resilience forest ecosystem). The change climatic regime or alteration in biodiversity can have shift in abundance and changes in phenology, physiology, behavior, and evolutionary changes in species-level level. The changes in structure, function, patterns of disturbance, and the increased dominance of invasive species is concerning in mid to high mountain range. Species can adapt, shift habitat, decline in abundance or disappear. Such unpredictability of incidences can have detrimental effect at the level of ecosystem richness as well as loss in gene pool. This process can be heavy impact into domestic livestock. Animals are very temperature responsive both in their mortality and adaptation. The mountains in Nepal play a critical role in the provision of water. The impact of climatic change on hydrology is likely to have significant repercussions, not only in the mountains themselves, but also in populated lowland areas that depend on mountain water resources for domestic, agricultural, hydropower generation, recreational and industrial purposes. Significant shifts in climatic conditions will also have an effect on social and economic systems in the region through changes in demand, supply and natural resources based systems. The livelihoods of most subsistence farmers would be at stake.

3.4 Need for Conservation

The likely positive effects of climate change such as increased growing seasons and faster growth rates can still be overwhelmed in context of livelihood of small land holding farmers by incidence of crops and livestock diseases, pests, and weeds. This can altogether change the dynamics of well intended intervention. The conservation is important because livelihood is depended in ecosystem services provided by biodiversity.

3.5 Characteristics of Midhills (Pahad)

The terrace hillslope farming is the characteristic of Midhills in Nepal. Midhills with its terrain is rich in biodiversity and ecological niche supported by subtropical and varied micro-climatic conditions with deep gorges of with numerous large, medium and small watersheds within elevation ranging from 800m to 2,400 m. The farm lots are considered small farms of less than 2 hectares with subsistence agricultural. However, these subsistent agriculture communities have received large international intervention for commercialization promoting the use of imported agrochemicals and seeds. The loss soil fertility and community level seed saving is observed sporadically in many Midhills location. Approximately 45 percent of populations live in this region. Midhills include 39 districts⁵(41 percent of the total land) and nearly 32 percent land is under agricultural activities. The Midhills offers 45 percent forest areas, 9 percent is rangelands.

Livestock is foundational to the agricultural practice of this region. The livestock consists of ruminants (cattle, buffaloes, goats and sheep). Historically, the number of livestock per household was 6. However, this trend is declining due to outmigration of youth and newer generation opting for other vocation than farming. The major cropping in Midhills is maize, millet or mustard and other new newly introduces cash crops such as ginger, cardamom and other location specific items. In and around the river valleys rice cultivation is a practice in land where river stretch offers irrigation feasibilities. Some horticultural related items are also increasing for last 2 decades. Subtropical forage crops like oat, vetch, berseem, stylo, molasses and others are commonly grown in some dairy pocket areas in recent years.

3.6 Key socio-ecological Concerns

Some of the key concern of Midhills of Nepal in relation to environment and human well-being is related to environmental change and agricultural and social transformation. Midhills climate range from subtropical to warm-temperate regime. Major cereal crops are paddy, wheat, maize and finger millet (*Eleusine coracana*) and livestock is another key agricultural context which includes cattle, buffalo and goats. The grazing, crop residues (from paddy, maize, millet, wheat, mustard, soybean and vegetables) and grasses from forest understory and fodder is main source of feedstock. Buffalos and cattle (Jersey and Holstein crossbreds) are increasingly stall-fed in some areas of Midhills. Buffalo is predominately used both for meat and milk, cow used for milk and oxen for plowing. There is a potential to increase feed production from cultivated land by including winter fodders such as oats. The feedstock

⁵Districts include *Panchathar, Ilam, Terthum, Dhankuta, Bhojpur, Khotang, Okhaldhunga, Udayapur, Ramechhap, Sindhuli, Kavre, Bhaktapur, Lalitpur, Kathmandu, Nuwakot, Dhading, Makawanpur, Gorkha, Lamjung, Tanahu, Kaski, Parwat, Syanja, Palpa, Myagdi, Baglung, Gulmi, Arghakhanchi, Rukum, Rolpa, Pyuthan, Salyan, Jajarkot, Dailekh, Surkhet, Achham, Doti, Baitadi and Dadeldhura.*

includes farm-produced rice bran, maize flour, barley, and oats. The cattle and buffalo are the source of milk, manure and draught. Sheep and goats are used for meat and fiber.

Midhill farming systems are mixed crop-livestock production that includes the use of both traditional farming land and forest resources. The available topography, wind and rainfall patterns, soils conditions and solar radiation offer unique livelihood conditions different than Highhills and Terai of Nepal and uniquely complex systems that incorporate traditional knowledge. Because of geographical terrain is rugged, transport, communications and livestock is one integrated whole agro-ecological conditions to form micro-farming systems. At the lower reach of the land water is available for irrigation that supports paddy production. The foundational issues of Midhills are soil degradation, declining soil fertility and land fragmentation. There is lack of interest for integration of horticultural and other farming practice with pastures and forage crops and declining inclusion of livestock in crop productivity, livestock rearing and soil enhancement. The monoculture farming is in many Midhills location is also livestock role in maintaining farming and alternative livelihood strategies through change in biodiversity and social transformation.

3.7 Need for Conservation

Increased crop diseases, declining forest and outmigration are major constraints for livestock and other associated issues. These issues are compounded by sporadic rainfall pattern leading to unexpected disaster events damaging infrastructure (water supply, irrigation and roads). These concerns are not easily addressable and time consuming because of Midhills; geographical challenges. In many case these conditions have led to food production decline and leading to out migration. Periodic low precipitations have affected rural irrigation, drinking water supply, micro-hydro and water mills and rangeland degradation are complex issues affecting overall conditions exceptionally the livestock. The Gorkha Earthquake of 2015 indicates that loss is livestock caused profound livelihood concern in areas affected in Nepal Midhills.

3.8 Characteristics of Flat Plains (Terai)

The Terai is a fertile alluvial plains of Midhills of Nepal which includes 20 districts. The elevation of this region ranges from 60m to 1,000m and occupies 23 percent of the total land area with approximately 50 percent is agricultural land and 45 percent is forest land others. This region is approximately 50 of the total population. Climatologically Terai is a tropical to humid subtropical with very high monsoonal rainfall (June - September). Terai is fertile landmass offering large varieties of grain production. However, livestock is also important aspect of farming in this region mostly buffalo, cows and goats used for various purposes including draft power, milk and meat. More than 90 percent tillage is done by bullocks and now trend is changing with introduction of large agriculture machineries for harvesting and plowing. Terai offers year round growing seasons. During rainy season of monsoon rice is cultivated and during the winter wheat, mustard, maize, tobacco, chickpea, lentil, finger millet, oats are grown. Terai is intensely cultivated part of Nepal's landscape after the eradication of malarial disease after middle of the last century. Livestock in this region is fed with crop residues, grains and forest and fodder grazing.

3.9 Key socio-ecological Concerns

Although chemical fertilizers have become increasingly important for the intensive cropping, manure is still the main source of nutrient replenishment and soil fertility maintenance. In many areas where massive deforestation has reduced the supply of firewood, dung is an important fuel.

Cattle, buffaloes and goats are the main grazing livestock. The predominant system of livestock rearing is grazing. Compared with the mid-hills, there is less grazing land and forest; so more crop residues are fed and the amount of stall-feeding relative to grazing is greater in the Terai than in the Midhills. Although there is a similar shortage of feed in winter and before the onset of the monsoon, most productive and draught livestock are well looked after and others survive on the available grazing. Livestock generally grazing on roadsides, uncultivated land, forest (near the Siwalik), on cultivated land after harvest, and on fallows; crop residues (paddy, wheat, maize, millet, cotton, sugar cane tops, lentils). Cultivation of fodder oats, berseem, and oat and vetch mixtures has become popular in dairy pockets. Home-produced rice bran, wheat bran, maize, gur (evaporated sugar cane juice), broken pigeon pea and salt are the major feed ingredients, alone or in combinations with roughages like rice and wheat straw. Cattle generally graze, but are also stall-fed on crop residues and forages.

3.10 Need for Conservation

The *Terai* is intensively and extensively used for agriculture purposes. The recent trend is changing of land use pattern. The haphazard urbanization as well as increased land subdivision in traditionally cultivated land is key concern. The use of agrochemicals can also have detrimental impact to the livestock in the region because of nutritional concerns of farm animals. Quality and availability of feed resources is key concern for the future livestock and associated factors. As *Terai* is mainly tropical to subtropical climate regime, the extreme events and likely unforeseen impact from climate change can lead to possible disease outbreak can be potential hazard for both livelihood and the environmental concern of the area.

3.11 Sustainable Development Agenda of Nepal

Nepal's unique and varied environmental condition and need to reconcile development and conservation requires contextual sustainable development practices. The changing socio-ecological conditions and from signing of the international treaties Nepal also made some specific policy formulations for sustainable development. The Sustainable Development Agenda of Nepal 2003 (SDAN) by the National Planning Commission states that it is a process to alleviate poverty and simultaneously redress social, economic, cultural and ecological aspects of future generation. The factors affecting sustainability are vulnerabilities from natural and climatic changes; forest degradation, biodiversity decline in all physiogeographic areas of Nepal. The SDAN prioritized economy, health, population and settlement, forest ecosystem and biodiversity, education, institutions and infrastructure, and peace and security as the main concern areas for sustainable development.

In order to address sustainability vision land use policy is developed that address triple bottom lines by appropriate utilization of land by classifying the land based on capability, usability and necessity. In order to achieve these goals, the land use plan is expected to be completed

within 2025 by the government. The land use law is expected to be formulated by 2017. The broad objectives of the policy are to classify land use for the following purposes.

1. To maximize utilization of land
2. To conserve and manage land
3. To develop land division and improve urbanization
4. To maintain development and environment
5. To preserve valuable lands

3.12 How do we Address them?

Systemic intervention requires problem structuring (scoping) based on both qualitative and quantitative information. The case studies of elsewhere indicate that such strategies even under the challenging conditions facing developing regions including post civil war context, the strategies in pragmatic ways can make a real difference on the ground and foster more sustainable trajectories. Research to date indicate that various factors facing Nepal and similar developing regions and their differing cultural contexts can sometimes even lead to highly innovative ways of applying these strategies. Similar strategies have been used in complex socio-ecological context including contentious situations to help address the enormous sustainability challenges facing the countries endowed with ecological capital with multiple sustainable challenges.

The following strategies could be effective mechanism to understand and to manage Socio-ecological System (SES) of the region of Livestock Sector Innovation project

1. Adaptive management strategy (“learning while doing”)
2. Engagement and Integration of Knowledge (“local and global”)
3. Facilitate self organization (“understand feedback”)
4. Incorporation of lessons learned from the past projects
5. Setting boundary condition for feasible intervention

The above strategies will address concerns highlighted on key areas socio-ecological factors as broadly discussed in references in rural interventions. Can future demand for livestock products be met through sustainable intensification in a carbon-constrained economy?

Some indications have been given above of the increasing pressures on natural resources such as water and land; the increasing demand for livestock products will give rise to considerable competition for land between food and feed production; increasing industrialization of livestock production may lead to challenging problems of pollution of air and water. The literature shows climate change is going to be seen in livestock and mixed systems in developing countries where people are already highly vulnerable; the need to adapt to climate change and to mitigate greenhouse emissions will undoubtedly add to the costs of production in different places. A second over-arching uncertainty is, will future livestock production have poverty alleviation benefits? The industrialization of livestock production in many parts of the world, both developed and developing, is either complete or continuing apace. Research also suggests in many cases where the poor have been disadvantaged by the industrialization of livestock production in developing countries, as well

as highlighting the problems and inadequacies of commercial, industrial breeding lines, once all the functions of local breeds are genuinely taken into account.

The future role of smallholders in global food production is very high despite its contribution is heavily undermined by large institutional base. Smallholders currently are critical to food security for the vast majority of the poor, and this role is not likely to change significantly in the future based on key literature and citing the market crisis of 2008 on food security. Do we have apparatus to address increasing industrialization of livestock production may mean that smallholders continue to miss out on the undoubted opportunities that exist. Need for moving toward collective and community control on governance of food commodity chains.

Summary of Environmental and Livestock Concern

1. Need for re-integration of environmental and social concern in overall livestock activities.
2. Need for revising and re-integrating livestock sector plan, policies, legislations, guidelines, directives in context of changing environmental and social concerns.
3. Need for effective institutional oversight by relevant Ministry of Local Development for effective livestock and its integration to social and environmental factors.
4. Need for addressing social and environmental effects mainly from loss of natural habitats, agricultural land expansion, increased built-environment, wetland degradation and filling, forest depletion, soil erosion, declining soil fertility and improper use of agrochemicals.
5. Need for curbing disasters effects through good practices and resilience. For example, forest depletion brings about a chain of the environmental negatives such as landslides, soil erosion, biodiversity loss, floods, soil degradation, and reduction in water flow from upstream areas. The adverse effects of forest loss by livestock grazing.
6. Expansion of cultivation in ecologically sensitive upland areas caused increased erosion and quickly undermine productivity subsequently increase sedimentation downstream.
7. Need for addressing soil quality issues in Midhills and Terai. The overuse of agrochemicals and lack of organic matters in soil is key soil degradation in some areas.
8. Commercial monoculture farming has increased overuse of agrochemicals and subsequently affecting water quality degradation aquatic. Livestock is affected by feedstock loaded with chemicals. Large quantity of insecticides, fungicides and pesticides in commercial crops are some examples. The non-compliance of application of agrochemicals is affecting the food chain of livestock. The use of expired pesticides and hazardous chemicals is urgent for control. The proper disposal and management is also other concern.

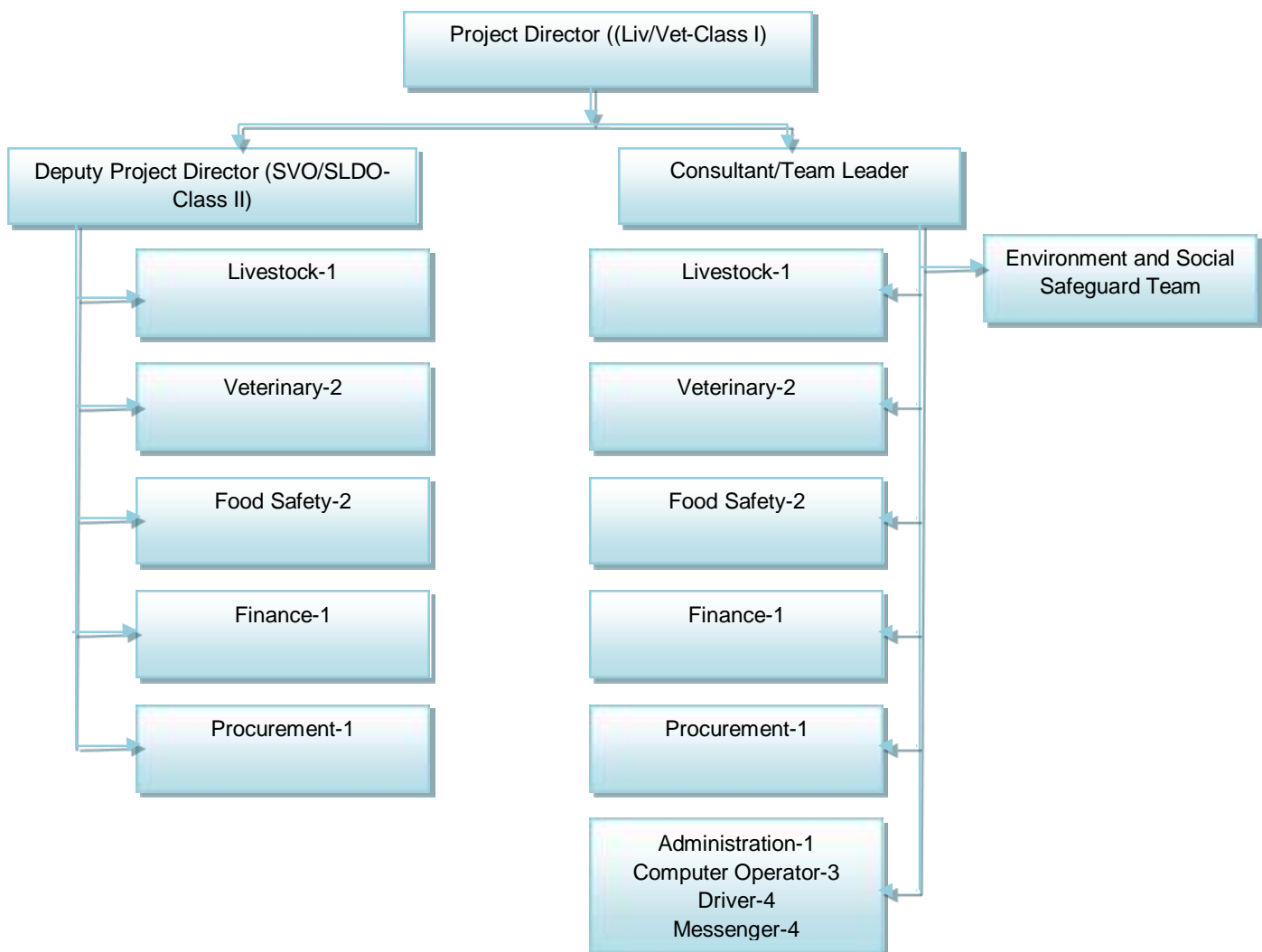
9. Both forests and grasslands have witnessed declining productivity. There is shortage of livestock feed. In general, the lower productivity of Nepalese. Livestock productivity is also mal nutrition in animals impacting into the productivity in milk, meat and wool. Quality of water for livestock and processing milk products is also key concern in heavily monoculture areas of regions.
10. Incidence of E-coli in dairy processing units some parts of the country increasing and ruminant shelters is not environmentally unfriendly.
11. The issues of zoonotic diseases and still prevalent used of DDT, BHC and other chemicals are socio-ecologically concerning.
12. Arsenic contamination in water in many areas of *Terai* has brought about a major socio-ecological. The residual effects of Arsenic crops are major social concern.
13. The small-scale open slaughter houses scattered in the urban centers are environmentally concerning. Offal residues dumped into municipal drainage also increases disease vectors. There is need for disease monitoring of animals for slaughter and the meat inspection for its quality.

Chapter 4

Project administrative structure, management and implementation

4.1 Formation of PIU at Central, and District Level Officer

The organizational structures proposed for NLSIP is highlighted below. The structure shows the project director as the head of NLSIP. Under the project director, the two team lead by the Deputy Project Director and Consultant Team Leader. The team leader will basically lead the technical team in which livestock, veterinary, food safety, finance, procurement and administrative experts/staff has been proposed. Similarly from deputy project director (DPD) who will be SVO/SLDSO class I officer will lead the 5 units namely monitoring and evaluation, planning, finance, procurement, and administration. Experts and officers shall be deputed to these units by DPD.

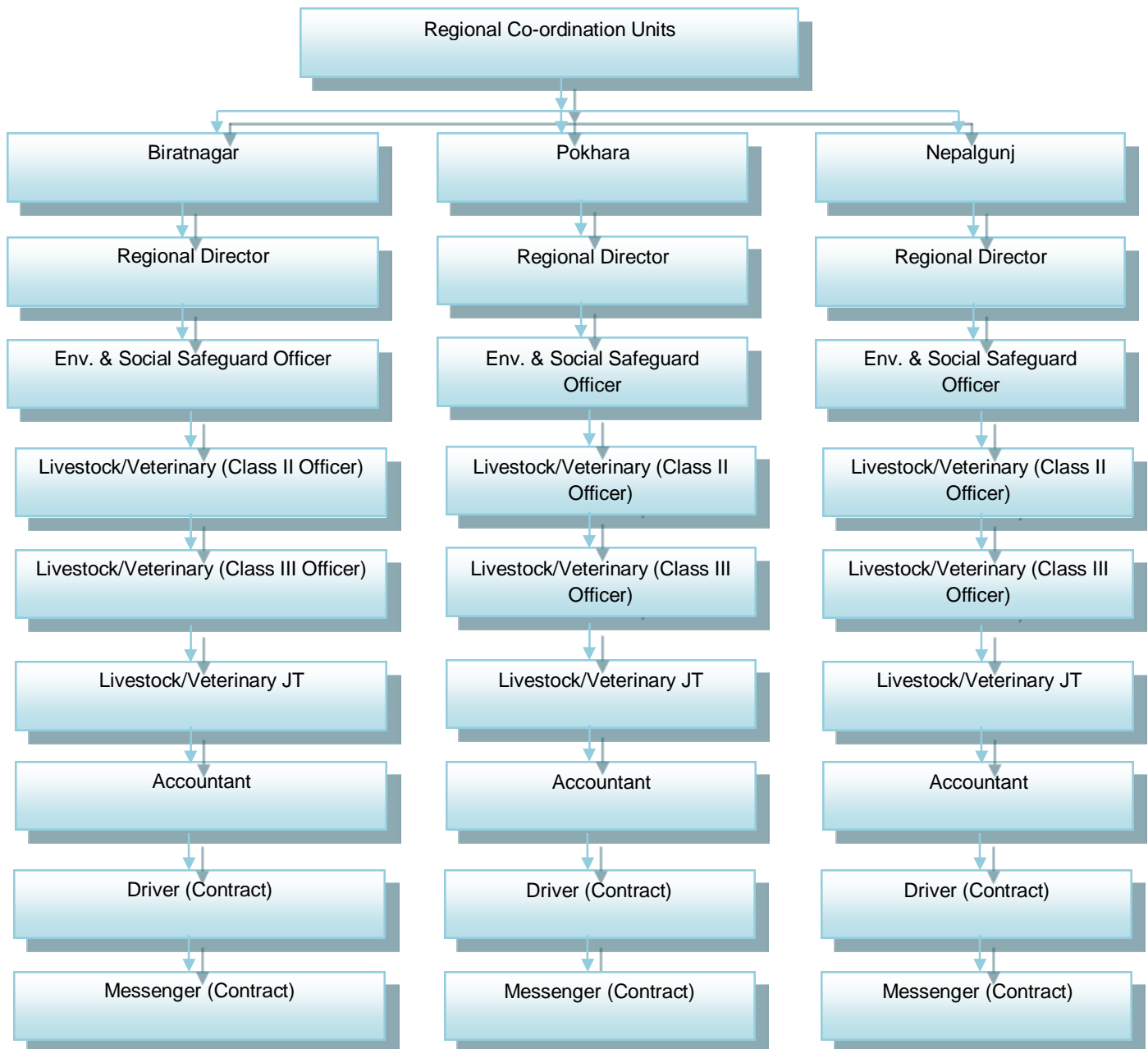


The PIU will be responsible for planning, budgeting, selection of final schemes/activities, preparation of final reports, liaison with the MOLD and the World Bank, , trainings and capacity building of regional coordination units. The PIU will be responsible to prepare ToR of regional director, close monitoring and supervision.

The ESMF shall be finalized by PIU, and disclose through web site of MOLD and the World Bank. All the soft and hard copies of the reports shall be made available to the regional offices.

