Initial Environmental Examination

August 2022

Nepal: Strengthening Systems to Protect and Uplift Women Project

Construction of Rehabilitation Center in Bhaktapur and Construction of Women, Children, and Senior Citizen Service Centers in Madhesh Pradesh, Nepal

Prepared by Ministry of Women, Children and Senior Citizens for the Asian Development Bank.

ABBREVIATIONS

ADB	Asian Development Bank
APO	area police office
EARF	environmental assessment and review framework
DPO	district police office
EIA	environmental impact assessment
EMP	environmental management plan
EPA	Environment Protection Act
FGD	focus group discussion
GBV	gender-based violence
GESI	gender equality and social inclusion
GRM	grievance redress mechanism
IEE	initial environmental examination
MOWCSC	Ministry of Women, Children and Senior Citizen
NPO	Nepal Police Office
OHS	occupational health and safety
PMU	project management unit
REA	rapid environmental assessment
SDG	Sustainable Development Goal
SEMP	site-specific environmental management plan
SPS	Safeguard Policy Statement
SOP	standard operating procedure
UNOPS	United Nations Office for Project Services
WCSCSC	Women, Children and Senior Citizen Service Center

WEIGHTS AND MEASURES

C	Celsius
ha	hectare
m	meter
mm	millimeter

NOTE

In this report, "$" refers to United States dollars.

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EXECUTIVE SUMMARY

The Strengthening Systems to Protect and Uplift Women Project aims to support the Government of Nepal in its efforts to provide effective services to gender-based violence (GBV) survivors and to reduce the incidence of GBV. The project will (i) provide long-term rehabilitation services for GBV survivors; (ii) fill gaps in availability of survivor-centric and gender-sensitive infrastructure within the Nepal Police to ensure a safe, confidential, and respectful environment for reporting cases; (iii) build service providers' capacity; and (iv) increase awareness on GBV prevention and available services. The project will focus on the three provinces of Madhesh Pradesh, Lumbini, and Sudurpaschim. The project will also build a new national level rehabilitation center located in Bhaktapur upon the government's request.

The project includes physical infrastructure components—establishment of women, children, and senior citizen service center (WCSCSC) facilities within select police offices, and long-term rehabilitation centers for GBV survivors to be operated by the federal Ministry of Women, Children, and Senior Citizens (MOWCSC) and relevant province-level ministries. The project will establish separate WCSCSC facilities in 15 selected district and area police offices (APO) within the 3 identified provinces. Expansion of adequate WCSCSC facilities in APOs is expected to improve accessibility of quality police services. Moreover, the selection of APOs considers factors such as GBV caseload and proximity to police offices with proper WCSCSCs. The design of the new WCSCSC buildings will be gender-sensitive, disability-friendly, and will incorporate features to ensure survivors' privacy. The project will also establish four long-term rehabilitation centers—three centers at the province level and a national-level rehabilitation center. The centers will offer a proper space for survivors to recover and facilitate integrated services such as shelter, psychosocial counselling, life skills training, health and legal services, and therapeutic activities. For the survivors' economic empowerment, the centers will provide livelihood and skills training, financial literacy training, and grants for continuing education in partnership with civil society organizations and training providers. The design of all WCSCSC and rehabilitation center buildings will integrate climate and disaster-resilient features.

Implementation arrangements. The MOWCSC is the executing agency of the project. There will be four implementing agencies: (i) Department of Urban Development and Building Construction (DUDBC) under the federal Ministry of Urban Development; (ii) Ministry of Social Development in Sudurpaschim Province; (iii) Ministry of Women, Children and Senior Citizens in Lumbini Province; and (iv) Ministry of Women, Children, Youth, and Sports in Madhesh Pradesh. DUDBC will be responsible for the construction of all police WCSCSC buildings in close coordination with the Nepal police and the national rehabilitation center. The province-level implementing agencies will carry out construction of rehabilitation centers and selected awareness activities in their respective provinces with support from MOWCSC. A central project management unit (PMU) at MOWCSC, headed by a project director, will be responsible for overall project implementation, monitoring, and reporting. Project implementation units (PIUs) will be formed in each of the three provincial implementing agencies. In the case of DUDBC, the project coordination office established for the Regional Urban Development Project of the Asian Development Bank (ADB) will also function as the PIU for this project. To provide design, supervision, and procurement support to the executing and implementing agencies, the United Nations Office for Project Services (UNOPS) shall be engaged under a separate technical assistance administered by ADB. UNOPS will also be responsible for the implementation of safeguards requirements for all subprojects

Subproject selection. The proposed subprojects at different locations are identified based on the agreed selection criteria and screening procedure in the environmental asessment and review framework. The sites for WCSCSC buildings were selected, in close consultation with the Nepal police, based on the GBV caseload and needs of communities served by the district or APO. In the case of rehabilitation centers, the sites were identified based on the

recommendation of the province-level ministry and MOWCSC. A study of the subprojects was conducted to assess the technical feasibility for constructing the buildings per required design and to assess whether the selected locations serve the needs of the intended beneficiaries.

Categorization. The project is classified as category B for environment according to ADB's Safeguard Policy Statement (SPS) (2009) and the findings of rapid environmental assessment on the sample subprojects. No significant impacts are envisioned. This initial environmental examination (IEE) report has been prepared based on the technical feasibility report and following requirements of SPS 2009 and Government of Nepal laws, rules, and regulations. The IEE has been undertaken to assess the environmental impacts of the subprojects and provide mitigation and monitoring measures to ensure that no significant environmental impacts occur because of subproject activities.