Since the ministry is newly formed and there are several activities which triggers environmental and social safeguard requirements, environmental and social safeguard expert (intermittent) has to be envisaged in the project structure who will work directly with the consultant team leader of the project. The environmental and social safeguard expert will assist the team leader, project director and regional directors in preparing EMP, development and implementation of mitigation measures, compliance and impact motoring, trainings on environmental and social safeguards etc.

Similarly, the project has envisaged coordination units in 3 regions namely Biratnagar, Pokhara, and Nepalgunj. Each unit will be headed by the regional director and under him Livestock/Veterinary officers, junior officers, account and administration officers. The proposed organization chart of regional coordination unit is shown below.



4.2 Technical Support for Implementing Environmental and Social Safeguard Measures in NLSIP

The environmental and social safeguard consultant will be recruited by the NLSIP and work directly under the project director to ensure the compliance with environmental and social safeguard measures. The consultant will introduce the environmental and social safeguard requirements in livestock sector, train the livestock experts in areas of environmental and social safeguard. The consultant shall provide "on the ground" training to prepare site specific EMP and to fulfill the requirements of ESMF for NLSIP. The roles and responsibilities of personnel engaged in ESMF compliance are as follows

S.N	Title of Person	Roles and Responsibilities	Remarks
1	Project director	<ul style="list-style-type: none"> • Selection of environmental and social safeguard consultation • Ensure compliance with ESMF 	

		<ul style="list-style-type: none"> • Quality Control/Quality Assurance on ESMF/EMP • Finalization of report, correspondence with WB 	
2	Environment Consultant (Full time) and Social Safeguard Consultant (Part time) for PMT	<ul style="list-style-type: none"> • Assist the project director for ESMF compliance • Assist the regional and recipient on preparation of site specific EMP, provide training and technology transfer to recipient entity, conduct IEE/EIA of project (as deemed required) • Provide overall safeguard related training to regional staff, integrate environmental and social components in project cycle, follow up and monitoring. • Prepare monthly, annual environmental report, 	
3	1 Environmental Officer (at each regional level)	<ul style="list-style-type: none"> • Integration of ESMF compliance at regional projects, support to regional director and other officials in ESMF implementation • Work closely with NLSIP recipient in filling up environmental checklists, forms, formats, preparation of required documents • Perform compliance monitoring, impact monitoring, ensure the site specific mitigation • Provide environment and social safeguard related trainings and • Preparation of monthly, bi monthly, annual report summarizing environmental and social report of projects. 	
4	DLSO	<ul style="list-style-type: none"> • Compliance with ESMF, preparation of EMP, site specific monitoring 	DLSO Or person responsible for oversight activities on the ground
5	Monitoring Expert	<ul style="list-style-type: none"> • Monitoring of compliance of ESMF and EMP by the MoLD or third party 	

4.3 Project Review and Approval Process

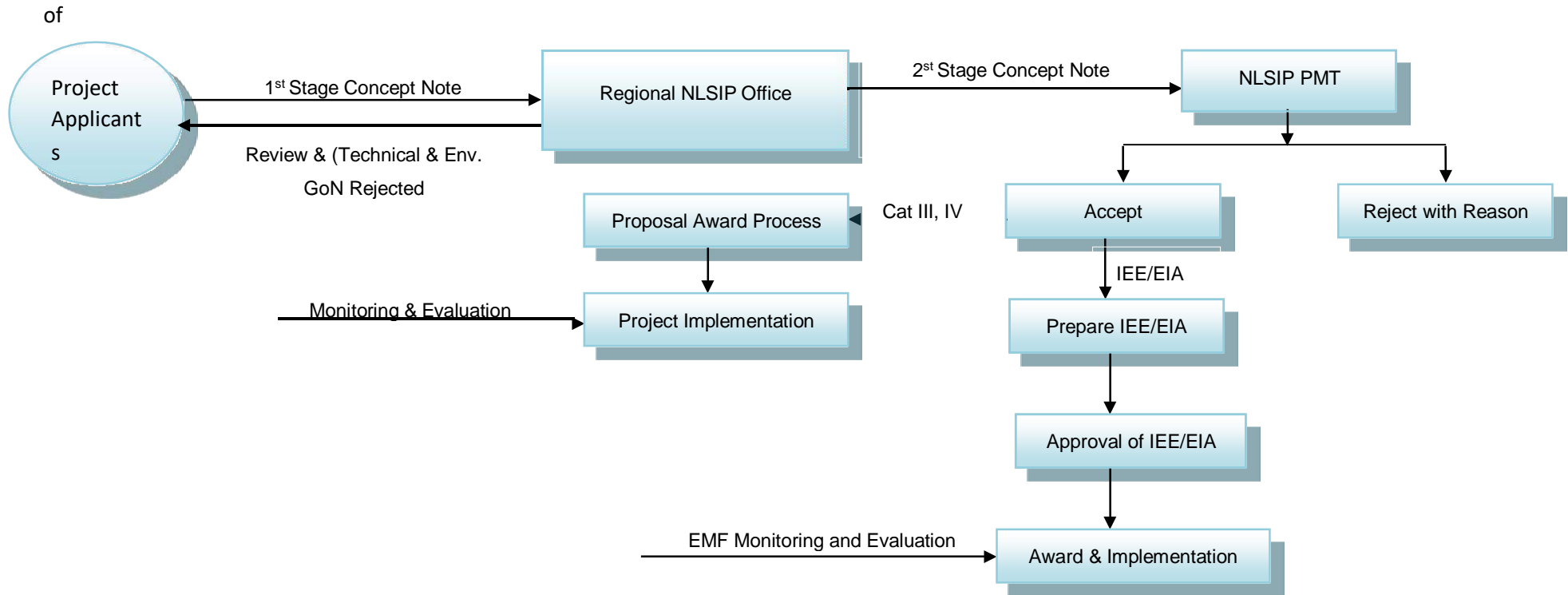
The NLSIP value chain participants will submit their concept note/first cut proposal, in a standard format to the district livestock services office or regional livestock service office.

The unit at RLSO responsible for NLSIP will review the request application and forward to PMT along with recommendations. During this process RLSO will complete all the technical and ESMF requirements. The regional ESMF officer shall review and provide necessary recommendations. Then the regional office shall forward the concept note along with recommendations to PU. The NLSIP at RLS will reject the proposal/concept note which falls in category I of the project or not meeting the criteria.

Review of Proposal and PMT: The PMT shall develop screening criteria for the proposal received from the region. The criteria for the proposal and other details shall be pre disseminated to the region. For the successful recipient, the PMT through RLS will issue the second letter for submitting the full proposal in a prescribed format. The environmental officer of RLS will assist the likely recipient in format and other details of the proposal. The PMT will review the proposal and successful proposals will be awarded. The applicant will sign a project with NLSIP which includes ToR, including the ESMF requirements.

The detail step wise process for the review and approvals are highlighted in the flow diagram below.

PROCESS AND APPROVE FLOW DIAGRAM



4.4 Consultation and Communication Strategy Framework

NLSIP financed subprojects will involve beneficiaries from a large number of people engaged in livestock activities, processors, traders, and entrepreneurs from public and private sector. Various groups of people will be mobilized for wide range of activities such as developing dairy enterprise, establishment of linkages of rural and urban markets, meat and dairy processing facilities etc. The properly designed and developed consultation and social mobilization guidelines to address multiple sectors' requirements is essentially a demanding task.

Community consultation process to make the potential beneficiaries participate in proper decision-making, and giving them opportunity for broad-based community involvement in the NLSIP

Because of this reason the project has considered community consultation and communication and pivotal role in this project. Community consultation protocols such as stakeholders mapping, consultation schedule, and information disclosure are prepared. Well-designed information, education and communication strategies which can help participation of stakeholders are developed. Activities for social mobilisation of community at different phases of project are prepared.

4.4.1 Public Consultation

4.4.1.1 Modes of Consultations

A range of formal and informal consultative methods shall be carried out for all NLSIP supported projects including, but not limited to: focus group discussions (FGDs), public meetings, meeting with user's group, Key Informant Survey, community discussions, and in-depth and key informant interviews; in addition to surveys. Consultations will be held with special emphasis on vulnerable groups. The consultation shall be continued from the pre planning phase, planning phase, feasibility phase, construction and operation phases of the project. Encouraging stakeholders' participation in consultations informs the public and serves as avenue for the public to express their opinion on priorities which the Project should address. During the consultation the project deputy director/environmental and social safeguard specialist (at center, PMT), and regional director/environmental and social safeguard specialist (at region) shall disseminate the environmental and social safeguard requirements for the project. It is to be noted that for project specific IEE/EIA, consultations are also required at different stages.

The key stakeholders to be consulted during project preparation, and program implementation includes:

- All APs, including vulnerable households;
- Project beneficiaries;
- Host populations in resettlement sites (if any);
- Political party representatives, community leaders, and representatives of community based organizations;

- Farmers group, Farmers cooperatives, Private firms, Local NGOs;
- Officials of municipalities and relevant government agency representatives.

Consultations with APs during RP and IPP preparation will ensure that views of APs on compensation and resettlement assistance measures are fully incorporated while consultations conducted during RP implementation will identify necessary assistance required by APs during rehabilitation. Continuing involvement of those affected by sub-projects is necessary in the resettlement process. The MoLD will ensure that APs 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 sub-project. This will be done particularly in the case of vulnerable APs, who will be encouraged to choose options that entail the lowest risk. This exercise will be conducted throughout the sub-project—during preparation, implementation, and monitoring of NLSIP supported project results and impacts.

4.4.1.2 Information Disclosure and Dissemination

For IEE/EIA studies, the information disclosure and dissemination requirements shall follow GoN EPA/EPR requirements. The public notifications, disclosures, and public hearing shall follow the GoN requirements.

Summaries of the ESMF will be made available in Nepali language to the offices and recipient parties, APs, local NGOs, and public offices in the project site shall obtain a copy of ESMF from the PMT. Copies of these documents will be provided to any requester by charging the photocopy cost. The draft and final ESMF will be disclosed in the websites of MoLD and the World Bank and made available to stakeholders. Information dissemination and consultation will continue throughout program implementation.

For all projects under NLSIP, information will be disseminated to beneficiaries and APs at various stages. In the initial stage, the regional office will be responsible for informing potential stakeholders /Affected parties/persons (APs) and the general public of the project about the land acquisition requirements through leaflets and publication in local media outlets and newspapers. NLSIP with support from regional office will conduct consultations and disseminate information to all beneficiaries during these initial stages to create awareness of the project.

In the implementation stage, the NLSIP regional offices will provide information to beneficiaries regarding the environmental requirements and criteria to be met by the project in appropriate mode and means of communications. Basic information such as project location, impact estimates, entitlements, safeguard requirements and implementation schedule will be presented to stakeholders. These will enable stakeholders to provide inputs on the resettlement process, prior to award of civil work contracts.

4.4.1.3 Consultations during Preparation of ESMF

Experts' consultations were conducted by the study team members for the preparation of ESMF .The main objectives of the consultation were to disseminate information about ESMF requirements under NLSIP .Similarly, Consultation meetings with MOLD, WB were conducted in a regular basis during the preparation of ESMF. The consultation was mainly focused on contents of ESMF, environmental and social screening process, likely impacts and mitigation measures, and capacity building measures for institutions involved in NLSIP.

4.4.1.4 Modes of Future Consultations

A range of formal and informal consultative methods will be carried out for all including, but not limited to: focus group discussions (FGDs), stakeholder's meetings, community discussions, and in-depth and key informant interviews; the key stakeholders to be consulted during sub-project preparation and program implementation includes:

- Project beneficiaries;
- Information dissemination about NLSIP and ESMF to head of institutions,
- Political party representatives, community leaders, and representatives of community based organizations at central level and regional level, NGOs, Cooperative groups, farmers group, related federations. associations etc
- Relevant government agencies (Central and regional level)

S. N	Stages of Project	Stakeholders/parties to be consulted	Particulars of consultation	Remarks
1	At planning stage and preparation of ESMF	NLSIP, World Bank, Experts, livestock and veterinary experts at centre, regions, Head of livestock related associations,	Contents of ESMF, Implementation modality of ESMF	To obtain views, ideas concerns about integrating EMF in NLSIP
2	After disclosure of ESMF	Recipient institutions prior implementation of ESMF	Regarding the approach, timing of programs, M &E	Any site specific requirements (if felt issuing/overlooked/irrelevant) could be addressed
3	During the program implementation	Recipient institutions, political party representatives, representatives for community organizations	Obtain comments and feedback on ESMF implementation	Any foreseeable improvements that are felt required in ESMF could be done at project specific level. Twice a year, project related information, progress will be disseminated to the stakeholders and their feedback were noted for gradual improvement. Such concerns could also be addressed through project specific ESMP.
4	Annual program evaluation/third	Recipient institutions and related stakeholders	Compliance with ESMF	The report includes compliance with ESMF, The gap in ESMF

	d party monitoring			Implementations of recommendations for improvement.
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4.5 ESMF Disclosure and Dissemination

The ESMF disclosure and dissemination stages in NLSIP are highlighted below.

S.N	Stages of Project	Information dissemination approach and targeted audience	Remarks
1	Preparation of EMF for NLSIP	Disclosure through print and electronic media. Uploading in to website of MOLD and the World Bank	A copy of ESMF shall be providing to requested person/parties who are interested to review it.
2	Prior implementation of NLSIP	Disseminated to all the stakeholders	
3	During NLSIP implementation Stage	The experts/firms/contractors recruited through NLSIP will disseminate the components/aspects of ESMF to stakeholders including local community local political representatives	
4	Monitoring and Evaluation Stage	The ESMF compliance and need for improvements will be shared by NLSIP to recipient institutions along with disclosure of M&E report	Based on finding of M&E report The process of participatory monitoring and evaluation (M&E) is advisable. Beneficiary committees can be formed for monitoring and supervision of the sub-project works/activities of NLSIP. The process should also ensure that the project benefits have properly reached the affected people and the execution of the project sticks its original designs so that social compliance is achieved.

			<p>Following tasks are essential in this stages:</p> <ul style="list-style-type: none"> ▪ Ensuring the implementation of the ESMF and timely delivery of entitlements (Consultation Role) ○ Ensuring that the ESMF is implemented according to a designed plan ▪ Reporting (Information Role) ○ Reporting is an important aspect of the M&E process. Periodical reporting is important to generate information on the progress of the work undertaken. The status of the implementation of the ESMF and progress has to be documented
5	During Reporting Stage	The details of ESMF compliance in NLSIP and related aspects are prepared and sent to recipients institutions	Based on findings of annual project report of NLSIP

During the preparation of ESMF, the consultations were held with the central and regional level stakeholders, the names of participants and place of consultations are included in annex-2. The pictorial highlights of consultative workshop is included in annex 3.

4.6 Grievances Redress Mechanism

It is expected that through a participatory process, acceptance of the projects and grievances can be minimized. However, it is necessary to establish an effective grievance redressed mechanism to address complaints/grievances related to environmental and social issues that may arise. Any grievances and objections retarding the environmental concerns of the project will be referred to the project Grievances Redress Committee (GRC).

An effective grievance redressal mechanism shall be established to address complaints/grievances related to environmental and social issues that may arise. Any

grievances and objections regarding the social aspects of the project will be referred to the project Grievances Redress Committee (GRC). The project GRC will be formed at PMT and at the regional levels. The composition of the GRC at PMT level will be:

- a) Project Director, NLSIP- Chairperson
- b) Environmental and Social Safeguard Specialist, PMT/NLSIP- Member (1)
- c) Representative from MOLD- Member (1)

Similarly, grievance redress mechanisms for affected community/persons will be established with adequate representation of affected persons /community. The grievances will be redressed at the local level in a consultative manner and with full participation of the affected households, or their representatives, along with project officials and local government representatives.

The Grievance Redress Committee (GRC) shall be formed at each regional level which comprises of :

- 1. Regional Director, NLSIP-Chairperson
- 2. Senior Officer, NLSIP, Member (1)
- 3. Representative from stakeholder- Member (1)

Any affected family or person can approach the GRC regarding issues related to environmental and social issues, resettlement and rehabilitation not addressed by competent authority, compensation for affected structures, livelihood impacts, temporary impacts and impacts during construction. The affected persons can register their grievances at the complaint cell established at regional offices. All cases will be registered, categorized and prioritized by the GRC at the regional office. GRCs will meet regularly to discuss the petitions submitted by the people/community.

The GRC at regional office shall document all complaints received, the action taken on each of them and send a report in a quarterly basis to PMT which shall also be communicated to the development partners through progress report, monitoring reports etc.

If grievances are not settled at the regional offices, then it will be forwarded to the PMU.

Chapter 5

Environmental and Social Safeguard Provisions in NLSIP

The Environmental and Social Management Framework (ESMF) will be used during project implementation. The ESMF will provide clear steps, processes, procedures and responsibilities including various tools.

The ESMF will be followed during project implementation for ensuring environmental and social integration in the planning, implementation, and monitoring of project supported activities. For ensuring good environmental and social management in the proposed project, the ESMF will provide guidance on pre-investment works/ studies (such as environmental and social screening, environmental and social assessment, environmental and social management plans, etc); provide a set of steps, processes, procedures and mechanisms for ensuring adequate level of environmental and social consideration and integration in each investment in the subproject-cycle; and describe the principles, objectives and approach to be followed to avoid or minimize or mitigate adverse impacts. Specifically, ESMF has the following:

- Environmental and social Issues that need to be considered while planning and design of different type/categories of (annex-4) includes environmental issues to be checked/verified during project planning
- Environmental and social screening checklists/formats: criteria, process, procedures, steps, time, and responsibility as well as necessary tools (format, checklists etc) for environmental screening of the investment under the proposed program. (Annex 5)
- Environmental Assessment guidelines. Steps, process, and procedures to be followed in different levels of environmental and social assessment (limited or full assessment). This suggests ways to integrate findings of environmental and social processes with the activity planning and implementation processes.
- Sample activity level Environmental and Social Management Plan. The NLSIP activities which triggers environmental and social safeguard requirement of GoN and the World Bank should present Environmental Management Plan of sample activity which identifies foreseeable potential environmental and social impacts of the activity and recommends the appropriate mitigation/management measures to eliminate, minimize, or manage these environmental impacts. Format and sample EMP is shown in (Annex- 5 and 6)
- Project level environmental and social monitoring framework. EMF monitoring shall be integral part of overall project monitoring system. This also includes mechanism to measure the indicators.
- EMF Implementation: This will define specific roles, responsibilities, and authority of involved institutions (their environmental units/ focal points) with regard to environmental and social management in the proposed project

- Capacity strengthening Measures: Drawing from the capacity assessment and gaps identified, the ESMF includes a, measures for strengthening environmental and social aspects management capacity of the involved parties in accordance with their role and functions.
- Consultation and Information Disclosure . Within the overall objective of efficient and effective environmental and social management in the proposed project, a consultation and information disclosure framework is proposed. This provides guidance on appropriate ways of holding consultations: whom to consult, why and how to consult, and what after consultation.
- Disclosure: The EMF will be disclosed at MoLD, and World Bank web site, and widely disseminate to the DLSO and other stakeholders through orientation, and print media.
- Environmental codes of practices. Define good practices and bad practices (do and do not do) for most likely types of activities/ subprojects.(Annex 7)

Environmental and social considerations should be envisioned right from the stage of project identification. In general, projects are identified based on the technical requirement and need assessment, so the project selected without environmental and social considerations can lead to serious environmental and social problems, creation and even failure of project sometimes. While identifying projects or collecting demands from stakeholders, possible alternatives should also be foreseen and noted. The NLSIP hwill collect the information on environmental and social setting; possible beneficiaries and possible generally foreseen environmental and social impacts of each alternative should also be taken from the proposers or demand providers. The proposers demand providers and general public should be made aware of the environmental and social consequences of project implementation and should be requested to choose environment and socially acceptable projects right from the project identification to avoid environmental problems at later stage in NLSIP.

5.2 Process for Managing Environmental Impacts/Issues

The ESMF for NLSIP is prepared dealing with avoidance and minimization of the likely adverse impacts for the project as a whole.

ESMF proposes measures to minimize and mitigate environment and social impacts through all stages of the project. Proper integration of findings from the safeguard studies and public consultation process into the planning/decision-making process and engineering outputs (design and bidding documents) would help in avoiding/reducing the environmental and social issues that may arise due to the project.

To ensure that sub-projects do not cause any significant adverse impacts, the identified propositions will undergo an environment screening process. In case significant impacts are likely to occur, the sub-project/s in question will require environmental assessment and preparation of mitigation/management plans. The key steps for managing any potential adverse environmental impacts are outlined in the table below:

Table: Key Steps for Managing Environmental Issues

Stages in Sub-Project Cycle	Steps in the Assessment Process
Sub-Project Identification & Pre-Feasibility Studies	<p>Environmental and social screening to determine key issues and appropriate selection of site.</p> <p>Field verification to determine whether exclusion criteria have been adhered to.</p>
Project Design (for sub-projects that do not require detailed assessment)	<p>Consultation with key stakeholders</p> <p>Preparation of Environment and Social Management Plan for sub-projects not requiring detailed assessment (Category II projects)</p> <p>Integration of the ESMP into the Bidding Documents</p>
Project Design (for sub-projects that require detailed assessment)	Initial Environmental Examination (IEE)/EIA: Assessment of environmental impacts to determine level and scope of EA, Social Impact Assessment (SIA)
	Baseline Data Collection: Identification of environmental and socio-economic conditions.
	Environmental Impact Prediction/Assessment: Assessment of impacts in terms of characteristics such as magnitude, extent, duration and significance in quantitative terms as far as possible; describe all reasonable alternatives, including preferred and 'no project' options.
	Mitigation Measures Design: Design to avoid, reduce and minimize adverse environmental and social impacts and enhance beneficial impacts
	Public Consultation and Participation: At various stages in the assessment process to ensure quality, comprehensiveness and effectiveness of the stakeholders' participation and to adequately reflect/address their concerns.
	Preparation of Environmental and Social Management Plan (EMP): Determination of specific actions to taken during engineering design and construction stages to minimize or mitigate negative impacts and enhance the positive impacts.

Stages in Sub-Project Cycle	Steps in the Assessment Process
	11. Report Preparation: Summary of all information obtained, analyzed and interpreted in a report form;
Sub-Project Approval	<p>Review and Approval of Technical and Safeguard Report/s: Review of report/s to assess if all possible issues have been adequately addressed to facilitate the decision-making process- decide if project should proceed, or if further alternatives must be examined or totally abandoned.</p> <p>Integrate ESMP into engineering design. bidding documents, NLSIP project cycle</p>
Implementation	<p>Orient / train the stakeholders, contractors and other field staff on ESMF requirements.</p> <p>Supervise, Monitor and Regularly Report on ESMP compliance (if contractor is used, environmental and social clauses should be part of bidding document and monitoring by the supervising engineer/or MOLD/or by other related entity should be mentioned)</p> <p>Determine clean-up and site rehabilitation before Completion and Final Bill Payment</p> <p>Take corrective actions, as and if necessary</p>
Post-Construction	Maintenance and Operation to include ESMP compliance of post-operation stage

5.2.1 Environmental Screening

Every sub-project proposal to be funded under the NLSIP is subject to environmental screening process before it is selected for inclusion in the project. The screening process establishes the level of environmental assessment required and application of exclusion criteria given above. The screening process intends to identify relevant environmental concerns as well as suggest any further investigation and assessment is necessary. The environmental and social expert of PMT formed at MOLD will perform the environmental screening of the sub project. During the initial stages of the project interventions, the environment and social safeguard expert of grant facility administrator will assist the expert as and when required.

5.2.2 Purpose/Objectives of Environment and Social Screening

Primarily, the environmental and social screening exercise will be undertaken to determine the key environmental issues/concerns and the nature and magnitude of the potential

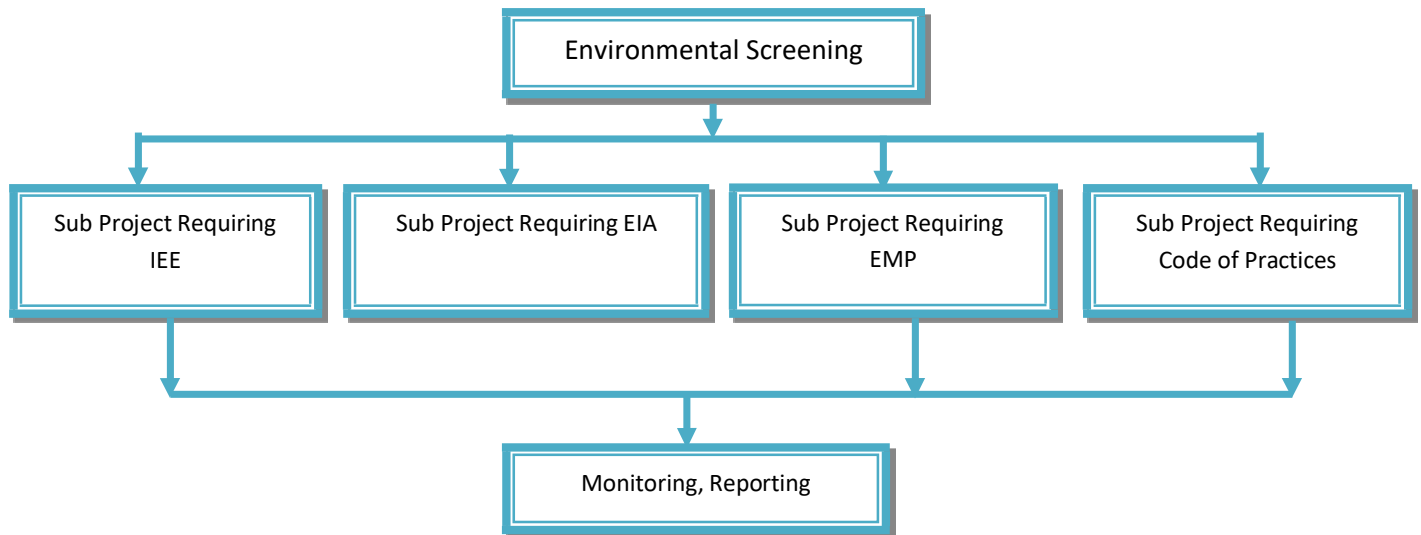
environmental impacts that are likely to arise on account of proposed project/sub-project interventions. The major or key environmental and social issues to be identified will be determined by the type, location, sensitivity and scale of the project/sub-project. The results/findings from this exercise are/will be used to determine:

- the need for detailed assessment
- extent and type of Environmental and Social Assessment (ESA) requirement

The screening result will also be an important input for analyzing the 'feasibility' of the project/sub-project along with engineering/economics and social criteria.

Sub-project screening will be done against the prevailing legal to determine whether the sub-projects are subject to GoN's IEE, EIA or No-EA (or for that matter to determine the need for conducting SIA or RAP for social issues, or project requiring only ESMP or best code of practices) process or whether the sub-project should not be included at all for funding under NLSIP if they are found to fall under the 'negative' list or 'exclusion' criteria set forth in this ESMF.

Flow of Environmental Management for NLSIP

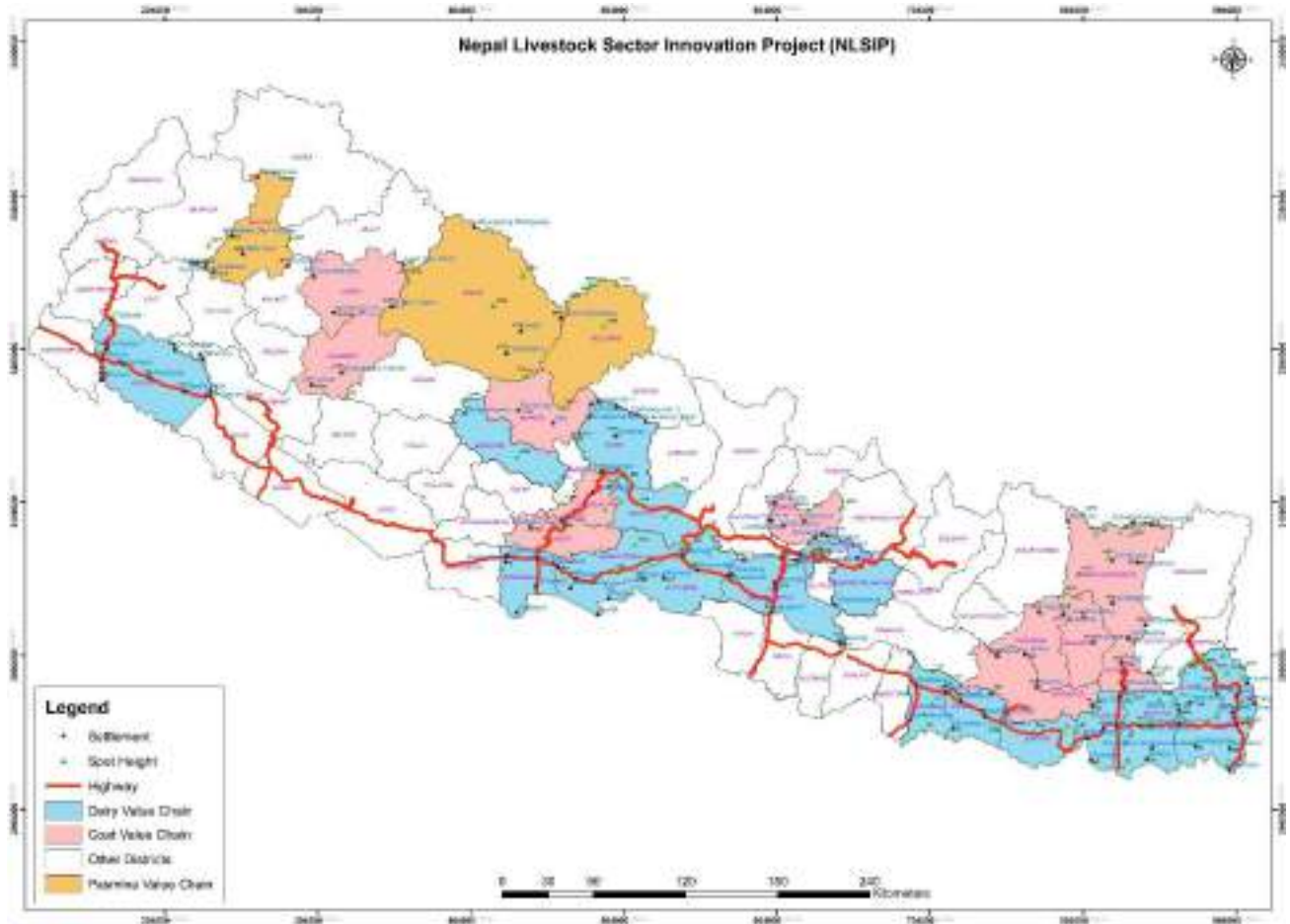


Chapter 5

NLSIP Activities, Screening Process, Impacts, and Risks

5.1 NLSIP Districts

MoLD has selected districts based on the three value chains; they are Pashmina value chain, goat value chain, and dairy value chain. The districts selected under each value chain are elaborated below.



Districts Selected for Pashmina Value Chain:

Bajura, Dolpa, Mustang

Districts Selected for Goat Value Chain

Jumla, Jajarkot, Myagdi, Palpa, Syangja, Nuwakot, Udayapur, Khotang, Bhojpur, Dhankuta, Sankhuwasabha

Districts Selected for Dairy Value Chain

Kailali, Baglung, Kaski, Tanahu, Nawalparasi, Rupandehi, Chitwan, Makwanpur, Kathmandu, Kavrepalanchowk, Dhanusa, Siraha, Saptari, Sunsari, Morang, Jhapa, Ilam

5.2 Components Under NLSIP and Its Environmental and Social Implications

Component 1. Strengthening Critical Regulatory and Institutional Capacity

S.N	Output	Activities	Applicability of Environmental and Social Safeguard	Remarks
1	Livestock Master Plan; Livestock Breeding Policy; Veterinary Drug Act; Food Safety Acts; Updated Slaughter house and meat inspection act; One Health Strategy	<ol style="list-style-type: none"> 1. Review of current plans and relevant documents/strategies and national priorities 2. Review of available acts 3. Formation of task forces 4. Identify and secure consultants (ILRI, FAO, etc.) 5. Preparation of the drafts/documents 6. Consultation meetings, sharing and validation 	Incorporation of environmental and social safeguard aspects in Plan, Policies, Act, Standards, Directives as applicable	
2	Strengthen veterinary statutory body	<ol style="list-style-type: none"> 1. Trainings for capacity building of the staff 2. Revision of the Veterinary Council Act and Rules 	1. Environmental and social safeguard component should be an integral part of training	
3	Strengthen veterinary laboratories	<ol style="list-style-type: none"> 1. Lab accreditation 2. Lab equipment support 3. Capacity building trainings to the laboratory staff 	1. <u>Environmental standards and requirements must meet by the laboratory. The details are included in this report in annex 11</u> Vet laboratories must have	The Lab Safety Guidelines" Occupational Safety and Health Administration US Department of

S.N	Output	Activities	Applicability of Environmental and Social Safeguard	Remarks
			<ul style="list-style-type: none"> •Diseases prevention, surveillance and control plan •Certification for trade of live animals and products of animal origin 	Labor OSHA 3404-11R, 2011.
4	Institutional Capacity Development	<ol style="list-style-type: none"> 1. Capacity Needs Assessment 2. Higher studies for DLS officers (Masters, PhD) 3. Capacity building training for DLS officers 4. Building epidemiology and laboratory network (Two way/Four way linking) 5. Strengthen animal quarantine 6. Establishment of molecular biology laboratory 7. Strengthening of district, regional and central epidemiology units/center 	<p>Activity 1-4: Incorporate environment and social safeguard aspects in training.</p> <p>Activity 4-7, environmental and social requirements shall be met.</p>	
5	Support progressive control of Foot and Mouth Disease (FMD) and Peste des Petits Ruminantes (PPR)	<ol style="list-style-type: none"> 1. Support FMD vaccine production in Nepal 2. Strengthen Central Biological Production laboratory for PPR vaccine production 3. Vaccine quality assurance (PPR) 4. Formulation/Update the PPR control plan 	Environmental and social safeguard standards triggered, details elaborated in section	

S.N	Output	Activities	Applicability of Environmental and Social Safeguard	Remarks
		5. Non-structural Protein profile survey for FMD 6. Feasibility study for zonation for the control of PPR/FMD 7. Animal Identification 8. Formulation of surveillance plans for major TADs and zoonotic diseases using integrated approach 9. Procurement of vaccines against FMD		

Component 2. Promoting Sector Innovation and Modernizing Services Delivery

S.N	Output	Activities	Applicability of Environmental and Social Safeguard	Remarks
1	Increased production and of milk and meat	1. Strengthen Livestock Breeding Centers in the country 2. Animal evaluation 3. Herd improvement 4. Shed and Manure management for hygienic production 5. Forage development 6. Herd health management program 7. Establishment of milk chilling center 8. Development of Live Animal Market, Wet Market and Collection centers	Requirement to address environmental and social safeguard requirements (based on nature of project)	

S.N	Output	Activities	Applicability of Environmental and Social Safeguard	Remarks
		9. Demonstration of improved technology 10. Action research 11. Linking goat farmers to central “khasi bazaar” (Goat market) 12. Cooperative marketing 13. Linkage with NARC and research institute 14. Farmer’s training and extension services 15. Diagnostics services for private sector		
2	Strengthening of front line extension services and access to inputs	1. Physical infrastructure including field diagnostic facilities development for the service centers, DLSO offices 2. Development of ICT based livestock extension services 3. Provide vehicles/motorcycles for frontline workers 4. Capacity building of frontline extension workers 5. Training and engagement of private veterinarians and paraprofessionals in disease management and surveillance of different diseases	Activities requires Compliance with environmental and social safeguard requirements	

S.N	Output	Activities	Applicability of Environmental and Social Safeguard	Remarks
3	Climate smart livestock practices initiated and research supported	<ol style="list-style-type: none"> 1. Compendium of best practices 2. Competitive grant to universities/NARC scientists for research on climate smart technology 3. Cold chain establishment in the service centers and district offices 	Suggested integration of environmental and social aspects	

Component 3. Promoting Smallholder-inclusive Value Chains for Selected livestock Commodities

S.N	Output	Activities	Applicability of Environmental and Social Safeguard	Remarks
1	Increased income from goat and dairy through integration into livestock value chain and services	<ol style="list-style-type: none"> 1. Access of farmers to business advisory services 2. Establish linkage between farmers and MFIs/banks 3. Promotion of livestock insurance for wider coverage 4. Promotion of product diversification 5. Establishment of milk powder plant 	Activity 4 requires environmental and social safeguard understandings, activity 5 requires EIA study	
2	Production of hygienic meat and dairy products and quality control	<ol style="list-style-type: none"> 1. Preparation of communication materials for consumers 2. Behavior Change Communication for farmers for hygienic production 3. Promotion of biosecurity measures in farms, and personal hygiene of the farmers 4. Mastitis management 5. Transportation and storage facilities support for meat and milk 6. Strengthen Department of Food Technology and Quality Control and Veterinary Standards and Drug Administration Office/Veterinary Public Health laboratories 	Addressing of environmental and social safeguard requirements in activities (as deemed required). Activity 5, and 6 requires environmental screening for IEE/EIA/EMP	

Types and nature of civil work supported under NLSIP

- Construction of service center (office building, staff quarter)
- Construction of ancillary support facilities for laboratory (water supply system, sewage treatment plant)
- Construction of waste treatment facilities (solid waste)

5.3 Environmental Screening and Categorization

Environmental screening and categorization will be proposed by recipient stakeholder of NLSIP, and endorsed by NLSIP. This will be done during the selection of project and shall be an integral component of pre design phase. The detail screening checklist is included in annex 2.

Environmental review/analysis of each relevant NLSIP component is required to flag likely environmental issues in the proposed activities. It is advisable to flag environmental issues in such components. Each component of NLSIP which are related to infrastructure development will go through environmental screening in order to identify relevant environmental concerns as well as suggest any further investigation and assessment is necessary. This will be done during pre-feasibility study. Pre-feasibility team requires collecting/furnishing detailed information on environmental setting of the NLSIP supported project area. The expert assigned from NLSIP will review the sub project, environmental setting, and propose environmental category. Based on the environmental risks perceived, the proposal may fall in one of the following four categories:

5.3.1 Environmental Screening Criteria

Category I- Negative Listing of Sub-Projects:

Sub-projects/ activities under NLSIP in the category of 'Negative Listing' (annex 6) shall be rejected during screening.

Category II - Sub-Projects under NLSIP requiring EMP.

Threshold environmental criteria for sub-projects requiring IEE or EIA are identified on the basis of Environment Protection Act and Regulations 1997 as well as based on potential short-to-long-term adverse environmental impacts and their sensitivity. The sub project requiring EIA are excluded for funding. The activities/sub projects which trigger the IEE requirement shall be given low priority or avoided as far as possible (rational: IEE report preparation takes long time and its approval also takes substantial time). In case, if project requiring IEE is essential for funding, prior consent of NLSIP is necessary. In such cases, NLSIP will initiate for conducting IEEs and its approval through concerned ministry. However, each sub project under NLSIP with minor to major degree of environmental issue

shall prepare Environmental Management Plan (EMP) except projects which falls in category III .

Category III – Subproject /Activity requiring EMP

The eligible subprojects activities under NLSIP that are not under the IEE requirements, but their implementation could still have some adverse environmental impacts (not significant); they fall under this Category III. The NLSIP activities which triggers environmental and social safeguard requirement of GoN and the World Bank should present Environmental Management Plan of sample activity which identifies foreseeable potential environmental and social impacts of the activity and recommends the appropriate mitigation/management measures to eliminate, minimize, or manage these environmental impacts. Format and sample EMP is shown in (Annex-7 and 8)

Category IV Environmental Code of Practice

The EMF contains generic Environment Code of Practice (ECP) that could be adapted to all activities associated with NLSIP. The ECP will be included in the clauses of the contractual agreements. These ECP will be modified and improved and new sector ECP will be developed during project implementation phase. For that project that only requires use of environmental code of conduct, environmental officer (with support from NLSIP) will prepare sub project specific environmental code of practice or a simple EMP, which will be approved by NLSIP. Examples of code of practices are enclosed in annex 9

5.3.2 Environmental Monitoring and Auditing

Compliance to the environmental processes as well as implementation of necessary mitigation measures/ actions will be monitored at different levels and by different agencies. Regular monitoring will be done by the recipient office/party. Recipient progress report will contain status of environmental mitigation works (activities implemented, issues encountered, new issues etc). The subproject progress report submitted by the recipient will contain environmental status, mitigations works implemented, difficulties faced, and unforeseen issues that may have arisen. The quarterly compliance monitoring will be done by NLSIP. Field based monitoring assessment will be conducted annually. NLSIP may outsource the monitoring as and when necessary. The monitoring report will be used by the implementing agencies for further improving the compliance.

5.4 ESMF Implementation Arrangement

The overall implementation of the ESMF will be the responsibility of NLSIP. For clarity, the implementation arrangements have been discussed below considering two scenarios: i) preparation phase ii) implementation phase

5.4.1 Preparation Phase

The proposals received from the beneficiary entity/stakeholder for NLSIP supported activities will be screened as per the requirement of ESMF. The proposals will be framed to contain information needed for the screening (beneficiary institutions may be asked to provide additional information if the information is not sufficient). The screening will determine whether there is need for further activities like IEEs or EMPs. The responsibility of preparing IEE/EMP will be with the beneficiary institution/entity. However, considering the weak capacity of some of the party/entity technical support/guidance will be provided by NLSIP as and when necessary. During the preparation phase NLSIP will give training awareness program to all the recipient institutions on EMF. The recipient's proposal will not be accepted until all environmental safeguard requirements are cleared.

5.4.2 Implementation Phase

The recipient institution will be responsible for implementing environmental mitigations, obtaining necessary permits (if needed), implementing the EMPs and management plan cited in the approved IEEs etc. NLSIP will give technical support/ guidance to the party/institution whenever required, environmental and social specialist may be outsourced as necessary. Regular monitoring of the environmental and social issues will be conducted by the recipient institution and the report will be submitted to NLSIP as part of the periodic progress report.

The compliance monitoring will be conducted by NLSIP, outsourcing the tasks to experts as necessary, on quarterly basis which will be used for further improving the safeguard compliance. This report will also be shared with the WB. The findings of compliance monitoring will be discussed with the relevant recipient institution for necessary action.

5.5 Technical Support for Implementing Environmental and Social Safeguard Measures in NLSIP

The environmental and social safeguard consultant will be recruited by the NLSIP and work directly under the project director to ensure the compliance with environmental and social safeguard measures. The consultant will introduce the environmental and social safeguard requirements in livestock sector, train the livestock experts in areas of environmental and social safeguard. The consultant shall provide "on the ground" training to prepare site specific EMP and to fulfill the requirements of ESMF for NLSIP. The roles and responsibilities of personnel engaged in ESMF compliance are as follows

S.N	Title of Person	Roles and Responsibilities	Remarks
1	Project director	<ul style="list-style-type: none">• Selection of environmental and social safeguard consultation• Ensure compliance with ESMF	

		<ul style="list-style-type: none"> • Quality Control/Quality Assurance on ESMF/EMP • Finalization of report, correspondence with WB 	
2	Environment and Social Safeguard Consultant	<ul style="list-style-type: none"> • Assist the project director for ESMF compliance • Assist the environmental officer/DLSO and recipient on preparation of site specific EMP, provide training and technology transfer to recipient entity, conduct IEE/EIA of project (as deemed required) • Integrate environmental and social aspects in monthly reports, progress report • Involve in providing trainings to the RLSO and recipients on environmental and social safeguard measures • Through the project director coordinate with the World Bank in ESMF related matters • Revise and update ESMF (as deemed required) 	
3	Environmental Officers	<ul style="list-style-type: none"> • Screening of proposal as per ESMF, provide recommendations to PMT on proposals • Facilitate the stakeholders in getting decisions and support the awardees in streamlining ESMF aspects in proposal and overall project cycle • Perform compliance monitoring, impact monitoring, ensure the site specific mitigation • Provide environment and social safeguard related trainings project recipients • Preparation of monthly, annual report summarizing environmental and social report of projects. • Support the RLSO in ESMF related matters 	
3	DLSO	<ul style="list-style-type: none"> • Compliance with ESMF, preparation of EMP, site specific monitoring 	DLSO Or person responsible for

			oversight activities on the ground
4	Monitoring Expert	<ul style="list-style-type: none"> Monitoring of compliance of ESMF and EMP by the MoLD or third party 	

5.6 Likely Beneficial Impacts of NLSIP

It is expected that NLSIP will be beneficial to communities and to the environment since environmentally and socially sound management activities like integration of environmentally sound technologies (rain water harvesting, biogas, waste to energy), development and compliance with Livestock management Plan, Policies, Legislations, rules, guidelines, conduction of IEE/EIA and incorporation of code of practices prior the implementation of livestock project which triggers national and World Bank safeguard plan, and policies. etc. will be If all of these are implemented and managed properly, they will bring environmental social and economic benefits to the community.