Subproject scope. This IEE report covers five subprojects—four WCSCSCs in Madhesh Pradesh and one national rehabilitation center in Bhaktapur. The four WCSCSCs will be built in APO Bhediya, Surunga-2; APO Gaushala, Gaushala-5, Mahottari; APO Jeetpurisimara, Jeetpursimara-1, Bara; and APO Pokhariya, Pokhariya-4, Parsa of Madhesh Pradesh. The national rehabilitation center will be in Suryavinayak-7, Bhaktapur. The design of the new WCSCSC buildings will be gender-sensitive, disability-friendly, and will incorporate features to ensure survivors' privacy. The buildings will include facilities for immediate accommodation of GBV survivors, including women with young children, and will also include residential facilities for female police personnel. The rehabilitation center will offer a proper space for survivors to recover and provide integrated services such as shelter, psychosocial counseling, life skills training,[1] livelihood training, health and legal services, and therapeutic activities. The design of all facilities will integrate climate and disaster-resilient features.

Description of the environment. The subprojects in Saptari, Mahottari, Bara and Parsa districts are in the Terai area. The subproject in Bhaktapur is in a hilly area. The municipalities of Rampur, Ghorahi, Siddharthanagar, and Pratappur have flat ground profiles. The municipalities of Surunga, Gaushala, Jitpursimara and Pokhariya have flat ground profiles whereas the municipality of Suryavinayak is in a sloppy to flat terrain. The subproject areas are within the lower tropical temperate climate and warm temperate zones. The Koshi river is the main source of water in Saptari and Mahottari districts while other rivers and streams are in all five different districts. Rivers and rivulets are the major sources of water in all subproject districts. Mixed forest is observed in the subproject area and several community forests are recorded in the subproject wards except in Surunga-2 and Jitpursimara-1. The area's biodiversity is characterized by the existence of various species of flora, mammals, and birds where Parsa wildlife reserve is located near the subprojects in Bara and Parsa districts.

The subproject area features agriculture belts, scattered vegetation and forests, and clustered settlements, along with a few small communities spread across the hills. The area's economy is agriculture-based; the survey shows that 18%–33% of the population is involved in agriculture and 18-33% of the population is dependent on foreign employment, specifically in India. The economic condition of the families in the service area seems satisfactory in terms of monthly income levels.

Environmental impacts. During the construction phase, impacts will mainly be due to soil erosion and pollution, which will be minimized by using good practices in construction. Occupational health and safety along with community health and safety will also be considered during the construction phase, as well as the risks while working in the current context of the coronavirus disease pandemic. During operation, the health and safety of the community are crucial concerns that can be mitigated by attention and awareness. The IEE

[1] Life skills training includes but is not limited to counseling, safety planning, and managing personal health and well-being.

has suggested the appropriate measures for addressing adverse impacts during the project's construction and operation phases.

Environment management plan. An environmental management plan (EMP) is included in this IEE, which covers (i) mitigation measures for environmental impacts during implementation; (ii) an environmental monitoring program that identifies the responsible entities for mitigation, monitoring, budget, and reporting; (iii) public consultation and information disclosure; and (iv) grievance redress mechanisms. A number of significant impacts have already been reduced by amending project designs. To ensure that the recommended mitigation and monitoring actions are duly implemented, assessed, and disseminated to project stakeholders for feedback and improvement, the safeguards teams will be mobilized at all work fronts and tiers. The contractor will be required to prepare a site-specific EMP document before the start of construction works, and the contractor will be required to assign a site-based environmental, health, and safety focal person for the subproject. Indicative cost for EMP implementation is $0.9 million, which is less than 1.0% of the total subproject cost. The IEE and the EMP, including relevant costs, will be updated based on the final detailed design, which shall be submitted to ADB prior to disclosure. The cleared EMP will be included in the civil works bidding and contract documents.

Consultation, disclosure, and grievance redress mechanism. During IEE preparation, public consultations were held with project beneficiaries, Nepal Police Office (NPO) (including district police offices (DPO) and APOs), representatives from the provincial ministry and the municipality, and other stakeholders from 7 September 2021 to 12 February 2022. About 28 persons comprising 28 male and 4 female from different castes and ethnicities (Brahmin/chhetri- 14, Indigenous people-9 and Dalit-1 and Madhesi-4) were consulted. The participants discussed and suggested various issues including community health and safety, standard building design, furnishings, greenery promotion around the area, means to keep children occupied such as kids playing field, dust control from nearby road, etc. These consultations will continue throughout subproject development and implementation. A grievance redress mechanism will also be put in place to ensure that any project-related complaints are addressed quickly.

Monitoring and reporting. The PMU and its team, including representatives from the provincial ministry and the NPO, will be responsible for environmental monitoring. The PIUs will submit monthly, quarterly, and semiannual reports to the PMU, which will consolidate the monthly reports and send semiannual monitoring reports to ADB. Once cleared, ADB will post the environmental monitoring reports in its website.

Conclusions and recommendations. The project will establish WCSCSCs and rehabilitation center which will bring borader benefits to the target community, i.e., GBV survivors, and will create greater awareness and improvement in gender sensitization. Though there are some risks in the biological, physical, and socioeconomic environment of the area, the analysis shows that subproject benefits outweigh these risks. To add, these potential risks can be overcome through proper planning, coordination, and management, along with constructive engagement of the local people. Based on the findings of this IEE, the project does not have significant adverse impacts and the classification of the subproject as category B for environment is confirmed. The subproject is exempted from securing any national environmental clearance, and local permits and clearances will be secured prior to commencement of works. No further special study or detailed environmental impact assessment needs to be undertaken.