Some of the positive impacts of the project includes:

- Establishing and reinforcing a policy and regulatory framework that strengthen livestock sector
- The project will create awareness related to environmental and social concerns and issues related to impact of livestock sector in environment.
- The project will create an enabling environment that improves the delivery of demand-driven services to livestock producers and provides adequate incentives for private sector investments in livestock.
- will support MoLD and its agencies in developing capacity for strategic sector planning and for evidence-based sector strategies that promote private sector led growth within the sector. The project will develop the capacity of MOLD in environmental and social safeguard sector.
- The project will integrate environmental and social concerns in project cycle including ESMP, RAP, GESI, VDCP
- The project support the development and roll out of a national action plan for the eradication of FMD and PPR
- The project will create positive enabling environment for certified vaccines manufactured in-country adhering with environmental standards
- The project will strength the veterinary quality control and animal nutrition laboratories to carry out adequate quality control tests on veterinary drugs, animal feed and feed ingredients following the environmental standards
- Enhance skills development regarding the environmental and social safeguard aspects in livestock management sector, Proper management of laboratory wastes (solid, and liquid)
- The project improve the quality and increase the impact of livestock services delivered to smallholder farmers by following environmentally friendly technologies..
- The project will support the modernization of livestock extension services by promoting and scaling up the use of **ICT** in Extension and Advisory Services including environmental and social safeguards
- The project will integrate the environmental components in conjunction with technical aspects which will support the implementation of **breeding, restocking and herd improvement programs**

- The project will promote a community-based approach to a productive, comprehensive management of rangelands and pastures, taking into account the evolving carrying capacity of livestock in fragile environments that are only slowly adapting to the changing climate.
- The project will support the development and implementation of the livestock-relevant sections of the **Local Adaption Program of Action (LAPA)** under NAPA
- The project Will support the roll out of a comprehensive knowledge and learning programs regarding environmental and social safeguard requirements, environmentally friendly technologies for livestock producer groups and cooperatives as well as livestock entrepreneurs
- The project will create better and hygienic environment for livestock
- The cattle markets developed in a environmentally friendly manner will be sources of income for the local governments;
- The cattle markets will be have better environmentally sound practices, accessibility, development of better market, access for market to sellers and buyers of livestock products
- Positive Impacts in terms of healthy meat and milk production, creation of employment, improved accessibility to trade and open up of commerce opportunities, enhanced agricultural activities, social-economic change, and source of revenue to the local communities.

5.7 Likely Adverse Impacts of NLSIP

- Animal waste is a concern of management
- The livestock industries emit large amount of carbon dioxide, methane, and other green house gases
- The land used for animal grazing, as well as the land that goes to specialized crop production for livestock animal diets, often causes mass scale deforestation.
- Feed production also required intensive use of water (for irrigating animal feed and nourishing the animals), fertilizer, pesticides, and fossil fuels.
- Livestock are estimated to be the main inland source of phosphorous and nitrogen contamination, contributing to biodiversity loss.
- Livestock's presence in land and its demand for feed crops contribute to biodiversity loss.
- Livestock sector accounts for 9 percent of carbon dioxide emissions derived from human related activities, as well as approximately 37 percent of methane emissions primarily gas from the digestive system of cattle and other domesticated ruminants, and approximately 65 percent of nitrous oxide gases, mostly from manure
- Human health also is affected by pathogens and harmful substances transmitted by livestock. Emerging diseases, such as highly Pathogenic Avian Influenza, are closely linked to changes in the livestock production.
- Major likely issues of indigenous and vulnerable people identified are social exclusion, low level of involvement in decision-making and low level of involvement in commercial livestock activities.
- Policy provisions as specific measures to safe guard interest, livelihood, culture and tradition, and customary rights of indigenous people are key to be integrated in NLSIP. The Indigenous People Development Plan including Dalits devised here will adopt strategies geared towards inclusion, greater participation and involvement in commercial

agriculture, capacity building along with specific measures either through direct project funds or from other sources. The policy framework ensures meaningful consultations with them throughout project preparation and implementation, and guarantees them assistance in accordance with their own priorities.

- The gender issues in livestock sector is identified during the field surveys are lack of awareness, low level of literacy, denial of opportunities, low level of participation in decision-making, low level of technical knowledge, disparity on wages, and limited access to markets.

5.8 NLSIP Sub Project Activities

The preliminary information regarding environmental and social setting of each sub project activity under NLSIP will be collected during sub project identification.

The likely project activities includes construction of buildings, retrofitting of buildings/renovation/repair of buildings, construction of water supply schemes, rehabilitation of water supply schemes, construction of laboratory, construction of access roads, support for laboratory etc The impacts associated with these activities will be mainly related to the issues of slope and stability, flooding, blockage of natural drainage, water availability, structural safety, space are some of the major problems, while in Terai the issues related to quality of water (arsenic etc), security of buildings, floods, structural safety, solid, liquid and hazardous waste management, issues related to exclusion of disadvantaged groups, use of child labor in sub projects, disparity in wages between male and female workers etc.

5.8.1 Likely Environmental and Social Impacts and mitigation measures of NLSIP Sub Projects

S.N	Sub Project and their Potential Environmental and Social Impacts
1	<p>Subproject: Forming and strengthening of livestock farmers organization, cooperatives, commodity associations, and other value chain participants</p> <p>Likelihood of excluding disadvantaged and marginalized group/communities such as women and vulnerable people, indigenous people, , differently able people, dalits and Madeshis</p>
2	<p>Sub Project: Local public infrastructure, agro-processing and productivity related infrastructure and large-scale marketing structures</p> <p>Social impacts associated with land acquisition for construction, may displace people losing all or part of their prime land or other permanent assets.</p> <ul style="list-style-type: none"> •Land use change in the construction area •Obstruction of drainage pattern in the road construction area and slope instability crating major problems of erosion. •Impact on agricultural fields due to side cast of excavated soil materials during construction of agricultural roads in hills, increased silt loads in streams, drainage system and irrigation canals through improper and casual disposal of debris

	<ul style="list-style-type: none"> •Increased safety risks due to handling of machinery like cutters, threshers and vibrators. •Health impacts on construction workers due to dust and noise pollution, Accidental Injuries to construction workers •Increased pressures on resources in and around the construction sites caused by additional population as migrant construction workers. •Use of child labor and discriminated wages based on gender. <p>Suggested mitigation measures: Adherence with RAP, incorporation of best engineering practices in construction, integration of environmentally friendly design, strictly follow Child Labor Act, and other relevant legislations. The detail mitigation measures are obtained from construction phase impacts and mitigations listed below in table</p>
3	<p>Sub Projects: Establishment and support to veterinary laboratories (including support for construction of ancillary facilities like water treatment plant, sewage treatment plant etc)</p>
	<p>Physical:</p> <ul style="list-style-type: none"> • Issues related to consumption of water and energy • Issues related to major polluting agents are animal wastes, antibiotics, hormones, chemicals • Phosphorous and nitrogen contamination of water bodies • Radioactive contamination of land, water and air due to unsafe disposal including drainage to agricultural fields. • Unpleasant view of the environment due to haphazard disposal of lab generated bulky wastes and hazardous wastes. <p>Socio-economic: Health impacts on citizens, waste collectors/street vendors, resulted from unsafe disposal of chemicals in the environment and lab.</p> <ul style="list-style-type: none"> •Occupational health hazards due to potential exposure to pathogenic micro-organisms, risk of fires, explosions, asphyxiation, poisoning. •Health impacts on due to exposure to harmful chemicals and to untrained lab workers. <p>Biological</p> <ul style="list-style-type: none"> •Contamination of vegetation (trees, crops etc.) due to unsafe disposal practices. •Pollution of water bodies leading to impact on aquatic communities. •Chemical contamination of ecosystems threats to the integrity of living species.
	<p>Suggested mitigation measures: Adherence with air, water, noise, soil, waste water standards of the GoN, construction of environmentally friendly technologies like water and waste water treatment, introduction of 3R concepts, Development and implementation of environmental manual for the laboratory etc</p>
4	<p>Sub Project: Large Scale Livestock Production Farm Establishment (Cattle, Goat, Chayangra)</p>
	<p>Physical: High water and energy requirement, concern of animal wastes (green manure, straw, fodder etc), dust pollution, water pollution, soil pollution, issues of pesticide and herbicide residues in water, issues of odor, flies, rodents, emit large</p>

	amounts of carbon dioxide, methane and other GHG, issues related to climate change due to livestock
	Biological: Degradation of pastureland due to grazing or feed production, use of fossil fuels, biodiversity loss,
	Socio-economic: Affect on human health by pathogens and harmful substances transmitted by livestock, employment of child labor, disparity in wages between male and female workers, conflicts related to land and property, issues related to grazing in public land/others land
	<p>Mitigation Measures:</p> <ul style="list-style-type: none"> • Development of IEC (information, education, and communication) brochure by the NLSIP and its wide distribution at grass root level to increase the level of awareness and knowledge regarding environmental conservation and to understand and implement social safeguard measures • Improving the water efficiency, energy efficiency system in farms, promotion of composting, integration of waste water treatment facilities • Rational use of ground water (extraction within permissible limit) • Control of flies, rodents, and odor • Farmyard manure could be prepared by slurry farm shed and dung of animals. This fertilizer makes the field more fertile rather than chemical fertilizers. • Biogas: Dung is decomposed and changed in the form of methane in digester and used for various purpose like cooking, heating etc • Controlling access and removing obstacles to mobility on common pastures, use of soil conservation measures and silvopastoralism, together with controlled livestock exclusion from sensitive areas • Payment schemes for environmental services in livestock based land use to help reduce and reverse land degradation • Improving animals diets to reduce enteric fermentation and consequent methane emissions and setting up biogas plant to initiatives to recycle manure • Equal opportunity employment, no disparity in wages, establish good rapport with neighbors
5	<p>NLSIP Support Services</p> <p>Livestock resource centres, Livestock research, Extension, Livestock-business development, Livestock related enterprises, Livestock resource centres at farmer's level, water and waste water treatment, Biogas and composting</p>
	<p>Physical Chemical contamination of land, water and air due to unsafe disposal of wastes to agricultural fields, and due to seepage of leachate from compost plants.</p> <ul style="list-style-type: none"> •Air pollution due to generation of gases like Ammonia, Methane and Nitrous oxides, Odor Pollution, Loss of amenity due to waste storage: visual intrusion, wind blown litter, attraction of flies and rodents. •Heavy metal pollution of land and water caused by application of compost manufactured by using Municipal solid waste and sewage sludge and also due to disposal of anaerobic digestion effluents. •Emissions of raw (unscrubbed) biogas from leaks in the gas collection system
	Biological: Contamination of vegetation (trees, crops etc.) due to unsafe disposal practices.
	<p>Socio-economic</p> <ul style="list-style-type: none"> •Land acquisition problems for large-scale compost and/or biogas productions.

<ul style="list-style-type: none"> •Health impacts on citizens resulted from unsafe disposal of chemicals in the environment. •Health hazards associated with odour pollution and consumption of contaminated water. •Occupational accidents due to methane emissions during waste storage: risk of fires, explosions, asphyxiation, poisoning. •Public health issues: methane build-up in residential areas (risk of fires and explosions) from leaks in gas collection system.
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5.8.2 Potential Environmental Risks and Concerns of Construction Related Projects or Activities under NLSIP

S.N	Environmental Issues	Significance	Remarks
1	<p>Design/Pre construction phase</p> <p>Impact due to poor design and work planning</p>	High	<p>Obtain permissions as required from regulatory agencies, adherence with ESMF for /environmental screening</p> <p>The structures built under should be friendly for differently able person.</p> <p>No use of gravel or sand from the onsite or surrounding areas. Consider possible alternatives for construction materials (aggregates) from the certified suppliers</p> <p>Choice of landscape planning that gives the best economy in terms of excavation and fill in order to avoid or minimize soil erosion during excavation works for the construction of structures</p> <p>Design and construction as per National Building Code (considering low vision, and differently able etc)</p> <p>Safe against Earthquake and fire</p> <p>Construction supervision by qualified Engineers/Sub-Engineers</p> <p>Water supply facilities (pre check for quality of sources and follow)source protection measures, checking for arsenic in Terai is compulsory</p> <p>Separate toilets for ladies and gents, Construction of ramps for wheel chair movement etc</p> <p>Consideration of safety and security aspects, sustainability aspects in design</p>

S.N	Environmental Issues	Significance	Remarks
			Incorporation of energy and water conservation measures during infrastructure planning
Construction Phase			
2	Slope stability and land slides	Moderate	<p>Service center/ Office buildings in mountain and hill region of Nepal fall on slopes. Poor site selection for building construction leads to instability, and lead high cost on account of earth retaining structures. Mitigation includes:</p> <ul style="list-style-type: none"> ▪ Minimize work areas ▪ Keep vegetation clearing at the necessary minimum ▪ Stockpile materials in a safe manner, provide support to avoid any washouts or instability
3	Location of institutions and orientation, timing of construction	Moderate	<p>This is very important as it determines magnitude, natural heating, and lighting available inside the building. Orientations should be based on the climate type of the place where office facilities /institutions are planned. The construction of physical facilities in institution shouldn't disturb the existing operation of higher education institutions. The construction should be planned during off hours and holidays as far as possible. Less noisy construction should be emphasized to avoid such disturbances.</p>
4	Sanitation	Moderate	<p>Adequate sanitation facility in office (toilets, personal hygiene practices) should be encouraged.</p>
5	Water Quantity/Quality	Moderate	<p>An easily accessible water supply that provides sufficient safe water to meet needs of higher education institutions. Office s/ service center in Nepal are found using sources like protected springs, dug wells, boreholes, and piped water supply.</p>

S.N	Environmental Issues	Significance	Remarks
			The problem of arsenic contamination in ground water in offices of Terai should be given special attention.
6	Wastes	Low to moderate	Solid waste should be disposed off properly. Key strategies for improving solid waste management and disposal are to minimize the waste by offices and to recycle waste whenever possible.
7	Day Lighting and windows	Moderate	Poor indoor lighting in rooms, other office facilities can have many harmful effects on health and well being of staff and visitors. Good lighting arrangement through proper design is essential.
8	Pollution (Air, Water, and Noise)	Low to moderate	The air, water and noise pollution issues during the construction and operation phases of the higher education institutions and administration building, and other related construction should be addressed. Water sprinkling in dusty road/areas, water management to avoid water logging and blockage of drain should be properly taken care of.
k9	Ventilation systems	Moderate	The poor ventilation in offices may lead to respiratory problems, and easier transmission of infectious diseases. Constructing infrastructures with sufficient number of windows may improve ventilation.
10	Seismic Hazard	High	Earthquake safe construction, retrofitting in office building and other facilities shall be strictly followed.
11	Fire Hazard	High	Awareness on fire hazard and required mitigation measures recommended.
12	Health and Hygiene	Moderate	The health and hygiene education and practices offered in offices was felt to be inadequate. This needs to be improved.
13	Construction materials use/storage/disposal	Moderate	<ul style="list-style-type: none"> ▪ The use of local materials should be encouraged.

S.N	Environmental Issues	Significance	Remarks
			<ul style="list-style-type: none"> ▪ Avoid use of wood in construction of office s in Terai. Special attention should be given to control deforestation. ▪ The quarrying of sand from River should be limited to avoid any negative environmental impacts. Local quarrying of stone and other raw materials should be within limit not jeopardizing the local environment. ▪ The construction material should be stored in a safe place away from the reach of staff, and visitors, pedestrians. ▪ Design and implementation of climate friendly higher education institutions.
14	Veterinary Laboratory safety and hazardous waste	Moderate to high	The laboratory safety and hazardous waste management in majority office laboratories in Nepal is poor. So, it is advisable that all recipient institutions for the laboratory under should use environmentally friendly products, over stocking should be avoided
15	Operation Phase	Moderate to high	<p>Regular repair and maintenance of infrastructure, and facilities</p> <ul style="list-style-type: none"> ▪ Waste management ▪ Use of energy efficient appliances ▪ Adherence with water conservation measures ▪ Environmental friendly operation of laboratory (for applicable institutions), ensure for laboratory safety and proper management of waste ▪ Follow up and adherence with EMF ▪ Energy and water conservation measures ▪ To safeguard visitors, staff, and visitors office buildings and resources, to prevent entry of animals to limit the public access to office s and for various safety and security purpose, necessary measures shall be taken due considerations

5.8.3 Pest Management Plan

The subprojects to be implemented under the Nepal Livestock Sector Innovation Project might involve use of veterinary chemicals and animal health products in excess of recommended dosages in anticipation of higher returns. Therefore, as a matter of precaution to address any potential and unforeseen consequences arising out of their use and disposal of chemicals on both human health and the environment (soil, water, air), a Guide on Safe Use of Animal Health Drugs and Chemicals will be prepared.

It is for the above reason, the World Bank safeguard policy on Pest Management (OP 4.09) has been triggered and as a result, MoLD is required to prepare Pest Management Plan1 as a standalone document.

PMP Objectives

The objective of the Pest Management Plan is to:

- Promote the use of environmentally friendly practices (hygienic, cultural, biological or natural control mechanisms and the judicious use of chemicals) in pest control;
- Effectively monitor pesticide use and pest issues amongst participating farmers/cooperatives/farms/recipient under NLSIP
- Work in close coordination with IPM action plan in the event that serious pest management issues are encountered, and/or the introduction of technologies is seen to lead to a significant decrease in the application of pesticides;
- Ensure compliance with national standards, laws and regulations;
- Ensure compliance with World Bank safeguard policy OP 4.09; and

Challenges and Potential Impacts

The impacts and challenges identified include:

- Likely pollution of water resources and aquatic life from pesticide usage;
- Poisoning from improper use of pesticides by farmers and farm assistants;
- Impact from improper disposal of pesticide containers;
- Large scale production losses from fruit fly and armyworm outbreaks;
- Production losses from threats from other crop pests and diseases;
- Abuses associated with pesticide supply and sales; and
- General health and safety of farmers and environmental hazards.

Likely Program to meet PMP requirements

- Formation of a Safeguard Team

- Registration and training of all interested pesticide distributors/resellers under the Project
- PMP Communication and IPM/PMP Orientation Workshop
- Education and awareness creation
- Pests Inventory and Monitoring Measures
- Stakeholder and Interest Group consultation and Involvement
- Prevention of new Pest Infestations and management of established Pests
- Institutional Arrangements and Training Responsibilities
- Participatory Monitoring and Evaluation
- Ensuring Sustainability
- Reporting and Management Reviews

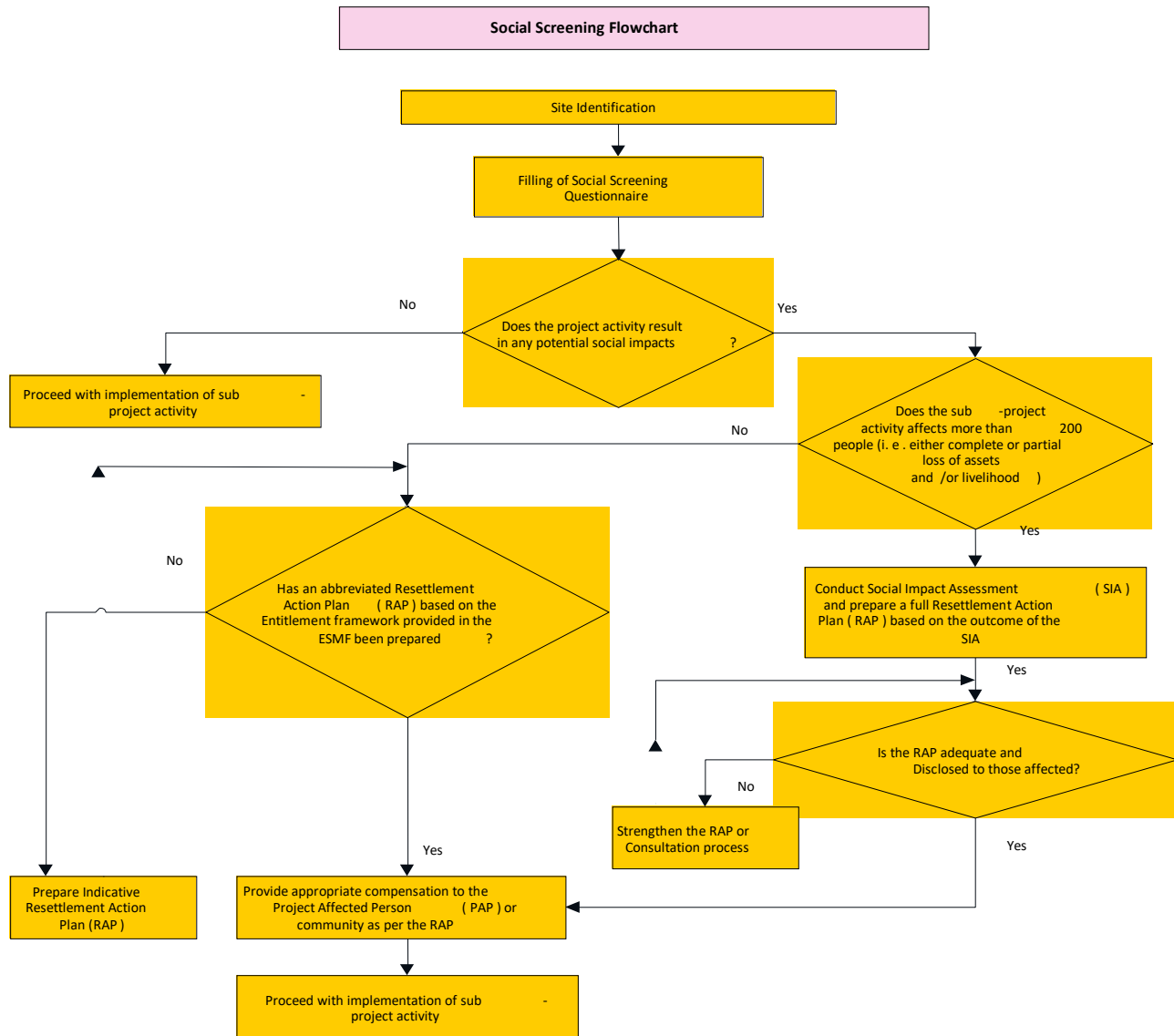
5.9 Process for Managing Over-all Social Impacts/Issues of NLSIP

The key steps are essentially the same as for dealing with the environmental issues – screening, assessment and preparation of mitigation plan. Social Management Framework (SMF) is the instrument that provides the necessary guidance to identify and address the potential social concerns or impacts of a project right from the planning stage to its implementation and post-implementation operations.

5.9.1 Social Screening

Every sub-project proposal to be funded under the NLSIP is subject to social screening process before it is selected for inclusion in the project.

Figure: Social Screening for NLSIP; Flow Chart showing Key Steps



Screening is the first step in the ESMF process. The purpose of screening is to get an overview of the nature, scale and magnitude of the issues in order to determine the need for conducting SIA and preparing Resettlement Action Plan (RAP). After identifying issues, the applicability of the Bank’s environment and social safeguard policies is established along with Government of Nepal’s regulatory requirements. Based on this, boundaries and focus areas for the SIA along with the use of specific instruments are determined.

During the interaction with the PMT personnel and in stakeholders' consultation it was mentioned that no land acquisition will take place in NLSIP. Due to this reason, RAP doesn't seem to be trigger in NLSIP. However, to aware with the existing GoN and the World Bank requirements, the Resettlement and Rehabilitation requirements are spelled out in this

document. If in future, the project requires acquisition of land, then only the GoN and WB policies will trigger.

Though it is envisaged that the subproject activities will have very generic social issues that are manageable through standards and codes of practice, there might be some sub-project activities proposed in due course, that carry a higher risk social disruptions and/or impacts. The possibility of such an issue arising in the sub-project site will be identified during the screening process. The screening format has been designed to identify sub-project/s with potential social issues that may need to be addressed at the project planning stage.

The screening process intends to:

- a) Determine potential impacts of selected activities under each component as to whether they are likely to cause negative social impacts
- b) Determine the scope and focus of detailed social assessment
- c) Helps in making appropriate decision about inclusion or exclusion of the site/location under consideration.

The envisaged activities and scope of NLSIP may not require SIA or RAP. However, the short term impact on livelihood and access to facilities and properties of household may prevail. Such impacts (if any) shall be well documented.

5.10 Social Impact Assessment (SIA)

The project will undertake a survey for identification of the persons and their families likely to be affected by the project. Every survey shall contain the following information of the project affected families:

- Members of families who are residing, practicing any trade, occupation or vocation in the project affected area;
- Project affected families who are likely to lose their house, commercial establishment, agricultural land, employment or are alienated wholly or substantially from the main source of their trade occupation or vocation or losing any other immovable property.
- Agricultural laborers and non-agriculture laborers, livestock farmers.
- Losing access to private property or common property resources
- Families belonging to dalit and janjati groups
- Vulnerable persons such as the disabled, destitute, orphans, widows, unmarried girls, abandoned women, or persons above the age of 60 years of age, who are not provided or cannot immediately be provided with alternative livelihood;

The project on completion of the survey will disseminate the survey results among the affected community.

5.11 Resettlement Action Plan

Based on the social impact assessment survey, project will prepare an action plan to mitigate or minimize the adverse impacts as identified during the survey. The draft mitigation plan in form of resettlement action plan (RAP) will be again disseminated among the affected individuals / community. The feedback received from the affected groups will be incorporated to the extent possible before finalization of the RAP.

Every-draft Resettlement Action Plan (RAP) prepared shall contain the following particulars namely:

- The extent of area to be acquired for the project, the name(s) of the corresponding wards of particular project area and the method employed for acquiring land with the relevant documentation.
- Ward wise list of project affected families and likely number of displaced persons by impact category
- Family-wise and the extent and nature of land and immovable property in their possession indicating the survey numbers thereof held by such persons in the affected zone;
- Socio-economic survey of affected people including income/asset survey of PAPs.
- A list of agricultural laborers in such area and the names of such persons whose livelihood depend on agricultural activities;
- A list of persons who have lost or are likely to lose their employment or livelihood or who have been alienated wholly and substantially from their main sources of occupation or vocation consequent to the acquisition of land and / or structure for the project;
- Information on vulnerable groups or persons for whom special provisions may have to be made;
- A list of occupiers, if any
- List of permanent business owners in project areas
- Inventory of hawkers (if possible)
- A list of public utilities and government buildings which are likely to be affected
- A comprehensive list of benefits and packages which are to be provided to project affected families by impact category;
- Details of the extent of land available which may be acquired in settlement area for resettling and allotting of land to the project affected families;
- Details of the basic amenities and infrastructure facilities which are-to be provided for resettlement;
- Entitlement matrix
- Time schedule for shifting and resettling the displaced families in resettlement zones
- Grievance redressal mechanism

- Institutional mechanism for RAP implementation;
- Monitoring and evaluation indicators and mechanism; and
- Budget

5.11.1 Preparation of Resettlement Action Plan (RAP)

Having identified the potential impacts of the relevant activities under NLSIP component, the next step is to develop action plan to mitigate the impacts. The RAPs provides a link between the impacts identified and proposed mitigation measures to realize the objectives of involuntary resettlement. The RAPs will take into account magnitude of impacts and accordingly prepare a resettlement plan that is consistent with this framework for Bank approval before the sub-project is accepted for Bank financing.

- Sub-projects that will affect more than 200 people due to land acquisition and/or physical relocation and where a full Resettlement Action Plan (RAP) must be produced.
- Sub-projects that will affect less than 200 people will require an abbreviated RP.
 - The above plans will be prepared as soon as subproject is finalized, prior to Bank's approval of corresponding civil works bid document.
- Projects that are not expected to have any land acquisition or any other significant adverse social impacts; on the contrary, significant positive social impact and improved livelihoods are exempted from such interventions.

5.11.2 Sub-Project Approval

In the event that a sub-project involves land acquisition against compensation or loss of livelihood or shelter, the project shall:

- Not approve the subproject until a satisfactory RAP has been prepared and shared with the affected person and the local community; and
- Not allow works to start until the compensation and assistance has been made available in accordance with the framework.

Chapter 6

Resettlement Policy Framework (Including Framework For Vulnerable Community Development and Gender Development Plan)

6.1 Resettlement Policy Framework

This Resettlement Policy Framework (RPF) provides norms and procedures to screen, assess, and plan land acquisition and resettlement activities for sub-projects that are prepared and approved during implementation of the NLSIP in full compliance with WB's Involuntary Resettlement Policy as well as applicable laws of GoN.

6.2 Key Policy Norms and Principles

The resettlement principles adopted for NLSIP recognize the Land Acquisition Act, 2034 (1977) and the requirements of the World Bank (WB) policies on Involuntary Resettlement, Indigenous People and other relevant acts, policies and guidelines related to urban development. The RPF has been prepared based on the general findings of the reviews of literatures and stakeholder consultations at the central and municipal levels. The details of the principles are presented in the table below.

Table Principles and Corresponding Guidelines to Execute Resettlement Policy

Principles	Guidelines
<p>Principle 1:</p> <p>Minimize human displacement and resettlement wherever possible.</p>	<p>Land acquisition and involuntary resettlement will be avoided where feasible or minimized to the extent possible through the incorporation of social considerations into project design options. For example ,in the case of any activities where land acquisition may be required and land, house or assets may be affected, , while selecting the sub-project, the Executing Agency (EA), in this case the NLSIP will explore design and site alternatives and option for the design and site alternative involving minimum land and resettlement impacts. The objective should be to avoid impact on productive land and economic assets, shelter and cultural properties.</p>
<p>Principle 2:</p> <p>Identify all Project impacts and record all losses properly.</p>	<ul style="list-style-type: none"> • As soon as the site/land/RoW is identified for any activity, a Social Screening will be undertaken to broadly estimate the involuntary resettlement and IP-VC impacts. • Based on the findings of the Social Screening, if the impacts are minimal, an abbreviated Resettlement Action Plan will be prepared which will record impacts in detail through a Census Survey. • If the Social Screening shows substantial impacts requiring a full RAP, a Social Impact Assessment (Census Survey supplemented by a Socio-Economic Survey) will be carried out to record all the impacts in detail.

	<ul style="list-style-type: none"> • A database of all project Affected Persons/Families (PAPs/PAFs) will be established which will include information on the following: <ul style="list-style-type: none"> ➤ landholdings; non-retrievable loss of buildings and structures to determine fair and reasonable levels of compensation and mitigation; ➤ census information, detailing household composition and demography; and ➤ Current income streams and livelihood of the families. • The asset inventories will be used to determine entitlements of individual families/persons; severely project affected persons/families; • The socio-economic census data will be used to monitor how the affected households are able to re-establish their shelter and livelihoods with the resettlement and rehabilitation benefits provided by the Project. • All information will be entered into the database to facilitate planning, implementation, and monitoring and evaluation.
<p>Principle 3:</p> <p>Plan and implement land acquisition and resettlement activities as an integral part of the Project.</p>	<p>Land acquisition and involuntary resettlement activities will be integral part of the project planning an implementation through the following steps.</p> <ul style="list-style-type: none"> • Land acquisition and resettlement costs will be built into the overall project budget as an upfront cost; • The design and site layout will be prepared with social screening in order to avoid/minimize LA and IR impacts; • Detail Project Report (DPR) for the sub-projects will incorporate Social Screening/SIA findings and the RAP and IPVCDP • An organizational framework will be established ensuring coordination of the roles and responsibilities of the social development and engineering units so that the schedules for LA and R&R and the civil works are properly linked; These arrangements should ensure that payment of compensation, resettlement are completed before site clearance. • LA process and key resettlement actions must be completed prior to award of civil works

<p>Principle 4:</p> <p>Inform and hold public consultations with affected people during planning and implementation.</p>	<ul style="list-style-type: none"> • Disclose and disseminate information on sub-project at feasibility stage; • Disclose and disseminate Social Screening and SIA results (LA and R&R impacts) before preparing RAP and IP-VCDP; • Disclose and Disseminate Entitlements, compensation and RR assistance payment schedule; RAP Implementation Plan; and Grievance Procedure during RAP preparation and implementation; • Pay special attention to the following: <ul style="list-style-type: none"> ➢ inform people in time about of project proposals and implementation schedules; ➢ consult people on measures to restore their shelter, and livelihoods, and ensure their participation in design and implementation; and ➢ Inform affected families about relocation and land acquisition dates sufficiently in advance of actual implementation.
<p>Principle 5:</p> <p>Assist the affected persons to restore, and ultimately to improve, their livelihoods to conditions equal or better than their earlier status.</p>	<ul style="list-style-type: none"> ▪ The Project implementing agencies will take the following steps to enable the affected families to restore and improve their livelihoods through the following provisions: <ul style="list-style-type: none"> ➢ Provide compensation at replacement rates for all loss and damage caused to land and assets. ➢ Offer fair, equitable and prompt compensation for the loss of assets attributable to the project including to those without title to land where such asset is established provided that their eligibility for such assistance has been confirmed with the local community. ➢ support to re-establish lost or damaged shelter/shop any other structure through cash and/or, alternative site and/or, building at replacement value; ➢ relocation assistance including displacement allowance where physical relocation is required; and ➢ Support for livelihood restoration and community development.
<p>Principle 6</p> <p>Principle on gender</p>	<p>The objective of the World Bank’s gender and development policy (OP 4.20) is to assist member countries to reduce poverty and enhance economic growth, human well-being, and development effectiveness by addressing the gender disparities and inequalities that are barriers to development, and by assisting member</p>

	<p>countries in formulating and implementing their gender and development goals</p> <p>To this end, the Bank periodically assesses the gender dimensions of development within and across sectors in the countries in which it has an active assistance program. This gender assessment² informs the Bank's policy dialogue with the member country.</p> <p>Since program under NLSIP has identified the need for gender-responsive interventions, the Bank's assistance to the country incorporates measures designed to address this need. So, NLSIP are designed to adequately take into account the gender implications of the project</p>
<p>Principle 7</p> <p>Special support to enhance project benefits for the Indigenous people and vulnerable groups.</p>	<ul style="list-style-type: none"> ▪ Pay special attention paid to adverse impacts on vulnerable households (elderly and physically disabled, female-headed households, Dalits and indigenous groups who may be vulnerable to changes brought about by project activities or excluded from its benefits. Members of these groups are often not able to make their voice heard effectively, and therefore may need special support in accessing their entitlements and getting their grievances redressed. ▪ NLSIP will assess and compensate for any loss of or adverse impacts on their traditional rights to land and other natural resources, communal property resources; ▪ The NLSIP will design and implement projects in a manner which does not adversely impact their social and cultural traditions and their traditional access to land and other natural resources. Any subsequent losses resulting from the project will be assessed and mitigated.
<p>Principle 8</p> <p>Grievance and monitoring procedures will be in place.</p>	<ul style="list-style-type: none"> • Grievance handling mechanism is to be instituted at NLSIP • Independent monitoring agency will be instituted to carry out periodic review of the safeguard due diligence with regard to land acquisition, resettlement and livelihood restoration. • Monitoring will be an ongoing activity involving internal monitoring, and periodic external review using quantitative and qualitative methods;

<p>Principle 9:</p> <p>Resettlement planning will take account of the local socio-economic development context.</p>	<p>Resettlement planning will take account of:</p> <ul style="list-style-type: none"> • any current/planned government developments in the project area, including initiatives to address poverty; and • any current/planned NGO/funding agency initiatives in the region.
<p>Principle 10:</p> <p>Resettlement planning and implementation will comply with all legal and policy provisions of the Government of Nepal and the World Bank safeguard policies.</p>	<p>Resettlement planning and implementation will comply with project policies and the provisions of relevant national legislation and WB policies pertaining to:</p> <ul style="list-style-type: none"> • environmental management; • public participation and disclosure; • land tenure, occupation, acquisition and compensation; • local government, development and service provision.
<p>Principle 11:</p> <p>Establish safeguard procedure to ensure that voluntary land donation does not pose any impoverishment risks for the land donors and that this process remains purely voluntary without any use of pressure or influence.</p>	<ul style="list-style-type: none"> • Sub-project planning and implementation will follow a bottom-up approach, allowing communities to participate in the planning and implementation. Where the local people are willing to voluntarily donate a part of their land for establishing socio-economic infrastructure such as improvement of inner urban roads and small-scale urban infrastructure that provide direct benefit to community, the NLSIP will allow such donation on the following grounds: As a first principle, APs will be informed of their right to receive compensation for any loss of their property (house, land, and trees) that might be caused by the sub-project construction, and the land donation might be accepted only as a last option; • No one will be forced to donate their land, and APs will have the right to refuse a land donation proposal from the EA; • In case APs are directly linked to sub-project benefits and thus are willing to voluntarily donate their land after they are fully informed about their entitlement, the sub-project will assess their socio-economic status and potential impact of land donation and accept land donation only from those APs who do not fall below the poverty line after the land donation. • In no case land donation shall be received from families living below poverty line and those who are marginal or small livestock farmers

	<ul style="list-style-type: none">• In case land donation involves giving away of more than 10% of the total land holding, such donation may be permitted only after confirming that such donation shall not adversely affect the future economic status of the willing donor.• Voluntary donation procedure will not apply to cases where this will cause any damage to private structures (boundary walls not included)• In all voluntary donation cases, there should be at least two neighborhood witnesses to attest the donation form certifying that this was purely voluntary.
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6.3 Social Screening and Categorization of Impacts on Involuntary Resettlement (IR)

Screening of subproject for assessing its potential IR impacts will be carried out by the NLSIP during the project identification and prioritization process using the Social Screening Format. Based on the screening data on the extent of likely IR impacts the sub-project safeguard requirements will be categorized as follows:

- a) Significant (Category A) – If as a result of the subproject, about 200 or more people may experience major impacts, that is, being physically displaced from housing, or losing 10% or more of their productive (income-generating) assets;
- b) Not significant (Category B) – If as a result of the subproject, fewer than 200 people will be physically displaced from housing or lose less than 10% of their productive (income-generating) assets. Resettlement plans are prepared commensurate to their impacts;
- c) No resettlement effect (Category C) – If the subproject does not require temporary or permanent land acquisition, and there are no impacts involving the loss of land, structures, crops and trees, businesses or income. No resettlement plan is required. This category also includes temporary but not significant impacts which will have to be mitigated as a part of construction management in consultation with the PAP by the Contractor.

Any subprojects that may cause significant resettlement impacts or indigenous people impacts (Category A) will require a full scale Social Impact Assessment along with Environment Impact Assessment (EIA) and will require preparation and implementation of a comprehensive Resettlement Action Plan. The aim should be to avoid undertaking such under NLSIP.

The screening and categorization of impact on involuntary resettlement will be initiated by NLSIP either by the relevant staff or, if there are no such skills, then with the help of external consultants. The social screening report will be prepared by the NLSIP with the support of social safeguard specialist of grant facility administrator.

6.4 Entitlement for Various Losses

An Entitlement Matrix (EM) has been developed as per this framework and outlines various types of losses that could result from a sub-project and provides for compensation and resettlement and rehabilitation benefits for various categories of affected people. The matrix lists various types of impacts and losses, application parameters, and entitlements. The matrix will apply to all sub-projects entailing IR impacts irrespective of the size of the sub-project and extent of impact. If in any stage of a sub-project, additional resettlement impacts are identified, the RAP will be updated by including provision of compensation and assistance for the additional impacts by the concerned the municipality.

The entitlement matrix has been prepared in accordance with the GoN and in compliance with the World Bank safeguard policies. Following the finalization of the design, the detailed

measurement survey (DMS) of the affected land and/or non-land assets and detailed census survey of the affected families will be carried out to record the actual impacts. As a part of the land acquisition, replacement cost surveys (or asset valuation) will be carried out, which will form the basis for determining the compensation for the affected land and assets. This information will be used by the Land Acquisition Compensation Fixation Committee (LACFC) for fixing up compensation amounts for the land and assets to be acquired. This valuation can also be used to inform the negotiation of land value between the municipality and plot owner as per the LAA, or when land is to be directly purchased. All involuntary land acquisition (other than exceptional voluntary land donation) will be compensated at replacement cost and the APs will be assisted to re-establish their living standards (affected shelter and incomes) to a level equal to or better than their living condition prior to the sub-project. Under the Project, a representative from the affected persons is required to be a member of the LACFC to ensure compensation for assets is at replacement value. Where the replacement cost of the LACFC is lower than the market determined value, the municipality and/or government is required to pay the difference to the land loser. In cases of disputes such as where land records are not updated or where the APs are unable to produce the desired documents or absentee land owners, then the compensation amount will be deposited in the account of the concerned municipalities till the case is disposed.

Table Entitlement & Policy Matrix

Types of Lost	Application	Entitled Persons/family	Policy/ Entitlement
1. Acquisition of private, tenancy, or Guthi land	Entire or part of land to be acquired from owner of the land as recorded at cut-off date	<ul style="list-style-type: none"> • Titleholder • Tenants 	<ol style="list-style-type: none"> 1. Direct purchase of land by the Municipality through negotiation with the land owner having the Ward Committee as witness. 2. Land of equivalent size and category (if available), or cash compensation at replacement cost, 3. In case of vulnerable group (IPs, Dalits, socio-economically poor, women headed families), preference will be in replacing land for land, 4. Any transfer costs, registration fees or charges to be borne by the project, 5. In case there are legal Tenant (mohi), the land owner will have to produce consent of tenant or the purchase price or compensation as described in clauses 1 & 2 above shall be apportioned 50: 50 between the owner and the

Types of Lost	Application	Entitled Persons/family	Policy/ Entitlement
			<p>legal tenant as per the Land Reforms Act, 1964,</p> <p>6. Land compensation/registration shall be paid/done in favor of both the land owner and spouse,</p> <p>7. If remaining land becomes unviable as a result of land acquisition, land owner will have an option to relinquish unviable remaining portion of land and receive similar benefits to those losing all their land parcel(s),</p>
2. Temporary loss of land	Temporary land taken by the sub-project	<ul style="list-style-type: none"> • Titleholder • Tenants 	<ul style="list-style-type: none"> ▪ One month Prior notice before civil works allowing the owners to salvage their assets and crops; ▪ Compensation for any damage caused to structure/assets or standing crops (The contractor will be responsible for compensating for any temporary damage to property business, assets, crops and trees during civil works which will be reflected in the contract agreement.
3. Loss of residential, commercial, and other structure	Structures, buildings including cattle shed, walls, toilets etc. affected by the sub-project	<ul style="list-style-type: none"> • Owner • Tenants • Non-titled (encroachers and squatters) 	<ol style="list-style-type: none"> 1. Direct purchase of structure and land by the Municipality through negotiation with the land owner having the Ward Committee as witness. 2. Compensation for full or partial loss at replacement cost of the affected structure(s) without depreciation or deduction for salvaged material, 3. Displacement and transportation allowance for residential and commercial structures to cover actual transaction cost as estimated in the resettlement plan, six months of agriculture income as one time grant will be provided to AP, Prior notice of 35 days delivered to the affected family (tenants) or 3 month's rent for

Types of Lost	Application	Entitled Persons/family	Policy/ Entitlement
			<p>tenants who have to relocate from tented building</p> <p>4. Non-titled (squatters) persons will receive compensation for structures at replacement cost without depreciation or deduction for salvaged material.</p> <p>5. Encroachers will not be provided any compensation for land, but will be provided replacement value for the structure loss.</p> <p>6. Relocation assistance to all fully displaced households i.e. some additional support for vulnerable households including all titleholders as well as non titleholders in both the categories (residential as well as commercial), preferential employment at project site or three months of minimum wages.</p>
4. Loss of community structures and/or resources	Community facilities (e.g. irrigation, water, etc.) affected by the sub-project	The users of the facility or community or group	<ul style="list-style-type: none"> ▪ Reconstruction by the sub-project leaving such facilities in an equal or better condition than they were before, or ▪ Cash compensation to the legal/community custodians at full replacement cost without depreciation of deduction for salvaged material; or ▪ Negotiated relocation in consultation with the community
5. Loss of trees and crops	Affected fruit/nut trees	Owner of the affected timber and fodder trees	<ul style="list-style-type: none"> ▪ Cash compensation based on annual value of the produce and calculated according to Department of Agriculture (DOA) norms, ▪ Resettlement Plans to confirm that the DOA norms and techniques are sufficient and are updated regularly ▪
	Affected timber	Owner of the	<ul style="list-style-type: none"> ▪ Cash compensation based on calculation of the production and calculated according to the

Types of Lost	Application	Entitled Persons/family	Policy/ Entitlement
	and fodder trees	affected timber and fodder trees	district norms as decided by the Department of Forestry
	Affected crops	Owners and sharecroppers of affected crops	<ul style="list-style-type: none"> ▪ Cash compensation based on local market prices for the produce of one year and calculated as per the norms of District Agriculture Development Office, ▪ 50% cash compensation of the lost crop for the sharecroppers/legal tenant (Mohi) ▪ Non-titled persons will be informed 6 months prior to construction or provide compensation for crops.
6. Loss of economic opportunity	Economic opportunity lost as result of loss of livelihood base	Persons in the subproject vicinity who may be adversely affected, although they do not lose assets as such	<ul style="list-style-type: none"> ▪ Preferential involvement in project construction works, ▪ Skills training support for economic restoration, ▪ Priority in poverty reduction/social development program
7. Loss of time and travel expenses	Expenses incurred in traveling to fill application and making claims and time lost	All sub-project affected persons eligible for compensation	<ul style="list-style-type: none"> ▪ Program facilitates transportation in official process, ▪ Payment on the same day as other compensation

Types of Lost	Application	Entitled Persons/family	Policy/ Entitlement
8. Land Donations	Loss of land and other assets by means of voluntary donation	<p>Voluntary donation</p> <p>is accepted only if AP: (i) is subproject beneficiary and is fully consulted and informed about rights; (ii) doesn't fall below poverty line after land donation; (iii) donating up to 20% land holding; and (iv) freely willing to donate (with an agreement, including a "no coercion" verified by a third party)</p> <p>the remaining land should not be less than minimum size of plot or land as defined by the concerned Municipality.</p>	<ul style="list-style-type: none"> ▪ No compensation for the donated land, compensation and allowances for assets (such as house, structures) which may be partially affected due to land donation. ▪ Transfer of land ownership by negotiation (Municipality and the owner). ▪ Free/escape of any transfer costs, registration fees, or charges. ▪ Preferential employment in sub-project construction work ▪ Public acknowledgement of and appreciation for voluntary land donors through concrete display boards

Types of Lost	Application	Entitled Persons/family	Policy/ Entitlement
		No donation in case of impact on structure unless the house owner has more than none house in the same town.	
9. Additional Assistance			
9.1 Preferential treatment in employment in project activities	All APs	<ul style="list-style-type: none"> ▪ Construction contracts include provision that APs will have priority in wage labor/employment on sub-project construction during implementation, ▪ APs shall be given priority after construction for work as maintenance workers, mandated in local body agreement 	
9.2 Skill training and income generation support	One member of each project affected family belonging to vulnerable group/below poverty line	<ul style="list-style-type: none"> ▪ Skills training and income generation support financed by subproject with special focus on women, dalits and IPs ▪ Resettlement Plan to include a need assessment and skills training program for APs. 	
9.3 Priority in Poverty reduction/social development programs	All APs	<ul style="list-style-type: none"> ▪ Participation of APs, especially women, dalits, and IPs, with priority in saving credit scheme facilitated by the sub-project, ▪ Participation of APs with priority in life skills, income generation, and other entrepreneurship opportunities 	

6.5 Indigenous People (IPs) and Vulnerable Communities Development (IP-VCDF) Framework for NLSIP

IPs and Vulnerable Community Development Framework (IP-VCDF) is prepared to guide the preparation of activities under relevant component of the NLSIP to ensure better distribution of the benefits and promote development of the *adivasi/janajati* along with other disadvantaged social groups in all sub-project areas of influence. The IP/VCDF is developed based on the national policies/strategies as well as WB's Indigenous Peoples Policy. The principal objectives of the IP/VCDF are to:

- Ensure that project engages in free, prior, and informed consultation with the vulnerable community wherever they are affected.
- Ensure that project benefits are accessible to the vulnerable community living in the project area
- Avoid any kind of adverse impact on the vulnerable community to the extent possible and if unavoidable ensure that adverse impacts are minimized and mitigated
- Ensure vulnerable people's participation in the entire process of preparation; implementation and monitoring of the sub project activities
- Minimize further social and economic imbalances within communities; and
- Develop appropriate training / income generation activities in accordance to their own defined needs and priorities.