I. INTRODUCTION

A. Background

1. The Government of Nepal has requested a grant not exceeding $12 million from Asian Development Bank (ADB) Special Funds resources (Asian Development Fund 13 [ADF-13] Thematic Pool) to strengthen gender equality and social inclusion (GESI)-responsive services to gender-based violence (GBV) survivors and reduce its incidence. The government has been encouraged to improve GBV survivors' access to legal protection and social support services through the Establishing Women and Children Service Centers Project (EWCSCP), 2009–2018. EWCSCP supported the Nepal Police in establishing women, children, and senior citizen service centers (WCSCSCs) in 20 districts with high incidence of GBV to provide special assistance to women and children experiencing violence and strengthen reporting, case handling, and awareness at the community level. However, further support is needed to expand the coverage of WCSCSC facilities and reinforce the provision of social, legal and rehabilitation services to GBV survivors. Given that provincial governments are mandated to construct and establish long-term rehabilitation centers for GBV survivors, the proposed Strengthening Systems to Protect and Uplift Women Project will thus build on the lessons and successes of the EWCSCP to continue support for GBV services and address the remaining gaps, including establishment of the rehabilitation centers.

2. The project aims to support the government in its efforts to provide effective GESI-responsive services to GBV survivors and reduce the incidence of GBV. The proposed project will help strengthen the government's response to GBV in Nepal by (i) providing long-term rehabilitation services for GBV survivors; (ii) filling gaps in the availability of survivor-centric and gender-sensitive infrastructure within the Nepal Police to ensure safe, confidential, and respectful environment for reporting cases; (iii) building service providers' capacity; and (iv) increasing awareness on GBV prevention and available services. The project is aligned with the government's vision of a "Prosperous Nepal, Happy Nepali"[2] which envisions a society without discrimination, violence, or crime.

3. The project outcome is access to and quality of GBV services in project areas improved. This is expected to be achieved through four outputs, designed in consultation with relevant government agencies and civil society organizations (CSO), as follows.

4. **Output 1: WCSCSC services strengthened.** The project will build new WCSCSC facilities to strengthen provision of survivor-centric services by the police in selected district police offices (DPO) and area police offices (APO) within the three identified provinces. Expansion of adequate facilities in APOs is expected to improve accessibility to quality service and encourage reporting. Moreover, the selection of APOs considers factors such as GBV caseload and proximity to police offices with proper WCSCSCs. The design of the new WCSCSC buildings will be gender-sensitive, disability-friendly, and will incorporate features to ensure survivors' privacy. The buildings will include facilities for short-term accommodation, including for women with young children and elderly women. The design of these facilities will also integrate climate and disaster-resilient features. Drawing from EWCSCP's experience, the facilities will include residences for female police to encourage deployment and retention of female personnel. This output also includes the set-up of a proper referral data system within the WCSCSCs to aid in case monitoring.

5. **Output 2: Rehabilitation services for GBV survivors strengthened.** To fill the gap in long-term rehabilitation services, the project will establish three centers at the province level

[2] Government of Nepal, National Planning Commission. 2020. *The Fifteenth Plan Fiscal Year 2019/2020–2023/2024*. Kathmandu.

and a national level rehabilitation center (paragraph 9). The centers will offer a proper space for survivors to recover and facilitate integrated services such as shelter, psychosocial counseling, life skills training,[3] health and legal services, and therapeutic activities. For the survivors' economic empowerment, the centers will provide livelihood and skills training, financial literacy training, and grants for continuing education in partnerships with civil society organizations and training providers. The project will also pilot the concept of second stage homes that will offer affordable accommodations within the rehabilitation centers to provide a sense of community and ease survivors' reintegration into society. The federal Ministry of Women, Children, and Senior Citizens (MOWCSC) will prepare standard operating procedures for these rehabilitation centers and outline options to ensure sustainability of the centers beyond the project period.[4] The design of the centers will include climate and disaster-resilient and disability-friendly features.

6. **Output 3: Community awareness on GBV prevention and services increased**. The project will raise awareness on existing and emerging GBV issues,[5] positive gender norms, available services, and legal provisions.[6] Channels for creating awareness include (i) public dialogues and street dramas, (ii) awareness programs on local radio stations, (iii) design and delivery of a television series to promote positive gender norms, and (iv) production of four to five short videos tailored to specific age groups that will be disseminated via media platforms that are accessible without significant user fees. To ensure the messages are absorbed, listeners' groups will be formed to discuss the programs aired through radio stations. Moreover, audio and visual materials will be developed in local languages as appropriate to ensure wider reach. Efforts will be made to meaningfully engage men, boys, and youth groups from diverse socioeconomic groups as advocates against GBV and for women's rights to create a safe community. Building on the lessons from EWCSCP, community awareness activities will mobilize police to build trust. These activities are further expected to contribute to reducing GBV incidence and shifting attitudes to help break the cycle of violence across generations.