6.6 Steps for VCDP

The steps to be followed for VCDP are as follows:

1. Screening to identify whether Indigenous / vulnerable peoples are present or have collective attachment to, the project area
2. Social assessment and analysis to be carried out to address the social concerns of the subcomponent area
3. Identifying views of the affected communities by following a process of free, prior, and informed consultation at each stage of the project, and particularly during project preparation
4. Institutional arrangements (including capacity building wherever necessary) for screening project-supported activities, evaluating their effects on vulnerable community, preparing VCDPs (if required), and addressing grievances
5. The preparation of Plan
6. Monitoring and reporting including the establishment of mechanisms and benchmarks appropriate to the project and
7. Disclosure of the draft Plan

6.7 Relevant Policies on IPs and other Vulnerable Communities

Nepal does not have a standalone policy on Indigenous Peoples, however in the Tenth Plan significant emphasis has been placed on delivering basic services to the disadvantaged and indigenous people, *Dalits*, women, disabled and other vulnerable groups including the *Adhibasi / Janajati*. One of the main thrusts of the Tenth Plan is the implementation of targeted programs for the uplift, employment and basic security of Dalits, indigenous people and disabled peoples. The policy provision also outlines that the government should pilot strong and separate package of program of basic security for vulnerable sections of society. The Three Year Interim Plan (TYIP) (2007-2010) includes the following policies for inclusive development of *adivasi/janajatis* and other vulnerable groups:

- Creating an environment for social inclusion;
- Participation of disadvantaged groups in policy and decision making;
- Developing special programs for disadvantaged groups;
- Positive discrimination or reservation in education, employment, etc.;
- Protection of their culture, language, and knowledge;
- Proportional representation in development; and
- Making the country's entire economic framework socially inclusive.

National Foundation for Upliftment of Adivasi/Janjati Act, 2058 (2002), the National Human Rights Action Plan 2005, the Environmental Act 1997, and the Forest Act 1993 have emphasized protection and promotion of vulnerable groups in general, indigenous peoples'

knowledge, and cultural heritage in particular. In 1999, the Local Self-Governance Act was amended to give more power to the local political bodies, including authority to promote, preserve, and protect the IP's language, religion, culture, and their welfare.

World Bank policy on indigenous people emphasized to design and implement projects in a way that fosters full respect for indigenous peoples' dignity, human rights, and cultural uniqueness and so that they:

- receive culturally compatible social and economic benefits, and
- do not suffer adverse effects during the development process.

6.8 Screening and Categorization of Impacts on IPs and Vulnerable Communities for NLSIP

Social screening will be undertaken at an early stage in all sub-projects for ascertaining impacts on the Indigenous people and vulnerable communities will be carried out alongside the screening done for land acquisition and involuntary resettlement impacts to categorize the impacts on IPs and decide whether it requires a separate IP-VC Development Plan or not. A thorough screening will be conducted during the project feasibility study and preparation of DPR. The screening for VC, which will involve identifying IPs and vulnerable communities belonging to the area of the sub-project, their population (number and ratio), and their characteristics as compared to the main population in the sub-project influence zone through primary and secondary data collection.

Social screening provides first stage information about the subproject which also identifies: (i) beneficiary population living within various impact zones of the sub project (ii) extent of land required and number of land owners affected; (iii) impacts on poor and vulnerable groups including needs and priority for social and economic betterment; (iv) willingness of people for voluntary land donation; and v) other impacts.

Screening report also provided information about the potential damage / loss of common community structures such as water tank including pipelines, religious cultural monuments / sites, inner urban road.

Relevant activities under the component will be categorized according to the level of impacts on IPs and vulnerable communities. These will be determined by the type, location, scale, nature, and presumed magnitude of potential impacts on IPs and vulnerable communities. Based on this, the sub-projects will be categorized as per table

Table Categorization of Impact on IPs and Vulnerable Communities for Sub-Projects

Category	Determination of the type of Social Assessment Needed
Category A	Sub-projects expected to have significant impacts ⁶ that require an Indigenous People (IP)/Vulnerable Group Development Program
Category B	Sub-projects expected to have limited impacts that require specific action for IP/ Vulnerable Group in resettlement plans and/or social action plans
Category C	Sub-projects not expected to have impacts on IP/ Vulnerable Group and, therefore, do not require special provision for IP/ Vulnerable Group

If required, the NLSIP will initiate the screening and categorization with the support of social safeguard specialist of grant facility administrator of NLSIP.

In case of significant impacts (falling in categories A and B) on IPs and vulnerable groups, the NLSIP will share the IP/VCDP to WB for clearance. Short IP-VCDPs prepared as a part of 'less impact' or 'no impact' category will be internally evaluated and will be cleared with the NLSIP. The WB will periodically review and do random checks for the documents.

Based on the categorization for screening impact, the NLSIP will prepare sub-project specific IP-VCDPs as per the sample IP-VCDP provided in Annex 10

⁶The impacts on IP/ Vulnerable Group will be considered 'significant' or Category A if the sub-project positively or negatively:

- a) affects their customary rights of use and access to land and natural resources,*
- b) changes their socio-economic status,*
- c) affects their cultural and communal integrity,*
- d) affects their health, education, livelihood, and social security status, and/or*
- e) alters or undermines the recognition of indigenous knowledge.*

6.9 Specific Measures

Specific measures for vulnerable groups including indigenous peoples, Dalits, minor ethnic communities, women, and powerless communities are outlined below.

- Ensure awareness raising, active participation and capacity building of the vulnerable communities
- Ensure of participation in awareness campaign, project implementation and monitoring
- Ensure equal wages for similar work during implementation
- Launch project information campaign to inform the target groups about the key features of the project and sub project.
- Assess and analyze the presence of indigenous and Dalits in subcomponent sites
- Treat and support indigenous people, dalits and other vulnerable communities preferentially
- Involve indigenous people and dalits in beneficiary groups to increase their participation.
- Define training/income generation activities based on the identified needs and priorities of vulnerable people in the project areas.
- Conduct project related meetings in indigenous and vulnerable community areas to encourage their participation. Ensure a quorum which includes representation from IP groups.
- Provide targeted assistance/training aimed at vulnerable groups to enhance livelihoods and participation in the subcomponents
- Built in awareness campaign about the project in the subproject
- Build capacity of indigenous peoples, Dalits and other vulnerable communities promoting necessary knowledge and skills to participate in subcomponent activities
- Develop capacity through trainings on skill enhancement (handicraft etc) of local people.

6.10 Gender Action Plan

The Gender Action Plan outlines the specific issues linking with corresponding strategies and activities which will be given due consideration in the project. This will ensure women's participation in the value-chain in order to benefit from project activities. The major tools are used to identify and deal with gender issues in the project cycle: gender analysis, project design, and policy dialogue.

Gender analysis should be an integral part of the initial social assessment at the screening stage itself. The issues identified can be scaled up during the feasibility and detailed analysis can be carried out during the DPR stage/early stages of the project cycle.

The project designs/concept should be gender responsive based on the gender analysis, and should be included in the DPR. The findings and recommendations from the gender analysis during project planning and feedback from beneficiaries during implementation must be discussed thoroughly to determine the need for further action. Listed below are the key action points:

6.10.1 General Checklist

- Identify key gender and women's participation issues.
- ☐ Identify the role of gender in the project objectives.
- ☐ Prepare terms of reference (TOR) for the gender specialist or social development specialist of the client
- ☐ Conduct gender analysis as part of overall Social Assessment.
- ☐ Draw up a socioeconomic profile of key stakeholder groups in the target population and disaggregate data by gender.
- ☐ Examine gender differences in knowledge, attitudes, practices, roles, status, wellbeing, constraints, needs, and priorities, and the factors that affect those differences.
- Assess men's and women's capacity to participate and the factors affecting that capacity.
- ☐ Assess the potential gender-differentiated impact of the project and options to maximize benefits and minimize adverse effects.
- Identify government agencies and nongovernmental organizations (NGOs), community-based organizations (CBOs), and women's groups that can be used during project implementation. Assess their capacity.
- ☐ Review the gender related policies and laws, as necessary.
- ☐ Identify information gaps related to the above issues.
- ☐ Involve men and women in project design.
- ☐ Incorporate gender findings in the project design.
- Ensure that gender concerns are addressed in the relevant sections (including project objectives, scope, poverty and social measures, cost estimates, institutional arrangements, social appendix, and consultant's TOR for implementation and M & E support).
- ☐ List out major gender actions.
- ☐ Develop gender-disaggregated indicators and monitoring plan.

6.10.2 Specific Checklists to be covered during various stages of project cycle

Methodology

Desk review

- Review available information (e.g., statistics, gender analysis, documents of previous projects) in the project area and the socioeconomic profile of the target population.
- Review the relevant legal (e.g., inheritance law), policy (e.g., R&R policy), and institutional framework (e.g., current administrative system for land acquisition, compensation disbursement) and their gender implications.

6.10.3 Household surveys

- Draw up gender-disaggregated socioeconomic and cultural profiles and identify the constraints, and needs of the target population.
- Collect quantitative information.

6.10.4 Participatory methodologies

(e.g., participatory rapid appraisal, focus group discussions, random interviews, walking tours)

The suggested Gender Action Plan for the project is presented below:

Issues	Activities	Targets and Indicators	Responsibility	Timeline
Project Development Objective Indicators To increase productivity, enhance value addition, and improve climate resilience of smallholder farms and agro-enterprises in selected livestock value-chains in Nepal.				
Women have less access to Credit, technology, wage markets, and training compared to men.	Women farmers adopt improved climate-smart agricultural technology	Number of women farmers reached including women headed HHs (45% of the total reached).	NLSIP-PMU, DLSUs	Throughout the project period
	Women farmers are provided with agricultural assets or services	Farmers, including women and women headed HHs provided assets as beneficiaries (45% of the total reached) Introduce agricultural tools and equipment that are user (women) friendly.	NLSIP-PMU, DLSUs	Throughout the project period
Component A: Strengthening Critical Regulatory and Institutional Capacity				
Nepal still facing challenges in translating legislation related to women's access to and control of resources into action at the community and	Form working groups and conduct stakeholder consultations to support a comprehensive policy review, modification, updating, or developing of new policies, including gender friendly provisions.	Ensure women representation in the policy working group and stakeholder consultation. Review policies from gender lens and formulate gender friendly policies.	NLSIP-PMU, DLSUs, Social Safeguard Team	Throughout the project period

household levels.				
While the proposed 753 Municipalities are expected to provide better outreach and services, they will likely take significant time to become fully operational.	Strengthen the institutional capacity of government Agencies to support the development of the sector, including training on gender.	Efforts will be made to increase women participation as trainee from the government officials Personnel engaged in NLSIP activities will be made aware on gender mainstreaming.	NLSIP-PMU, DLSUs, Social Safeguard Team	Throughout the project period
Component B: Promoting Sector Innovation and Modernizing Service Delivery				
Despite women's involvement in livestock production, their contribution is still under-appreciated in Nepal.	Conduct mapping to identify women cooperatives, groups (including informal groups), and entrepreneurs as the target groups and beneficiaries to be supported by the project.	Report to include data disaggregated by sex, social groups and geographic. Number of Producer Organizations formed with proportion of women led groups. At least 33% women members in Producer Organizations	NLSIP – PMU DLSUs , TA team	Throughout the project period
In a livestock value chain, the number of men compared to women - in terms of representation and control - rises with increase in household wealth	Enhance the capacity of key stakeholders along the selected livestock supply chains on GESI.	Number of trainings conducted on GESI with at least 45% women trainees.	NLSIP-PMU, DLSUs, Social Safeguard Team and TA	Throughout the project period
Time and venue are more binding for women than men	Ensure a GESI-friendly training environment for trainees	Separate toilet and accommodations for female and male trainees, coverage of essential transportation costs, child care support where needed, and flexible training time and location, where feasible	NLSIP - PMU, DLSUs	Throughout the project period
Trainings miss striking balance between the development of technical and methodological skills, and creating a social awareness for putting gender strategies into	Conduct gap analysis with stakeholder groups to revise and/or develop new training curriculums for a range of target groups, including: DLS staff, producers, technical staff in cooperatives, and service providers.	Women stakeholders consulted for gap analysis. (At least 20% of total stakeholders) Curriculum enhanced/ developed including gender tools.	NLSIP-PMU, DLSUs , Social Safeguard Team and TA	Throughout the project period

action.				
Extension services always occurs within a specific socio-cultural setting, and as such is subject to the same power dynamics that shape gender relations and often limit women's access to resources and support.	Establish municipality-level service centers (MLSCs) to provide extension services to producers that do not belong to cooperatives and producer groups and in remote areas, and include resource materials on gender and livestock.	Number of women beneficiaries reached through MLSCs.	NLSIP-PMU DLSUs and TA team	Throughout the project period
Women face disproportionate challenges compared to men in accessing livestock services and information	Women beneficiaries reached through Producer Organizations/Cooperatives newly established or formalized and ensure they are offered an increased range of services	At least 45% of the total beneficiaries are women.	NLSIP-PMU, DLSUs and TA team	Throughout the project period
Component C: Promoting Inclusive Value Chains for Selected Livestock Commodities				
Smallholders engage in many interrelated markets, but also face challenges in securing market access. Women smallholders frequently have less opportunities in accessing markets	Developing selection criteria, taking into account gender and youth dimensions to improve smallholders' (including women) access to market in project supported districts	Number of women smallholders' access to markets enhanced.	NLSIP-PMU, DLSUs	Throughout the project period
Consultations in dialogue platforms are primarily focused on pricing, norms, and regulations, and less on gender issues.	Discuss gender issues in the dialog platform, a forum for consultation between the Government and key stakeholders (POs, buyers, traders, processors, and participating BFs).	Number of discussions held on gender issues.	NLSIP-PMU, DLSUs, Social Safeguard Team and TA team	Throughout the project period
Women are largely denied any role in and access to economic returns from the livestock.	Facilitate the inclusive development of the targeted value chains	At least 33% of business plans financed by the project on a matching grant basis will be women in the areas of project support. Share of project beneficiaries with a livestock risk insurance	NLSIP-PMU, DLSUs and TA team	Throughout the project period

		policy (of which female is at least 33%)		
Component D: Project Management and Knowledge Generation				
Limited engagement of women in project design, thus less participation and involvement of women in different project phases and activities.	Mainstream GESI in project management.	<ul style="list-style-type: none"> • Beneficiaries are empowered and gender mainstreaming initiated in all project activities. • All project staff attended gender orientation training. • Six monthly meetings to review progress. • Sex, caste-ethnicity disaggregated data is collected and reported in all progress reports • The projects' achievements are evaluated on the basis of Gender. • Gender assessment tools developed and utilized for improved project implementation. • Rely on the partnership with the local civil groups/organizations such as women groups, producer associations, producer groups, and cooperatives and engage in a variety of citizen engagement activities. 	NLSIP-PMU, DLSUs, Social Safeguard Team and TA team	Throughout the project period

CHAPTER 7

MONITORING AND REPORTING

7.1 Monitoring

The ESMF requires detailed supervision, monitoring and evaluation of the impact of the subproject on the environment and social aspects. For this purpose a Monitoring & Evaluation (M&E) system will be established for the NLSIP. MOLD and implementing agencies will be responsible for implementing ESMF for periodic internal monitoring to ensure ESMF implementation. Internal monitoring will be carried out focusing on outcomes, outputs and implementation progress for each sub-grant. NLSIP may establish ESMF unit or outsource the regular monitoring.

External evaluation will be conducted by independent experts using quantitative and qualitative methods. The external evaluation will be conducted in midterm and end of the project period. The NLSIP may coordinate with the district level organizations like DDC for midterm monitoring.

Responsibility of Monitoring: Recipient institution has prime responsibility for regular monitoring, besides NLSIP is responsible for compliance monitoring as well as final evaluation. The midterm and final term monitoring shall be done by the independent expert. The regular monitoring includes;

- Adherence with ESMF for NLSIP
- Compliance with ESMF including mitigation measures
- Compliance monitoring of contractor in construction work
- Regular on site environmental monitoring

Proposed Monitoring Framework for NLSIP

Types of Monitoring

Regular Monitoring

As per the ESMF, the regular monitoring will be performed by the recipient institution. If the recipient institution requires any external technical support/ guidance shall be provided by the NLSIP. Environmental status, mitigations works implemented, difficulties encountered and unforeseen issues etc will be reported in each progress report. The checklist, forms, formats, guidelines of ESMF shall be followed.

Quarterly Monitoring

The quarterly monitoring on ESMF compliance, including contractor compliance shall be performed by NLSIP. The logistics and support required for such type of monitoring is included in ESMF. The ESMF forms, formats, guidelines shall be followed. A quarterly

monitoring report shall be prepared by the implementing agencies (NLSIP) based on the reporting by the recipient institutions. This report will also be shared with WB.

Annual Third Party Monitoring:

NLSIP will outsource this activity to independent consultant/firm/institution/expert to conduct third party monitoring of ESMF compliance. The annual monitoring report shall be prepared and submitted to MOLD. This report will also be shared with WB.

Contractors Compliance on ESMF

The contractors engaged through sub components/activities under NLSIP are also principle stakeholders in the project whose roles and responsibilities are to identify and mitigate the adverse impacts right from the beginning. Therefore, contract document needs to clarify the following roles / responsibility of contractors: Some of the generic requirements are mentioned below. Such requirements are mentioned under the environmental and social requirements in contract clauses while preparing the bid document by the NLSIP recipient institutions through support of project's environment specialist. The following are some of the generic requirements recommended for inclusion in contract document of the contractor.

- Construction materials from approved site, and of standard quality.(good house keeping)
- Reclaim the quarry site and fill up borrow pit after the completion of the work,
- Maintain health and sanitation of the labor camp (if such camp is envisaged in work),
- Proper disposal of spoil along hill slopes, vegetated areas, water bodies and other environmentally sensitive areas
- Enforce use of recommended disposal sites that are approved by project manager,
- Provide health and safety gears to the labors,
- Restrict labors' use of forest products, hunting and poaching.
- Hire as many local laborer as possible (priority has to be given for poor, marginalized and Dalits),
- Avoid use of child labor (below 16 years age),
- Employ at least 33 percent women laborer in construction,
- Ensure life insurance of the laborers (major infrastructure development)
- Ensure there will be no disturbance to operate the institution while construction is ongoing (i.e. proper construction planning, use of less noisy equipment, storage of materials in a safe manner)
- Adherence with occupational health and safety standards for staff, workers (use of PPE, posting of safety signs, warning signs during construction)

The monitoring of contractor's compliance shall be done by the RLS environment and officer through regular quarterly and annual monitoring. The status of contractor's compliance monitoring shall be recorded and recipient institutions shall take necessary actions to correct the noncompliance (if any).

Summary of Monitoring Framework

S.N	Type of Monitoring	Stages of Project	Responsibility	Aspects of Monitoring	Remarks
1	Regular	During construction	Recipient Institution (RI) with required guidance/technical support from NLSIP (as needed)	Environmental status at site, mitigation works implemented, difficulties encountered, unforeseen issues etc Compliance with mentioned in bid documents etc	Monitoring report shall be prepared to MOLD as part of the progress report
2	Quarterly	During construction	NLSIP	Review of regular monitoring report, on the spot verification of ESMF and EMP compliance, contractor's compliance to ESMF and bid document etc	Deliverables: Quarterly Monitoring report to MOLD and WB
3	Third Party Monitoring	MTR and end of project	NLSIP out sourced independent experts/firms	Review of regular and quarterly monitoring, and the spot monitoring as per the EMF and the adequacy of ESMF prepared for the project.	Deliverables: Monitoring report

Chapter 8

Capacity Building

Since MOLD does not have direct experience with the implementation of World Bank-funded projects, the ESMF has included capacity strengthening measures.

8.1 Training

Training is an important component for developing capacities. Appropriate and timely training to the officials with regard to various issues can bring a positive change in the functioning of the staff. Apart from training in generic areas such as human resource management, information management, government functionaries require training in handling certain specialized tasks pertaining to environmental and social issues. The PMT will identify the training need assessment of staff at ministry and regional level and suggest the training packages including their modality of operation.

Potential training areas are:

1. Hazards (from veterinary laboratories) supported under NLSIP
2. Orientations on ESMF
3. Orientations on plan, policies, legislations, standards of GoN and WB safeguard policies
4. Preparing EMPs and ECOPs
5. General Introduction to EA and Management

8.2 For central and regional level staff of NLSIP

Training on Environmental Assessment, Appraisal and Management, Social Safeguard and Issues

The staff working for NLSIP would require capacity building inputs to help them understand the environmental risks associated with NLSIP sub-grants and the appropriate measures that can be taken to mitigate adverse impacts on the community. In addition, they would require training to equip them with skills they can use to appraise sub-grants on key environmental criteria and ensure that they are environmentally sound. Environmental assessment and management training should also be provided to them.

Training related to environmentally sound technologies, tools and techniques for conducting environmental surveys. Trainings on EAs, EPA/EPR requirements, and requirements stipulated by sectoral legislations shall be provided during the trainings.

Training on Environmental and Social Assessment of NLSIP sub-grants will enable the NLSIP staff to understand the environmental risks attached to different sub-grants and the appropriate measures that can be taken to mitigate adverse impacts on the community. This would not only enable them to prepare environmentally sound sub-grants but also help them put in place strong monitoring and management plans.

8.2.1 Training on Social Assessment, Appraisal and Management:

PMT members and relevant staff at MoLD would require capacity building inputs to help them understand the social risks attached to different sub-projects and the appropriate R&R measures that can be taken to mitigate adverse impacts on the community. In addition, they would require training to equip them with skills they can use to appraise sub-projects on key social criteria and ensure that they are socially sound.

8.2.2 Training on Preparing Communication Strategies

A well-developed communication strategy needs to be in place to realize better results in implementing the projects. The PMT will have to develop and effectively implement their own consultation and communication strategy. Successful implementation of sub grant would depend, to a large extent, on the ability to maintain close contact with the community in the sub-grant area. For this purpose the PMT needs to develop consultation plans along with the help of recipient wards. Such a communication strategy would help in better communication, clearer understanding of social problems, better service delivery, easier conflict resolution and grievance redress. Training modules may be developed to help municipalities draft and implement appropriate consultation strategies. Environmental and Social Safeguard Specialists will assist the PMT in preparing this training.

8.2.3 Capacity Building Measures Proposed for NLSIP Stakeholders

S.N	Name of entity	Type of capacity building measures proposed	Remarks
3	Participating Institutions (PI)	ESMF will be widely distributed in such institutions. ESMF orientation training shall be provided to user's committee, farmers organizations, and other relevant persons as	

S.N	Name of entity	Type of capacity building measures proposed	Remarks
		required. Training is an important component for developing capacities. NLSIP will integrate ESMF training to its regular training cum orientation program for recipient institutions/organizations. Such cost will be inbuilt in overall training budget. Skill transfer in ESMF related aspects (from experts to key staff of PI)	

MOLD lacks the capacity for implementing ESMF. Similarly, there is no capacity at recipient institutions to deal in this matter. So, it is recommended to include environmental and social safeguard specialists at PMT at central level and environmental and social safeguard officers to all the regions. The safeguard specialists at center in coordination with regional safeguard specialist will conduct training, monitoring and supervision of activities.

ANNEX 1:

Environmental Standards: Government of Nepal

Industrial Effluent Quality (Generic Standards, Tolerance Limits for Industrial Effluent Discharged into Inland Surface Water)

S.N.	Parameters	Tolerance Limits
1.	pH	5.5 - 9.0
2.	Particle Size of Total Suspended Particles	Shall pass 850-micron Sieve
3.	Total Suspended solids, (mg/l)	30 - 200
4.	BOD ₅ at 20 °C, (mg/l)	30 - 100
5.	Oils and Grease, (mg/l)	10, <i>max</i>
6.	Phenolic Compounds, (mg/l)	1, <i>max</i>
7.	Cyanides as CN, (mg/l)	0.2, <i>max</i>
8.	Total Residual Chlorine, (mg/l)	1
9.	Sulfides as S, (mg/l)	2, <i>max</i>
10.	Fluorides as F, (mg/l)	2, <i>max</i>
11.	Arsenic as As, (mg/l)	0.2, <i>max</i>
12.	Cadmium as Cd, (mg/l)	2, <i>max</i>
13.	Hexavalent Chromium as Cr, (mg/l)	0.1, <i>max</i>
14.	Copper as Cu, (mg/l)	3, <i>max</i>
15.	Lead as Pb, (mg/l)	0.1, <i>max</i>
16.	Mercury as Hg, (mg/l)	0.01, <i>max</i>
17.	Nickel as Ni, (mg/l)	3.0, <i>max</i>
18.	Zinc as Zn, (mg/l)	5, <i>max</i>
19.	Ammoniacal Nitrogen, (mg/l)	50, <i>max</i>
20.	Chemical Oxygen Demand, (mg/l)	250, <i>max</i>
21.	Silver, (mg/l)	0.1, <i>max</i>

Generic Standards, Tolerance Limits for Industrial Effluent Discharged into Public Sewers

S.N.	Parameters	Tolerance Limits
1.	Temperature, °C	45
2.	pH	5.5 ~ 9.0
3.	Total Suspended solids, (mg/l)	600
4.	Total Dissolved Solids, (mg/l)	2100, <i>max</i>
5.	BOD ₅ at 20 °C, (mg/l)	400, <i>max</i>
6.	Oils and Grease, (mg/l)	50, <i>max</i>
7.	Phenolic Compounds, (mg/l)	10, <i>max</i>
8.	Cyanides as CN, (mg/l)	2, <i>max</i>
9.	Total Residual Chlorine, (mg/l)	1000 as chloride
10.	Sulfides as S, (mg/l)	2, <i>max</i>
11.	Sulfides as SO ₄ , (mg/l)	500, <i>max</i>
12.	Fluorides as F, (mg/l)	10, <i>max</i>

S.N.	Parameters	Tolerance Limits
13.	Arsenic as As, (mg/l)	1, <i>max</i>
14.	Cadmium as Cd, (mg/l)	2, <i>max</i>
15.	Hexavalent Chromium as Cr, (mg/l)	2, <i>max</i>
16.	Copper as Cu, (mg/l)	3, <i>max</i>
17.	Lead as Pb, (mg/l)	0.1, <i>max</i>
18.	Mercury as Hg, (mg/l)	0.01, <i>max</i>
19.	Nickel as Ni, (mg/l)	3.0, <i>max</i>
20.	Zinc as Zn, (mg/l)	5, <i>max</i>
21.	Selenium as Se, (mg/l)	0.05 <i>max</i>
22.	Ammoniacal Nitrogen, (mg/l)	50, <i>max</i>
23.	Chemical Oxygen Demand, (mg/l)	1000, <i>max</i>
24.	Silver, (mg/l)	0.1, <i>max</i>
25.	Mineral Oils, (mg/l)	10, <i>max</i>
26.	Inhibition of Nitrification Test at 200ml/l	<50%

Ref.:g]kfn /fhkq, sf7df08f}+, c;f/ (ut] @)^) ;fn, g]kfn ;/sf/ .(Equivalent year - 2003, Country Environmental Analysis for Nepal, ADB 2004)

Air Quality Standards

National Ambient Air Quality Standards for Nepal

Parameters	Units	Averaging Time	Concentration in ambient Air, maximum
TSP	$\mu\text{g}/\text{m}^3$	Annual	-
		24 - hours*	230
PM ₁₀	$\mu\text{g}/\text{m}^3$	Annual	-
		24 - hours*	120
Sulfur Dioxide	$\mu\text{g}/\text{m}^3$	Annual	50
		24-hours**	70
Nitrogen Dioxide	$\mu\text{g}/\text{m}^3$	Annual	40
		24-hours**	80
Carbon Monoxide	$\mu\text{g}/\text{m}^3$	8hours	10000
		15 minutes	100000
Lead	$\mu\text{g}/\text{m}^3$	Annual	0.5
		24-hour	-
Benzene	$\mu\text{g}/\text{m}^3$	Annual	20
		24-hours*	-

Ref.: *Environment Sector Program Support, Ministry of Population and Environment, Kathmandu: Ambient Air Quality Monitoring in KathmanduValley, Yearly Report for the year 2003, March 2004*

Note:

* : 24 hourly values shall be met 95% of the time in a year. 18days per calendar year the standard may exceed but not on two consecutive days.

** : 24 hourly standards for NO₂ and SO₂ are not to be controlled before MOPE has recommended appropriate test methodologies. This will be done before 2005.

Recommended Noise Standards for Nepal

These standards describe the limiting levels of sound established on the basis of present knowledge for preservation of public health and welfare. These standards are consistent with speech, annoyance, and hearing conservation requirements for receivers within areas grouped, according to land activities by the noise area classification (NAC) system. Based on NAC, following area could be classified.

Sensitive Area: *The noise produced in the areas like schools, hospitals, telephone exchange comes under the sensitive area category. It includes noise produced during different activities like playing, shouting of children, ambulance, telephone rings etc. These areas are categorized as sensitive area as these areas are even disturbed by faint noise level. Children and hospital patient get affected by even a small level of noise.*

Residential Area: *The dominating noise sources in this area are audio, dog barking, light vehicles, conversation of people, bell ringing in temple etc. The noise from different human activities is the major contributing factors in this category. The people in the area need to get relax from their busy working day. So this area is also considered as the major noise effecting area.*

Commercial and Tourist Area: *The predominating noise sources of commercial and tourist area are people's voice, audio, traffic etc. The noise in these areas needs to be managed properly because these areas attract tourists from around the world and that has great contribution in the economy of the country.*

Industrial Area: *Industrial area receives noises which contains predominantly low or high frequencies and is impulsive or have unpleasant and disruptive temporal sound pattern. The mechanical processes like weaving, blasting, pressing, drilling, cutting, metal chipping and riveting etc are the significant sources of noise pollution in the industrial area.*

High Traffic Area: *The noise produced by different vehicles that may be 2-wheelers or 3 wheelers is transportation noise. The transportation noise has different sources. Different types of noise produced by exhaust system of vehicle, noise produced due to the friction between the road and tire, honking horn, also the moving parts of vehicles produces significant level of noise. In case of Nepal, high level of transportation noise is obtained in*

its urban areas. Different factors like traffic flow rate, proportion of heavy vehicle and nature of road surface are responsible for the increasing noise level.

Noise Area Classifications and the activities included in each classification are listed below:

Noise Area Classification	Land Use Activity	Day Time Noise Level (L_d) dB (A)	Night time Noise Level (L_n) dB (A)	Avg. Day and Night (L_{dn}) dB (A)
1	Sensitive areas (Schools, Hospitals)	55	45	50
2	Residential areas	60	50	50
3	Commercial and tourist areas (residential hotels, cultural activities and nature exhibitions, resorts and group camps, cultural activities and recreational activities)	65	55	53
4	Industrial areas	75	70	60
5	High traffic areas	65	55	56

These values are recommended to reduce the risk of developing permanent hearing loss as a result of high-level noise exposure. The recommendations in this document attempts to protect hearing impairment by focusing on prevention of human exposure to the daily exposure high-level noise.

The recommended noise level value as stated above for different areas in context to Nepal has been prepared with reference to different developed countries (like USA and Japan) and developing countries (like India and Bangladesh) which is based on limits of exposure level. Due to the lack of proper monitoring devices and noise reduction practices, it is not practical to reduce the current noise level of Nepal significantly at once. The current noise level values could be reduced according to prescribed noise level by adopting the noise reducing measures.

Source: NIOSH, OSHA, USA

National Drinking Water Quality Guidelines

Categories	Parameters	Maximum Concentration Limits, (MCLs)	Remarks
Physical	Turbidity, (NTU)	5(10)	
	pH	6.5-8.5*	
	Color, (TCU)	5(15)	
	Taste & Odor		
	Total Dissolved Solid, (mg/l)	1000	
	Electrical Conductivity	1500	
Chemical	Iron, (mg/l)	0.3(3)	
	Manganese, (mg/l)	0.2	
	Arsenic, (mg/l)	0.05	
	Cadmium, (mg/l)	0.003	
	Chromium, (mg/l)	0.05	
	Cyanide, (mg/l)	0.07	
	Fluoride, (mg/l)	0.5-1.5*	
	Lead, (mg/l)	0.01	
	Ammonia, (mg/l)	1.5	
	Chloride, (mg/l)	250	
	Sulphate, (mg/l)	250	
	Nitrate, (mg/l)	50	
	Copper, (mg/l)	1	
	Total Hardness, (mg/l)	500	
	Calcium, (mg/l)	200	
	Zinc, (mg/l)	3	
	Mercury, (mg/l)	0.001	
	Aluminum, (mg/l)	0.2	
	Residual Chlorine, (mg/l)	0.1-0.2*	Only for chlorinated systems
Micro-Biology	E-Coli, (MPN Index / 100ml)	0	
	Total Coliform, (MPN Index / 100ml)	0(95)%)	

Note:

1. *: Represents the range values.
2. (): The indicated values inside the brackets represent for those water if other alternative options are unavailable.

Generic Standards, Tolerance Limits for Wastewater Discharged into Inland Surface Water from Combined Waste Water Treatment Plant

S.N.	Parameters	Tolerance Limits
1.	Temperature, °C	<40
2.	pH	5.5 ~ 9.0
3.	Total Suspended Solids, (mg/l)	50, <i>max</i>
4.	BOD ₅ at 20 °C, (mg/l)	50, <i>max</i>
5.	Oils and Grease, (mg/l)	10, <i>max</i>
6.	Phenolic Compounds, (mg/l)	1, <i>max</i>
7.	Cyanides as CN, (mg/l)	0.2, <i>max</i>
8.	Total Residual Chlorine, (mg/l)	1
9.	Sulfides as S, (mg/l)	2, <i>max</i>
10.	Fluorides as F, (mg/l)	2, <i>max</i>
11.	Arsenic as As, (mg/l)	0.2, <i>max</i>
12.	Cadmium as Cd, (mg/l)	2, <i>max</i>
13.	Hexavalent Chromium as Cr, (mg/l)	0.1, <i>max</i>
14.	Copper as Cu, (mg/l)	3, <i>max</i>
15.	Lead as Pb, (mg/l)	0.1, <i>max</i>
16.	Mercury as Hg, (mg/l)	0.01, <i>max</i>
17.	Nickel as Ni, (mg/l)	3, <i>max</i>
18.	Zinc as Zn, (mg/l)	5, <i>max</i>
19.	Selenium as Se, (mg/l)	0.05, <i>max</i>
20.	Ammoniacal Nitrogen, (mg/l)	50, <i>max</i>
21.	Chemical Oxygen Demand, (mg/l)	250, <i>max</i>
22.	Silver, (mg/l)	0.1, <i>max</i>

Nepal Vehicle Mass Emission Standard for gasoline & Diesel operated Vehicles, 2056 (1999)

Fuel	Vehicle Type	Model Year	CO%	HC, ppm	HSU, %	Test
Petrol	Four wheeler	Up to 1980	4.5	1000	-	Idle
		After 1981	3.0			
	Three wheelers	Up to 1991	4.5	7800	-	Idle
		After 1992	3.0			
	Two wheelers	All	4.5	7800	-	Idle
LPG / CNG	All categories	-	3.0	1000	-	Idle
Diesel	Four wheelers	Up to 1994	-	-	75 (Ka=3.22 per meter)	Free
		After 1995			65 (K=2.44 per meter)	Acceleration
K= Coefficient of light absorption, a measure of blackness of smoke. It is independent of the measurement length.						

Legal Framework for AQMS in Nepal

Actions Undertaken by Government:

- Vehicle exhaust emission control standards:** Nepal introduced vehicle exhaust emission tests in 1994 following the tail-pipe standards of 65 hartridge smoke units (HSU) for diesel operated vehicles and 3% CO for petrol - operated ones. A vehicular color rating system with respect to the exhaust emission standards was introduced. This system provides green stickers to vehicles meeting the emission standard and red stickers to vehicles failing test.
- Nepal Vehicle Mass Emission Standard 2056BS (2000AD):** Nepal vehicle mass standard is the government's major step towards reducing emissions per kilometer of travel. This standard is similar to the EURO - 1 standard.

National Indoor Air Quality Standards, 2009

Pollutant	Maximum Concentration	
	Level	Averaging Time
Particulate Matter, PM ₁₀	120µg/m ³	24 - Hours
	200 µg/m ³	1 - Hour
Particulate Matter, PM _{2.5}	60 µg/m ³	24 - Hours
	100 µg/m ³	1 - Hour
Carbon Monoxide, CO	9ppm (10mg/m ³)	8 - Hours
	35ppm (40mg/m ³)	1 - Hour
Carbon Dioxide, CO ₂	1000ppm (1800mg/m ³)	8 - Hours

Ref.: National Indoor Air Quality Standards & Implementation Guideline, 2009; GoN, Ministry of Environment, Science & Technology, Kathmandu Nepal

Note:

- Units of measure for the standards are parts per million (ppm) by volume, milligrams per cubic meter of air (mg/m³), and microgram per cubic meter of air (µg/m³).
- The use of PM_{2.5} value is preferred.
- No need to monitor / measure both particulate matter (PM₁₀) and particulate matter (PM₁₀). In accordance with World Health Organization (WHO) Air Quality Guidelines for Particulate Matter, Ozone, Nitrogen Dioxide and Sulfur Dioxide, 2005, the PM_{2.5} values can be converted to the corresponding PM₁₀ values by application of a PM_{2.5} / PM₁₀ ratio of 0.5.
- Averaging time can be fixed as per convenience.
- When 1 hour averaging time is chosen, monitoring should be done during cooking hour.
- When 8 hour averaging time is taken, monitoring should cover cooking time too.
- Monitoring of Carbon dioxide is to ensure the adequacy of the ventilation of the monitoring sites.

Emission Limits for Imported and Operated Diesel Generators, 2069 BS (2012)

The GoN endorses carbon monoxide (CO), combined hydrocarbon / oxides of nitrogen (HC+NO_x) and particulate matter emission of smoke that goes into the air for imported (Table 1) and in use diesel generators (Table 2). The prescribed standards are similar to Euro III or Bharat III equivalent. The standards are prescribed in the basis of power rating of the diesel generator capacity.

Table 1: Emission Limits for Newly Imported Diesel Generators

Category, (kW)	CO, (g/kWh)	HC+NO _x , (g/kWh)	PM, (kWh)
<8	8.00	7.50	0.80
8 ~ 19	6.60	7.50	0.80
19 ~ 37	5.50	7.50	0.60
37 ~ 75	5.00	4.70	0.40
75 ~ 130	5.00	4.00	0.30
130 ~ 560	3.50	4.00	0.20

Ref.: Section 62 No.30 Nepal Gazette Part 5 Date: 2069/7/13

Table 2: Emission Limits for In-use Diesel Generators

Category (kW)	CO, (g/kWh)	NO, (g/kWh)	PM, (kWh)	CO, (g/kWh)
<8	8.00	1.30	9.20	1.00
8 ~ 19	6.60	1.30	9.20	0.85
19 ~ 37	6.50	1.30	9.20	0.85
37 ~ 75	6.50	1.30	9.20	0.85
75 ~ 130	5.00	1.30	9.20	0.70
130 ~ 560	5.00	1.30	9.20	0.54

Ref.: Section 62 No.30 Nepal Gazette Part 5 Date: 2068/7/13

Notes:(a) The Sample collection point should be one third part of diesel generator chimney's height; (b) KW=Power factor x KVA; (c) Test Method: The method should be same as mentioned in ISO 8178 or countries producing generator ISO 8178.

Annex 2: Name list of participants, venue of Workshop

Nepal Livestock Sector Innovation Project
Stakeholders Consultation Program

Region: Western region

Place: Pokhara

Date: 29 November, 2016

S.N	Name	Organization	Signature
1	Dr. Ashesh Chetani	Pokhara Himalayan meals	
2	Shrawan Kumar Basal	Pokhara on kishan	
3	Fareeda Shiny Bhandari	Plantamano fresh house	
4	Dr. Kishor Acharya	NVA Pokhara	
5	Dr. Subash Chandu Choudhary	NLBC, Pokhara	
6	SIM Bahadur GRC	Livestock Forum PKR	
7	Suzesh Kishor Thapa	Dhokasabi	
8	Shambhu Raj Poudel	RLIC Pokhara	
9	Shiva Hari Acharya	Himal Dairy udhyog	
10	Ramchandra Baral	Luv-mus dairy udhyog	
11	Dr. Ramchandra Karki	DLSD Gyangja	
12	Dr. Parag Adhikari	AHTCS, Pokhara	
13	Dr. Dhirenath Dhungana	DLSD, Tanahu	
14	Dr. Rakesh Prajapati	RDS Pokhara	
15	Purnya Prasad Poudel	Saptagandaki CO	
16	Dr. Kedar Raj Paudel	RVL, Pokhara	
17	Kishor P. Awasthi	NEST, ED	

Nepal Livestock Sector Innovation Project

Stakeholders Consultation Program

Region : Central Region

Place : Kathmandu

Date : 25 December, 2016

S.No.	Name	Organization	Signature
1.	Dr. Anupurna Das	Secretary, MOLD	
2.	Mr. Shyam Paudel	JS, MOLD	
3.	Dr. K.P. Premy	JS, MOLD	
4.	Dr. Banshi Sharma	JS, MOLD	
5.	Dr. B.K. Nirmol	DG, DLS	
6.	Dr. K.C. Thakuri	DG, DLS	
7.	KESHAB ACHHAMI	DOLP	
8.	Shiba Acharya	DLSO Nawalparasi	
9.	Dr. Narayan Shrestha	DLSO, Kavre	
10.	Dr. Dilli Ram Shrestha	DLSO, Chitwan	
11.	Dr. Mad Nath Gaudam	C&O, Hariharbhanjan, 16 th Div	
12.	Narayan Pd. Dhal	MOLD, Account Officer	
13.	Dr. Naboraj Shrestha	MOLD, Singhadaha	
14.	Dr. Bal Bahadur Chandra	MOLD	
15.	Dr. Borun K. Sharma	MOLD	
16.	Dinesh Regmi	MOLD	
17.	Khagendra Raj Shrestha	DLSO Nuwakot	
18.	Rajendra Lamshel	MOLD	
19.	Ram Lakshmi Mahajan	Kalimati fruit & veg	
20.	SALIL DEKOTA	ESMF Consultant	

Nepal Livestock Sector Innovation Project

Stakeholders Consultation Program

Region : Eastern Region

Place : Biratnagar

Date : 29 December, 2016

S.No.	Name	Organization	Signature
1	Dr. Bishu Shrestha	JS, MoLD	
2	Guraj Bawal	MBMAN	
3	Ishwar Mehera	World Bank	
4	Hann Rajshandani	World Bank	
5	Dinesh Regmi	MoLD	
6	Mani Kumar Shrestha	R.L.S., Biratnagar	
7	Dr. Deepak K. Singh	R.L.S. T.C. Duhabi	
8	Dr. Sanjay K. Yadav	RVL Biratnagar	
9	Dr. Madhav Sahal	D.L.S.O. Jhapa	
10	Dr. Kashi Nath Yadav	DLSO Siraha	
11	Raj Kumar Nepal	Nabyang Dairy	
12	Dr. Phera Singh	ASD Biratnagar	
13	Pashupati Dhungana	DLSO Dham	
14	Dr. Susheel Adhikari	DLSO, Morang	
15	Dr. Ashok K. Singh	DLSO, Saptari	
16	Keshab Kumar Shrestha	D.L.S.O. Sunnari	
17	Ram Prasad Mehera	"	
18	Badr Nath Chandra Jain	Samung. P.S.	
19	Rita Khatiwala	mik. Duhabi S.K.	
20	BAM. BAHADUR Giri	Buyme. B. From	
21	Ghatta Raj Kattel	R.D.L.S. - Biratnagar	
22	RAN BAHADUR DHIMAL	meat - Jhapa	

22	रमेश्वरी मिश्र	डॉ. रमेश्वरी मिश्र	
24	Mitra Khatri	MBMAN	H/late
25	Bishmy Nirajya	MBMAN	
26	Hem Bahadur Shrestha	MBMAN	
27	Jambor Datta Bhandari	RDLs	
28	Mr. HOM TS THAPA	RDLs	H/late
29	Bharu Shrestha	RDLs	
30	Bharu Rasbanshi	Thepe, Liv Farmer	
31	काशी माता खत्री	खत्री, Livestock Farmer	
32	Shyam Kuni Shrestha	D.I.S.O. Sonjani	
33	नारायण (विमला)	कर्म. RDLs	
34	विमला कुमारी	"	
35	Narayan Lalal	RDLs	Navajya
36	Bairavath Ray		Ray
37	Tank Acharya	कर्म. कर्म. कर्म.	
38	कर्म. कर्म.	"	
39	राम शरिणी	कर्म. कर्म. कर्म.	
40	कर्म. कर्म.	"	
41	कर्म. कर्म.	"	
42	कर्म. कर्म.	"	
43	Saril Devkota	ESMF Consultant	

Annex 3: Pictorial Highlights of Consultation Workshop

Region: Kathmandu



Annex 3: Pictorial Highlights of Consultation Workshop

Region: Biratnagar



Annex- 4

. ENVIRONMENTAL and SOCIAL ISSUES TO BE CHECKED/VERIFIED DURING PROJECT PLANNING AND IDENTIFICATION PHASE

- Activities Triggering TORT (Trespass, Nuisance, and Negligence) in a community
- Activities triggering EPA/EPR or sectoral acts related to environment
- Factors responsible for creating waste (solid, liquid, gaseous), toxic waste (chemical, batteries from laboratory etc)
- Activities causing possibility of forest degradation and possible loss of vegetation for timber and fuel wood.
- Impact on topography and land use changes
- Activities triggering climate change related impacts
- Activities generating solid and hazardous wastes (laboratories)
- Water quality and quantity
- Sanitation (disposal of waste water and sewerage/septage management)
- Water consumption and pressure on sources
- Surface Water pollution/ pressure :
- Groundwater pollution/ depletion/ pressure:
- Air pollution:, noise pollution etc during construction
- Maintain greenery and open spaces
- Environmental situation and human health (community)..
- Occupational Health and Safety issues during construction and in operation of infrastructures
- Issues related to noise and vibrations and impact on operation of existing facilities
- Possible burden on local infrastructures
- Traffic management related environmental issues.
- Environment friendly construction
- Natural hazard and risks – river cutting, flooding, earthquake, landslides/erosion, fire hazard etc
- Structural safety and status of existing infrastructure
- EOE,
- Issues related to GESI
- Grievances /issues (if any)
- Issues related to resettlement and rehabilitation (if any)

ANNEX- 5

ENVIRONMENTAL SCREENING/CHECKLIST AND FORMAT

The following checklist may be used as a reference guide during environmental screening of the proposed civil works/physical infrastructure upgrading or construction of buildings for laboratory and general civil work under NLSIP.