7. **Output 4: Institutional capacity for providing effective GBV services developed.** To strengthen capacity of service providers and key stakeholders for responding effectively to GBV, the project will (i) deliver gender-responsive investigation and communication skills training to junior and senior police personnel, based on existing training manuals originally formulated under EWCSCP;[7] (ii) upgrade the existing psychosocial counseling training and deliver the revised training to capacitate trainees to identify survivors' need for psychosocial counseling and provide first-stage mental and emotional support;[8] (iii) train rehabilitation center staff on sensitive and respectful communication, ethical guidelines, preparedness, safety protocols, and case management; (iv) orient key government officials across line ministries on GBV-related legal provisions such as the Sexual Harassment at Workplace Act, 2015 to support them in integrating the provisions into their respective ministries' programs and codes of conduct; and (v) provide training opportunities related to new approaches in

[3] Life skills training includes but is not limited to counseling, safety planning, and managing personal health and well-being.

[4] The government will contribute to approximately 50% of the operating costs of the rehabilitation centers (excluding taxes and duties) during the project period. This is likely to enhance government ownership and help lay the groundwork for ensuring sustainability beyond project period.

[5] Examples of emerging GBV issues include cybercrime, sexual grooming, and intimate partner violence among younger unmarried couples or those in live-in relationships.

[6] For example, the National Gender Equality Policy 2020 and the Sexual Harassment at Workplace Act 2015.

[7] The GRICS training was originally formulated under ADB's EWCSCP and subsequently revised under the Integrated Program for Strengthening Security and Justice supported by the Foreign, Commonwealth and Development Office. ADB reviewed the existing GRICS training manual during project preparation and found it to be comprehensive.

[8] The training will be upgraded from a 10-day to 16-day course to make it eligible for credit hours and encourage enrollment and completion.

countering GBV to service providers, and officials and other stakeholders working on GBV issues.

8. The MOWCSC is the executing agency of the project. There will be four implementing agencies: (i) Department of Urban development and Building Construction (DUDBC) under the federal Ministry of Urban Development; (ii) Ministry of Social Development in Sudurpaschim Province; (iii) Ministry of Women, Children and Senior Citizens in Lumbini Province; and (iv) Ministry of Women, Children, Youth and Sports in Madhesh Pradesh. DUDBC will be responsible for the construction of all police WCSCSC buildings in close coordination with the Nepal Police and the national rehabilitation center. The province-level implementing agencies will construct rehabilitation centers and deliver selected awareness activities in their respective provinces with support from MOWCSC. A central project management unit (PMU) at MOWCSC, headed by a project director, will be responsible for overall project implementation, monitoring, and reporting. Project implementation units (PIUs) will be formed in each of the three provincial implementing agencies. In the case of DUDBC, the project coordination office established for ADB's Regional Urban Development Project will also function as a PIU for this project. To provide design, supervision, and procurement support to the executing and implementing agencies, the United Nations Office for Project Services (UNOPS) shall be engaged under a separate technical assistance administered by ADB. UNOPS will also be responsible for implementing safeguards requirements for all subprojects.

B. Subproject Selection Based on ADB's Safeguard Policy Statement

9. The environmental assessment and review framework (EARF) has provided overall guidance on subproject selection, screening and categorization, information disclosure and consultation, assessment, planning, institutional arrangement, and processes to be followed in the formulation and implementation of subprojects during project implementation. The project is classified as category B for environment according to ADB's Safeguard Policy Statement (SPS) (2009) and findings of the rapid environmental assessment (REA) on the sample subprojects. No subproject will be funded by ADB unless it complies with all these standard criteria. Table 1 below shows the status of compliance with the selection criteria.

Table 1: Status of Subproject as required by ADB Safeguard Policy Statement

General Criteria for Subproject Selection		Status of Compliance	Remarks (Provide Basis of Compliance)
1.	Not located in ecologically sensitive areas.[a]	Complied	REA Checklist in Annex 1- No Mitigation Measures Scenario
2.	Does not directly affect environmentally protected areas, core zones of biosphere reserves, highly valued cultural property.	Complied	Section V Para. 135 REA Checklist in Annex 1 No Mitigation Measures Scenario Checklist in Annex 1
3.	Does not cause damage/destruction, removal, alteration or defacement of adjacent or nearby structures/monuments and sites of international, national and local significance	Complied	Table 26 mentions no PCR will be affected.
4.	Does not include and/or involve any activities listed in ADB's Prohibited Investment Activities List (Appendix 5 of ADB SPS).	Complied	REA-Screening has been carried out and presented in Annex-1
5.	Subprojects shall avoid areas prone to instability, frequent landslides, or flooding.	Complied	REA-Screening has been carried out and presented in Annex-1
6.	The subprojects area shall not lead to drainage congestion, salinization, and water logging.	complied	REA-Screening has been carried out and presented in Annex-1

General Criteria for Subproject Selection		Status of Compliance	Remarks (Provide Basis of Compliance)
7.	Provides replacement ratio of 1:10 for any tree cutting. (Complying with the national requirements).	Complied	59 trees of different species need to be cut in Rampur and 21 trees of different species need to be cut in Pratappur and the details of trees has been mentioned in EMP

ADB = Asian Development Bank, EMP = environmental management plan, PCR = physical cultural resource, REA = rapid environmental assessment, SPS = Safeguard Policy Statement.

[a] Wildlife and/or bird sanctuaries, national parks, tiger reserves, elephant reserves, conservation reserves, core zone of biosphere reserves, centrally protected monuments, or critical habitat (as defined in ADB SPS).

[b] Subprojects with component activities near (within 50 m from) such sites shall have prior coordination with the Department of Archaeology.

C. Basis and Extent of Initial Environmental Examination

10. ADB SPS requires that the environmental implications of individual subprojects are considered in the planning and decision-making process and that action is taken to reduce the impacts to acceptable levels. This is done through the environmental assessment process, which has become an integral part of the bank's lending operations and project development and implementation in the Asia and Pacific region. As per the new Environment Protection Act (EPA) 2019 and Environmental Protection Rule 2020 of the Government of Nepal, the threshold for construction projects requiring an IEE is for the building height to be more than 30 to 45 meters (m). Since the design height of the proposed project is 4.1 to 15.8 m, the project does not require an IEE or a national environmental clearance. Similarly, the threshold for requiring an IEE is having a built-up area and surface area of more than 5,000 to 10,000 square meters (m^2). The design area of the subproject is less than the thresholds. Brief environmental study, IEE, and environmental impact assessment (EIA) requirements for the construction of the new building as per schedule 1, 2, and 3 of the Environmental Protection Rule 2020 (1st amendment 24 June 2021) are presented in Table 2.

Table 2: Relevant Criteria for Requirement of Brief Environmental Study/IEE/EIA for Construction of new building Projects as per Schedule 1, 2, and 3 of EPR, 2020 (1st amendment 24 June 2021)

Described in the EPR, 2020(1st amendment 2021) Schedule 1, H for Brief Environmental Study	Described in the EPR, 2020, (1st amendment 2021) Schedule 2, H for Requiring IEE	Described in the EPR, 2020 (1st amendment 2021) Schedule 3, H for Requiring EIA	Conditions in this Project
1. Construction of building of 20–30 m height 2. Construction of residential or commercial or both nature of buildings having 3,000–5000 m^2 built up/surface area	1. Construction of building of more than 30 and up to 45 m height 2. Construction of residential or commercial or both nature of buildings of more than 5000 and up to 10000 sq.m built up/surface area	1. Construction of building of more than 45 m height 2. Construction of residential or commercial or both nature of buildings of more than 10,000 m^2 built up/surface area	EIA and IEE not applicable

EIA = environmental impact assessment, IEE = initial environmental examination.

11. The project is classified as category B for environment according to ADB SPS and REA findings on the sample subprojects. Outputs 1 and 2 involve civil works, specifically construction of 15 WCSCSC facilities and 1 climate and disaster-resilient and disability-friendly GBV rehabilitation center building. This IEE covers construction of four WCSCSCs and 1 rehabilitation center and is prepared based on draft detailed designs of the subproject buildings.

12. The IEE report (i) provides information on the subproject and its environmental requirements; (ii) provides the necessary baseline conditions of the physical, biological, physical, cultural, and socioeconomic environments and/or resources in and surrounding the subproject's area of influence; (iii) identifies and assesses potential impacts arising from the

implementation of the subproject on its environments and/or resources; (iv) recommends measures to avoid, mitigate, and compensate for the adverse impacts; (v) presents information on stakeholder consultations and participation during subproject preparation; (vi) recommends a mechanism to address grievances on the environmental performance of the subproject; and (vii) provides an environmental management plan (EMP).

D. Objectives and Scope of the Environmental Study

13. The main objective of the IEE is to fulfill the requirements of ADB SPS. It aims to help decision-makers to make informed decisions about project. The specific objectives of the IEE study are as follows:

(i) Identify, predict, and evaluate the potential beneficial and adverse impacts of the subproject on the physical, biological, and socioeconomic resources in the subproject area.
(ii) Suggest enhancement measures to augment the benefits of the subproject and propose mitigation measures to avoid, minimize or compensate for adverse impacts of the project.
(iii) Prepare the appropriate EMP.
(iv) Inform the public about the proposed subproject and its impact on their livelihood.

14. The IEE focuses on the adverse environmental impacts and mitigation measures relating to the location, design, construction, and operation of all subproject activities. This IEE report is based on the subproject's draft detailed engineering design, which has also been shared with project stakeholders. The IEE will be updated based on detailed design prior to commencement of any works.

15. The scope of the IEE focuses on the adverse environmental impacts and its mitigation measures relating to the location, design, construction, and operation of all the subproject activities. This IEE report is based on feasibility studies and will be updated based on the final detailed design prior to commencement of any works.

E. Relevance of the Project

16. The proposed construction of WCSCSCs in Surunga-Saptari, Gaushala-Mahottari, Jitpursimara-Bara, Pokhariya-Parsa of Madhesh Pradesh and rehabilitation center at Suryavinayak-Bhaktapur are principal needs of the subproject area. MOWCSC and Nepal Police selected the WCSCSC subprojects by considering impacts of GBV, number of victims, and service beneficiaries located in the area. The subprojects were also identified based on the recommendation of the provincial ministry and number of cases registered in the respective police offices. The survivor-centric services have features to ensure survivors' privacy, short-term accommodation, proper sanitation facilities, accommodation for female police officers, and space for trainings. These features will enhance existing services and provide logistics support for improved case tracking and monitoring of GBV cases. In addition, the construction and establishment of long-term rehabilitation centers at the province level will ensure the well-being and economic empowerment of survivors by providing livelihood and life skills training, and legal services. Hence, the project is instrumental to meet Nepal's Sustainable Development Goal (SDG) 5 (GESI), SDG 10 (reduced inequalities), and national targets.

II. POLICY, LEGAL, AND ADMINISTRATIVE FRAMEWORK

A. Nepal's Environmental Policy Framework

17. Most of the national policies and government laws are in favor of environmentally sound economic development and growth. The following are summaries of the relevant policies, acts, regulations, and guidelines that were reviewed during the preparation of this IEE report.