- Is there flood risks?
 - Water inundation and river-bank cutting due to natural river/stream floods.
 - Temporary water-inundation/water-logging due to blockage of surface water run-off drainage systems (by building, walls, disposal of construction wastes etc).
- Is there landslides & erosion risks?
 - Steep & vulnerable slopes, weak geological areas (in the up and down slopes)
 - Diverted water causing erosion and landslides in the vicinity
 - Check the condition of the present building? Design/structure/Drawings available?
- Does the design incorporate earthquake consideration/standards? Location of the facility in high earthquake risk zone (such as thrust and fault lines).
- Water Management
 - Are slope drainage designs adequate?
 - Are drainage outfalls unprotected against scour and erosions?
 - Are there any disruptions of drinking water or any community water usage?
- Does the plan and design incorporate fire-resistant and fire-fighting considerations?
- Is there a practice of conducting drills/orientations on earthquake, flood, fire-fighting etc?
- Drinking water
 - Is there provision for adequate amount of drinking water as defined in the standards?
 - Is the drinking water quality checked? (check for arsenic in Terai)
 - Is there any pollution to ground water? Is there any issue related to over extraction of underground water?
- Sanitation
 - Does the institution have adequate (toilets as defined in the standards-separate for ladies and gents? Are there separate toilets for visitors/staff?
 - Where and how the toilet wastes (sewage) is dispose of? Septic tanks are built?
 - Is there solid waste collection and disposal system? (waste pit etc)
- Is there existing laboratory or plan to built new laboratory?
 - Where the wastes generated from the laboratory go? (waste, batteries, chemicals)
- What other hazardous wastes may be generated due laboratory? How the wastes are managed? (depends on the materials used/consumed in institutions)
- Soak pits or ponds constructed for waste water?
- Are there protective gears provided to staff?
- For addition of floor, structures in already built structures, please check the quality, strength, and technical viability/design etc. (must be safe and technically acceptable)

- Is it likely that the physical infrastructure results encroachment on the common property (land belonging to forest, impact on wildlife?)
- Are there risks of accident during construction/upgrading (risks to workers and staff, pedestrians, visitors)
- Is there chance of noise pollution/disturbance by upgrading/construction civil works or during operation due to location and lack of sound-proof measures etc?
- Have climatic factors been by the plan and design of the physical facility?
- Have the plan and design incorporated measures to control dusts during construction/upgrading civil works?
- Is the design use defined ventilation standards?
- Is the design use defined light standards?
- What security/safety measures is in-place or the institute plans to have in place?
- Is there a longer-term area perspective plan/master-plan for the development physical infrastructure of the institutions? Is it likely to result congestion?

Environmental Screening Format

A.	Proposed physical infrastructure upgrading/construction activities	
B	Potential environmental issue and screening stage suggestions	
S.N	Issues (during upgrading/ construction and/or operation)	Remarks/suggestions
.	Risks of Flood, landslide/erosion hazards	
.	Water inundation, drainage problem	
.	Earthquake and fire hazards	
.	Drinking water (quality, quantity)	
.	Wastes (Solid, liquid), management of institution wastes	
.	Solid wastes and septage management of institutions	
.	Issues of surface water runoff, issues related to ground water pollution/over extractions etc	
.	Chemical pollution/hazardous wastes (from laboratories, etc)	
.	Encroachment into common property (forest, unregistered land, lands of cultural entity, wildlife habitat etc)	

	Risks of accident during construction/upgrading	
	Noise pollution and disposal of construction wastes	
	Air pollution, dusts	
	Source of construction material, and material processing/ crushing etc	
	Sound, ventilation and light (facility design and standards)	
	Health and safety related issues during construction	
	Use of locally available materials	
	Environmental and climatic consideration in plan and design	
	Long-term infrastructure Master Plan of the institute	
Screening conclusions/ recommendations		
C. Screened By	(Signature and Date)	
I.		
II.		
F. Screening Approved by		

Sketch of the Institute premises, its surroundings and lay-out plan of the infrastructure and other pertinent details.

ANNEX 6

CRITERIA FOR NEGATIVE LISTING RELATED OR LINKED WITH NLSIP

Criteria for Negative Listing related or linked with NLSIP are as follows:

- i. Activity which triggers for conducting Environmental Impact Assessment (EIA)
- ii. NLSIP activities using or depending for its resources from national parks and protected areas or any critical aquatic and terrestrial habitat area.
- iii. NLSIP activities/subprojects that are located in defined/ known high risk zone such as landslide prone area, steep slopes, highly degraded land in hills, riverine area susceptible to annually flooding, and in areas causing large-scale soil erosion.
- iv. Any activity that involves significant land clearance and excavation on slopes greater than 45 degree.
- v. Subproject/activities under NLSIP affecting the nationally or internationally renowned heritage site.
- vi. Sub project/activities under NLSIP that produce hazardous waste
- vii. Subprojects involved in logging or causing any major environmental harm
- viii. Subproject that is likely to eliminate indigenous plant species of ecological significance
- ix. Any activity of the subproject that is likely to make irreversible adverse impact on indigenous communities, women and vulnerable groups
- x. Subproject activities that promote or involve incidence of child labor

ANNEX 8
SAMPLE EMP OF A CONSTRUCTION/MINOR CONSTRUCTION WORK

Impacts	Mitigation Measures	Responsibility	Timing of Action	Mitigation Cost
Structural safety of the existing structure	Ensure it is safe for renovation, and for further construction	Project screening consultant/RI	Prior the preparation of Bid	Included in EMF
Impacts related to stockpiling of construction material	Construction material shall be stored/stock piled in designated area (fenced and secured, covered).	EMP should be integral of part of contract bid document. Contractor should adhere with it. RI/Consultant need to monitor this during construction	During bid document preparation, construction phase	Contractor's responsibility
Impacts related to traffic obstruction and traffic management, safety of staff	Adequate traffic signs, warning signs, and scheduling of transport operator in off office hours to avoid traffic congestion and inconvenience to staff. Scheduling of work in off hours of office and in weekend.	EMP should be integral of part of contract bid document. Contractor should adhere with it. RI/Expert need to monitor this during construction	During bid document preparation,	Awareness raising to staff and visitors
Possibility of contamination of water	Discourage use of direct discharge of water in to water	Proper management of water and	Bid document preparation	Contractor's responsibility.

source due sub project construction activities.	bodies without proper treatment. Awareness raising program in community regarding water sources protection	safe discharge of waste water adhering with national standards are pre requisite for contractor hence such clauses shall be included in bid document	stage, construction stage	
Impacts related to health and safety of workers, and /staff	Use of safety signs in places, fencing of active work places/construction sites provision of PPE to workers.	Contractor	Clause to include in bid document, applied during construction phase	contractor's responsibility

Socio-economic, Cultural, Environment

Disturbance to local residents, community, bazaar, obstruction to their access, pollution etc	Prior information dissemination to the public regarding the nature, schedule of work in advance Timely completion of work to minimize disturbance Adherence to pollution control measures as elaborated above.	Information dissemination by the RI compliance by the contractor	Prior and during construction	Included in items under physical environment/project cost
Pressure on local infrastructures due to influx of workers	Record keeping of workers Provide orientation and training to workers for maintaining social harmony, prohibition of ill social behaviors (alcohol, gambling etc) Local people shall be engaged in construction as	Contractor	During construction	No cost allocated (Temporary residual impact)

	per their skills and qualifications.			
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ANNEX 9

ENVIRONMENTAL CODE OF BEST PRACTICES FOR SUB PROJECTS/ACTIVITIES UNDER NLSIP

IEE or EIA report of category II sub projects will have built in environment and social management action plan which will fully describe appropriate preventive and curative mitigation measures and their implementation procedures. The category III sub project that are not subjected to formal environmental studies (e.g IEE or EIA) will require adopting Environmental Code of Practice (ECP) both as preventive and curative measures. The ECP described here for group of sub-projects could eliminate or minimize environmental and social risks at acceptable levels. ECP will be included in the clauses of the contractual agreements to be signed between proponents- the subproject implementers and the concerned authorities implementing NLSIP. These best practices should be applied in conjunction with the standard technical standards of concerned infrastructures for preparation of designs. There are generic and project specific best practices as well. Such type of projects within NLSIP requires specific best practices to be followed. Accordingly, best practices to be followed for specific type of sub projects and generic environmental best practices to be followed are elaborated below.

ECP primarily focuses in prevention i.e controlling potential hazards at all stages of project value chain, it is a safety management method. The commodity producers, processors/manufactures, traders will have to adapt good practices to meet safety and quality requirements. The good practices commonly are Good Agricultural Practice (GAP), Good Veterinary Practice (GVP), Good Manufacturing Practice (GMP).

C. Implementation/Construction

Construction Approach

- Local people or people's representatives should be involved construction management to better care local environment, generate local ownership feeling and to enhance transfer of technology to local people.

- Rural population of Nepal is heavily unemployed or under-employed. Thus, as far as possible labour-based approach should be applied by deploying locally available labour force or workers from neighboring communities. Due to lack of high quality work management at local level, use of heavy equipments should be minimized in environment friendly local infrastructure construction.
- The construction materials (sand, stones, wood etc) should be extracted as per need only. Sites for quarrying should be selected such that the quarrying activity should not result into slope instability, erosion, disruption of natural drainage, riverbank cutting, destruction of vegetation and farmland and other physical resource. All borrow pit sites should be stabilized immediately after completion of quarry activity.

Managing Risks of Air, Water and Noise Pollution

- No horn region should be marked around institutions
- Waste and fluids from labor camps should be managed properly. Organic waste should be composed at least 30 meters away from the water sources.
- If possible, water should be sprinkled if dust is carried out by wind during construction phase.

Managing Risks of Chemicals, hazardous wastes from laboratories etc

- Special care should be applied to avoid chemical pollution of land and water bodies due to spilling of chemicals, fuel, lubricants, etc.

Appropriate Technology

- Maximum consideration should be made to use locally available construction materials.

Managing Risks of Air, Water and Noise Pollution

- Waste and fluids should be managed properly. Air and noise pollution will only nominal in such construction activities. However, when there are chances of such pollution, appropriate controlling measures should be applied like sprinkling of water.

Annex 10

IPs & Vulnerable Groups Impact Screening & Categorization Form

A. Project Data

Sub-project Title:

B. Identification of Impact on IPs/ Vulnerable Group in Sub-project Area

Impact on Indigenous Peoples (IPs)/ Ethnic Minority(EM)/ Vulnerable Group	Not known	Yes	No	Remarks or identified problems, if any
Are there Dalits, Janjatis, or ethnic minorities present in project locations?				
Do they maintain distinctive customs and traditions and economic activities in their locality?				
Will the project in any way affect their economic and social activity and make them more vulnerable?				
Will the project affect their socioeconomic and cultural integrity?				
Will the project disrupt their community life?				
Will the project positively affect their health, education, livelihood or social security status?				
Will the project negatively affect their health, education, livelihood or social security status?				
Will the project alter or undermine their local knowledge, customary behaviors or institutions?				
Are IP and VC households likely to lose customary rights over, access to land?				

Are IPs and VCs likely to lose shelter/business and be displaced?				
In case no disruption of indigenous community life as a whole, will there be loss of housing, strip of land, crops, trees and other fixed assets owned or controlled by individual indigenous households?				

C. Specific Impacts on IPs and VCs

No of IP families losing land	No VC families losing land	No of IP HHs losing house over 10% of their residence	Govt land required in Sq. mts.	Forest land required in Sq mts	No of IP/VC houses affected	No of IP/VC shops affected	No of other IP/VC structures affected	No of IP/VC Squatters affected	Public utilities affected

D. Anticipated project impacts on indigenous peoples

Project activity and output	Anticipated positive effect	Anticipated negative effect
1.		
2.		
3.		
4.		
5.		

E. Decision on Categorization

After reviewing the above, it is determined that the sub-project is:

Categorized as an A project, an Indigenous Peoples Development Plan (IPDP) is required

Categorized as a B project, a specific action favorable to indigenous peoples is required and addressed through a specific provision in related plans such as a Resettlement Plan, or a general Social Action Plan

Categorized as a 'C' project, no IPDP or specific action required

Prepared by:

(

Date:

Reviewed by:

Date:

Approved by:

Date:

Endorsed by:

Date:

Annex 11

Baseline Condition of the Existing Laboratories and Adherence with Best Environmental Practices

There are seven existing major veterinary laboratories in Nepal that deals with the diagnosis of veterinary diseases and cases. It was observed during the preparation of ESMF that laboratory has constraints in regular cleaning and disinfection, proper waste disposal (autoclaving), personal protection, washing of lab coats and risk awareness. Regarding other regional veterinary laboratories (RVL) the availability of the facilities are even poorer.

For veterinary laboratory support under NLSIP must follow "Hierarchy of controls" to select ways of dealing with workplace hazards. In this context, it is advisable to for all the labs supported under NLSIP to systematically remove it from the workplace, rather than relying on staff/workers to reduce their exposure. For this purpose following measures are recommended;

- Engineering control measures: introduction of measures so that it will change or enhance work environment to reduce work related hazards. Examples; installation of good ventilations, installation of chemical fume hoods, biological safety cabinets, installation of sewage treatment plants
- Administrative control measures: e.g modifying work schedule, practices (developing standard operating practices for chemical handling), SOP for testing protocols
- Adhering with good work practices; i.e introduction of practices for safe and proper work that at used to reduce the duration, frequency or intensity of exposure to hazard. (e. no mouth pipetting, chemical substitution where feasible)
- Use of personal protective equipment (PPE), use of gloves, masks, eye glasses, safety boots, and other PPEs as per nature of testing and scope of laboratory services. PPE should be selected based upon the hazard to the worker.

Chemical Hazard: The different types of chemicals used in the laboratory possesses physical and/or health threats to staff and the laboratory workers. The chemicals includes toxins, carcinogens, geno toxic waste, radioactive waste etc. For these types of hazards the standard recommends five major elements which includes 1) hazard identification, 2) Chemical hygiene plan, 3) Information and training, 4) Exposure monitoring.

Besides these, the recipient laboratory under NLSIP, should prepare **Chemical Hygiene Plan (CHP)**. The CHP is developed to provide guidelines for prudent practices and procedures for the use of chemicals in the laboratory. The laboratory standard requires that the CHP set forth procedures, equipment, PPE, and work practices capable of protecting workers from the health hazards due to chemicals used in the laboratory. The NLSIP recipient laboratory should include CHP which includes, 1) Standard Operating Procedures

(SOP), Exposure control measures, use of air, water, noise pollution control, information and training to employee, medical consultations and examinations of staff/workers.

Energy and Water Conservation Measures: The laboratories supported under NLSIP, must ensure that water and energy conservation requirements are integral component of the project

Solid, liquid, gaseous waste management: The recipient laboratory must integrate these ancillary environmentally friendly technology in their laboratory. For veterinarian clinics, this waste generally includes the following:

- **Sharps waste** – Any needles, syringes, suture needles, scalpels and other similar waste.
- **Animal waste** – Animal carcasses, body parts, bedding and related wastes that come into contact with bodily fluids.
- **Hazardous waste** – Chemo or other pharmaceutical waste.

Wastes in the veterinary laboratories are generated in all forms of matter. In addition, the wastes generated bear the characteristics of infectious and sharps, which require special attention. The basic waste disposal practice comprises the disinfecting and disposal activities.

Disinfection of wastes depends upon the types of the wastes arising from the laboratory activities. Glassware and other lab equipments like scissors and forceps are autoclaved first and then sterilized in a hot air oven. In case of broken glassware they are simply disposed off in the burial pits. For combustible wastes like papers and plastics simple combustion of the waste in the laboratory premises is carried out. Largely the combustion is open and seldom is carried out in the pits. Besides these wastes, the matter of prime concern is the disposal of the infectious wastes being generated from the laboratory. The infectious wastes include carcasses of dead animals, tissues and organs brought to the laboratory for the test. In most of the laboratories, the disposed infectious wastes are smeared over with Sodium Chloride (common salt) in order to enhance biodegradation inside the pit and at the top lime powder is placed. The wastes are continually added up in the pits and so far emptying the filled up pits have not been conducted.

Not any laboratory has the practice of weighing the wastes that are subjected for disposal. Regarding the dimension of the pit, there is no recorded dimension of the pits being utilized for disposal of the wastes. So far, there is no evidence or even estimation on how many times has the pit been filled to its capacity. This gap in information led in difficulty in quantifying the amount of wastes being generated from the laboratory.

Burial pits should be provided with metallic lid and locking system. In order to prevent the animals from digging up the pits, the surface of the pit is well concreted. However, the extent of brick lining in the pit and what condition is at the base of pit is still a matter of investigation. The location of burial pits is also crucial factor. In most of the laboratories, burial pits are

constructed within the laboratory premises and in case of any laboratory; the pits are constructed within 50 feet from the nearest laboratory building. Similar is the case with the presence of water bodies from the pit site. In order to refurbish the laboratory waste management and disposal following recommendations are made:

- Recording the quantity of the wastes generated out from the each sections of laboratory should be done.
- Waste quantification should be based on the types of waste i.e. glassware, infectious, sharps, plastics, papers, textile and so on.
- While disposing the wastes the pits should be categorically allocated for different types of waste.
- Open burning of the wastes should be limited to minimum as far as practicable.
- The pit dimension and the volume of waste added each time should be measured.
- When designing a burial pit laboratory authorities are recommended to follow the instructions provided in health care waste management guidelines, 2014 of GoN

In summary, the above mentioned practices are also mentioned in Health Care Waste Management Guidelines, 2014 of the ministry of health/GoN which could be referred as a reference

Record Keeping: NLSIP recipient laboratory must maintain accurate record of exposure monitoring activities and other details.

Assigning of roles and responsibilities of laboratory staff and workers: The project should develop detail ToR, roles and responsibilities of all the staff engaged in laboratory. The mechanisms for reporting all accidents and potential chemical exposures immediately to the responsible person within laboraotry.

Capacity Building of Laboratory Staff: The capacity of the laboratory and human resources shall be revisited and based on the need assessment such activities will be devised. Some of the module of trainings are:

- Hands on training/ evaluation
- **Regular** competence evaluation
- Maintenance of a **training program** relevant to present and anticipated needs of the laboratory→ continuous improvement
- Training on operation of solid waste, water, and waste water treatment facilities including its operation and maintenance.

Most Common Zoonotic Diseases in Workers

Workers that work with animals may be exposed to a number of zoonotic diseases. Examples of some of the zoonotic diseases that workers may be exposed to are listed in the table below.

Disease	Disease agent	Animals				
		Cats	Dogs	Birds	Farm Animals	Wild Animals
Brucellosis	<i>Brucella canis</i>		X			
Campylobacteriosis	<i>Campylobacter jejuni</i>	X	X		X	
Cat Scratch Fever	<i>Bartonella henselae</i>	X				
Cryptococcosis	<i>Cryptococcus neoformans</i> and other species			X		
Hemorrhagic fever with renal syndrome (HFRS) and hantavirus pulmonary syndrome (HPS)	Hantavirus					X
Lymphocytic choriomeningitis	Lymphocytic choriomeningitis virus (LCMV)			X		
<i>Pasteurella pneumonia</i>	<i>Pasteurella haemolytica</i>				X	
Histoplasmosis	<i>Histoplasma capsulatum</i>			X		
Orf	Poxvirus				X	
Plague	<i>Yersinia pestis</i>					X
Q-fever	<i>Coxiella burnetii</i>				X	
Rabies	Rabies virus	X	X			
Salmonellosis	<i>Salmonella enterica</i> serovar Typhi				X	
Toxoplasmosis	<i>Toxoplasma gondii</i>	X				
Tularemia	<i>Tularemia francisella</i>					X

CDC Summary of Recommended Biosafety Levels for Infectious Agents				
Biosafety Level	Agent Characteristics	Practices	Safety Equipment	Facilities (secondary barriers)
BSL-1	Not known to consistently cause disease in healthy adults	Standard microbiological Practices	None	Open bench top sink
BSL-2	Associated with human disease, hazard from percutaneous injury, ingestion, mucous membrane exposure	Standard microbiological Practices Limited access Biohazard warning signs Sharps precautions Biosafety manual defining any needed waste decontamination or medical surveillance policies.	Class I or II biosafety cabinets (BSCs) or other containment devices used for all agents that cause splashes or aerosols of infectious materials Laboratory coats and gloves Face protection as needed	Open bench top sink Autoclave
BSL-3	Indigenous or exotic agents with potential for aerosol transmission; disease may have serious or lethal consequences	All BSL-2 practices Controlled access Decontamination of all waste Decontamination of laboratory clothing before laundering Baseline serum	Class I or II BSCs or other physical containment devices used for all open manipulations of agents Protective lab clothing and gloves Respiratory protection as needed	Open bench top sink Autoclave Physical separation from access corridors Self-closing, double-door access Exhaust air not recirculated Negative airflow in laboratory
BSL-4	Dangerous/exotic agents which pose high risk of life-threatening disease; aerosol-transmitted lab infections; or related agents with unknown risk of transmission	All BSL-3 practices Clothing change before entering Shower on exit All material decontaminated on exit from facility	All procedures conducted in Class III BSCs, or Class I or II BSCs in combination with full-body, air-supplied, positive pressure personnel suit.	BSL-3 plus: Separate building or isolated zone Dedicated supply and exhaust, vacuum, and decontamination systems Other requirements outlined in the text

Annex 12

Flow diagram showing procedures for conducting IEE and EIA studies under NLSIP