1. The Constitution of Nepal, 2015

18. The Constitution of Nepal defines that each person shall have the right to live in a healthy and clean environment (Clause 1 of Article 30). The victim of environmental pollution and degradation shall have the right to be compensated by the pollutant as provided for by law (Clause 2 of Article 30). It prescribes for the State to give priority to the protection of the environment and prevention of its further damage due to physical development activities. Proceeding from, and conformable to, the Constitution, the Government of Nepal has passed a series of environmental laws, policies and implementing regulations and standards.

2. National Urban Policy (2007)

19. The policy gives importance to environment conservation while carrying out urban development works and natural resource use, which justifies environment conservation and protection requirements in donor-assisted development projects.

3. Fifteenth Plan 2076/77-2080/812019/20

20. The vision of a clean, healthy, and greenery environment is carried forward in the Fifteenth Five-Year Plan, 2019/2020–2023/2024. This can be accomplished by establishing goals for pollution control, waste management, and reforestation to ensure the right to a clean and healthy environment. The primary goal of this plan remains the management of all types of waste generated by health facilities, including household and industrial waste.

4. National Environmental Policy, 2019

21. The policy mandates the management of pollution and waste, and the maintenance of greenery to ensure people's right to live in a hygienic and healthy environment. Similarly, the policy mainstreams environmental concerns in development activities and promotes reduction, reuse, and recycling of the waste. With regard to the distribution of authority among the three tiers of government, the policy makes the federal government responsible for overseeing national policy, law, and environmental standards, while the provincial government is charged with developing state-level policy, plans, rules and regulations, and pollution control standards. Furthermore, local governments are designated to oversee national environmental policy implementation. Its provisions to coordinate and engage with various stakeholders in carrying out environmental protection and awareness activities at the local level are anchored on the following proposed strategies:

(i) Formation of an efficient structure to prevent, control, and minimize pollution.
(ii) Promotion of environment-friendly vehicles.
(iii) Waste segregation and proper disposal, as well as the promotion of reduce, reuse, and recycle initiatives.
(iv) Maintenance of a hygienic aquatic environment by preventing water pollution (e.g., direct release of sewage and solid waste to bodies of water).

5. Climate Change Policy, 2019

22. The Government of Nepal recently amended its Climate Change Policy 2019 to incorporate climate change mitigation and adaptation into policies and programs across its central, provincial, and local governments. The policy is guided by United Nations Framework Convention on Climate Change provisions and aims to contribute to the nation's socioeconomic prosperity by building a climate-resilient society, reducing the risk of climate change impacts, and supporting the country's commitments to national and international climate change agreements. Related to forest, watershed, and biodiversity conservation, the policy also emphasizes the importance of mainstreaming integrated watershed management in climate change programs while also strengthening the adaptive capacities of local women and men by supporting them to incorporate good watershed management practices. Related to water, the policy emphasizes the role of various technologies to ensure efficient use of the resource, including the promotion of rainwater harvesting ponds to support groundwater recharge.

B. Government of Nepal Environmental Legal Framework

23. Environment Protection Act (EPA), 2076 B.S. (2019 A.D), requires a proponent to undertake a brief environmental study, or IEE or EIA of the proposed subproject and have the report approved by the concerned sector agency or ministry of environment prior to implementation.

24. Schedules 1, 2, and 3 list the project activities that may require brief environmental study, IEE, and/or EIA. Screening the activities based on the schedule confirms that the proposed subproject does not require an IEE based on the government's Environment Protection Rules 2020.

25. All other statutory clearances such as no objection certificates, site location clearances, permits to construct, permits to operate, and/or road cutting permits as required will be obtained by the PMU. No civil works will commence until and unless required statutory clearances are obtained. The contractor will need to comply with all the applicable national, provincial, and local government laws and regulations once the project commences.

26. Other environmental-related acts, rules, plans, policies, and guidelines that are relevant to the subproject are presented in Table 3.

Table 3: Other Relevant Environmental Act, Rules, Plan, Policies, and Guidelines of Nepal

Act/ Rule Policy/Law/Guidelines	Year	Relevant Provisions	Remarks
Environment Protection Act	2019 (2076 BS)	The act emphasizess on new aspects like provisions of Brief Environmental Study, IEE and EIA under the jurisdiction of local authority, provincial government, and central government. Need of Strategic Environmental Assessment for policies/plans/programs, and considerations of climate change for projects are among the newly enforced aspects of this act.	
Environment Protection Rules	2020 (2077 BS)	Environment Protection Rules (EPR), 2020 has defined thresholds for environmental assessment under 3 categories; Brief Environmental Study, IEE and EIA. It has defined the roles of the provincial government and the local government as well in the process of environmental	Design height and surface area of building to be constructed are below than that of given threshold for IEE

Act/ Rule Policy/Law/Guidelines	Year	Relevant Provisions	Remarks
		assessment of development projects.	
Labour Act and Labour Rules	2017 and 2018	The Act emphasizes OHS Policy; Safety & Health Committee; OHS arrangements including child care center; workplace safety; environment of work place; and specific Labour Audit Additional rest period for certain female employees, Specific provisions relating to the safety of the works having health hazards are also there in the Act	The bidding document shall include as condition that the contractor shall adopt all safety measures for the safety of its workers and other personnel and shall also adhere to environmental and aesthetic issues identified during the construction works.
Water Resources Act	1992 (2049 B.S.)	A comprehensive law on the development, use and conservation of water resources in Nepal, it aims to minimize damage to water bodies by requiring EIA & preparation of EIA report before granting license to use water resources for any purpose.	As per the new EPR 2020, the subproject does not require an IEE.
		Article 18 requires the compliance to quality standards in making use of water resources. Article 19 prohibits the pollution of water resources. Under the Act are two regulations for drinking water purposes: (i) Water Resources Regulation, 1993, setting out the implementation procedures for the Act; and (ii) the Drinking Water Regulation, 1998, which specifies compliance with the drinking water quality standards and control of water pollution (or sanitation) as it affects drinking water.	The EMP provides measures to comply with the relevant environmental quality standards and national drinking water quality standards.
Land Acquisition, Resettlement and Rehabilitation Policy	2015 A.D.	The policy is based on the principles that the assessment of land requirements needs to be carried out based on the alternatives having minimum impacts of land loss, and also the need of resettlement and rehabilitation works to ensure livelihoods of the affected persons and family is improved or at least restored at pre-project level. It also indicates the need to conduct social impacts assessment to identify impacts on affected people, community and vulnerable group, In case of Land acquisition and ownership transfer, land can be acquired also through voluntary donation which will be accepted only if the land provider has agreed without any pressure, and in presence of local authorities to donate land for the purpose. On the humanitarian ground, the policy also bases on the value that for revenue generating project, the project should create conducive situation in which the benefits generated by the project can be drawn-out to affected people.	No any land acquisition issues are pinvolved
Forest Act	2019 (2076 B.S.)	It stipulates that the GoN can develop a land use plan of a forest in order to maintain the balance of environment and development. It also provisions that the government can develop a specific forest conservation plan for a particular section of a national forest. It also states that the forest area can be used with approval for national priority projects.	Based on field assessment and site visits, very minimal trees need to be cut at building construction site. EMP stipulates no illegal quarrying of natural aggregate materials.
National Environmental Policy and Action Plan	1993 (2049 B.S.)	Of its five objectives, most relevant to the Subproject are to: (i) mitigate adverse environmental impacts; and (ii) safeguard national & cultural heritage & preserve	Subproject will not impact on physical, cultural heritage & biodiversity. EMP

Act/ Rule Policy/Law/Guidelines	Year	Relevant Provisions	Remarks
		biodiversity, within & outside protected areas.	provides measures to mitigate impacts if any.
Local Government Operations Act	2017	The Local Government Operation Act, 2017 empowers the local authority for the conservation of local natural resources and implementation of environmental conservation activities along with prime responsibility of conducting development projects which includes water supply, sanitation and awareness activities.	Provides basis for Local Government to monitor the environmental performance of the subprojects. EMP provides the responsibilities of LGs in EMP implementation.
Child Labor Prohibition and Regulation Act	2001 (2056 B.S.)	The section 3 of the act prohibits a child from engaging in work, sub clause 1 of the clause 3 states "Nobody shall engage in work a child who has not completed fourteen years of age as a labor and sub clause 2 states "Nobody shall engage a child in a risk full occupation or work set forth in the Schedule". The section 4 states "Child not to be engaged in work against his will by temptation or fear or pressure or by any other means".	The bidding document provides condition that contractors shall comply with applicable labor laws and core labor standards of Nepal on prohibition of child labor, equal pay for equal work of equal value regardless of gender, ethnicity or caste, elimination of forced labor and disseminate information on sexually transmitted diseases including HIV/AIDS to employees and local Communities.
Solid Waste Management Act	1011 (2068 B.S.)	Article 4 provides that the management of hazardous, medical, chemical or industrial waste rests upon the generators of such wastes. Management should be as prescribed in the Act. Article 5 provides that individuals and entities have the duty to reduce the amount of solid waste generated while carrying out work or business.	EMP prescribes eco-friendly management of solid and hazardous wastes.
National EIA Guidelines	1993 (2049 B.S.)	This guideline aims to assess the environmental impacts likely to be caused by a project, and promote its positive impacts and mitigate or eliminate adverse impacts by undertaking preventive and other effective measures after integrating the environmental impacts in the planning cycle of all the projects to be initiated in Nepal, prior to their initiation, so as to make the economic benefits from development projects sustainable	This has been followed for evaluation of the anticipated environmental impacts.
Environment Friendly Local Governance Framework	2013 (2070 B.S.)	• This has been issued to add value to the environment friendly local development concept encouraging environmental protection through local bodies. • One of its expected results is to bring improvement in the field of environment protection, waste management, climate change adaptation and disaster management throughout the nation.	This needs to be followed during project design, construction and operation period.
Working procedure for the use of national forest for national priority projects, 2074	2017 (2074 B.S.)	It emphasizes on the management regarding the use of national /community forests for the implementation of national priority project.	The project activities/components of works will not cause any impact on the forest area.
Nepal National Building Code NBC: 105: 2020	2020 (2077)	Nepal National Building Code NBC 105: Seismic Design of Buildings in Nepal is the outcome of the revision of the earlier version of NBC 105: 1994 Seismic Design of Buildings in Nepal. This code covers the requirements for seismic analysis and design	The design and construction will comply with the requirements of the code.

Act/ Rule Policy/Law/Guidelines	Year	Relevant Provisions	Remarks
		of various building structures to be constructed in the territory of the Federal Republic of Nepal. This code is applicable to all buildings, low to high rise buildings, in general. Requirements of the provisions of this standard shall be applicable to buildings made of reinforced concrete, structural steel, steel concrete composite, timber and masonry. For Base-isolated buildings as well as for buildings equipped and treated with structural control can be designed in reference with specialist literatures. Minimum design earthquake forces for buildings, structures or components thereof shall be determined in accordance with the provisions of this standard.	

C. International Environmental Agreements

27. Table 4 lists the relevant international environmental agreements that Nepal is party to, and their relevance to various subprojects under the project.

Table 4: International Environmental Agreements and Standards Relevant to the Subproject

International Environmental Agreement	Year*	Relevant Provisions	Remarks
World Heritage Convention	1978	Parties to ensure the protection and conservation of the cultural and natural heritage situated on territory of, and primarily belonging to, the State	The subproject will help the Government of Nepal comply with this agreement. The subproject has been selected ensuring that it will not trigger adverse impact physical cultural resources and natural heritage during and after construction.
Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention)	1987	Parties to conserve and wisely use wetlands (i.e. maintaining their ecological character) as a contribution towards achieving sustainable development locally and throughout the world.	The subproject will help the Government of Nepal comply with this agreement. The subproject components are not located in wetlands and other protected areas of the country.
Convention on Biodiversity	1992	Parties to require the environmental assessment of projects that are likely to have significant adverse effects on biological diversity with a view of avoiding or minimizing such effects	The subproject will help the Government of Nepal comply with this agreement. The subproject will not impact biodiversity in the country.
UN Framework Convention on Climate Change	1992	Parties to take precautionary measures to anticipate prevent or minimize the causes of climate change and mitigate its adverse effects.	The subproject will help the Government of Nepal comply with this agreement. The subproject will ensure implementation of its EMP as measure to minimize the causes of climate change.
Basel Convention on the Control of Trans boundary Movements of Hazardous Wastes and Their Disposal	1996	Parties to, among others, minimize the amount and toxicity of hazardous waste generated, manage the hazardous and other wastes they generate in an environmentally sound manner and as close as possible to the source of generation.	The subproject will help the Government of Nepal comply with this agreement. The subproject will ensure implementation of its EMP as measure to avoid or minimize the generation and disposal of hazardous wastes.

*(Year) - Year last amended.

28. The subproject will continuously support Nepal's commitment to these international agreements. Eventually, the subproject will help the country fulfill its commitment to SDG 5, which is to ensure GESI.

D. Environmental Assessment Requirements of the ADB

29. All ADB-funded projects must comply with the SPS (2009) to ensure that these are environmentally sound, designed to operate in compliance with applicable regulatory requirements, and do not cause significant environmental, health, or safety impacts. The policy promotes good practice as reflected in internationally recognized standards such as the World Bank Group's Environmental, Health, and Safety Guidelines.[9]

30. Table 5 summarizes the environmental safeguard requirements applicable to the subproject per ADB SPS (2009).

Table 5: SPS 2009 Safeguard Requirements

SPS 2009 - Safeguard Requirements	Remarks
Use a screening process for each proposed project, as early as possible, to determine the appropriate extent and type of environmental assessment (EA) so that appropriate studies are undertaken commensurate with the significance of potential impacts and risks.	REA has been undertaken, indicating that the Subproject is NOT: (i) environmentally critical; & (ii) adjacent to or within environmentally sensitive/critical area. The extent of adverse impacts is expected to be local, site-specific, confined within main and secondary influence areas. Significant adverse impacts during construction will be temporary & local & shall be mitigated accordingly. Hence IEE is sufficient.
Conduct EA to identify potential direct, indirect, cumulative, & induced impacts and risks to physical, biological, socioeconomic (including impacts on livelihood through environmental media, health & safety, vulnerable groups and gender issues), and cultural resources in the context of the project's area of influence. Assess potential trans boundary global impacts, including climate change.	IEE has been undertaken to meet this requirement. (Impacts are discussed in Section VI). No trans boundary & global impacts, including climate chane.
Examine alternatives to the project's location, design, technology, and components and their potential environmental and social impacts and document the rationale for selecting the particular alternative proposed. Also consider the no project alternative.	Analysis of alternatives is presented in Section VII.
Avoid and where avoidance is not possible, minimize, mitigate, &/or offset adverse impacts and enhance positive impacts by means of environmental planning & management. Prepare EMP that includes the proposed mitigation measures, environmental monitoring and reporting requirements, related institutional or organizational arrangements, capacity development & training, implementation schedule, cost estimates, and performance indicators.	An EMP has been prepared to address this requirement (Section IX).
Carry out meaningful consultation with affected people & facilitate informed participation. Involve stakeholders, including affected people, women's participation & concerned NGOs, early in the project preparation process & ensure that their views & concerns are made known to & understood by decision makers and taken into account. Continue consultations with stakeholders throughout project implementation to address issues related to EA	Key informant, FGD meetings have been conducted. A grievance redress mechanism for the resolution of subproject-related issues/concerns is presented in Section VIII.

[9] New Version of the "World Bank Group Environmental, Health, and Safety Guidelines", 30 April 2007, Washington, USA.http://www.ifc.org/ifcext/enviro.nsf/Content/EnvironmentalGuiidelines.

SPS 2009 - Safeguard Requirements	Remarks
GRM to receive & facilitate resolution of affected people's concerns & grievances on project's environmental performance. Disclose a draft EA (including the EMP) in a timely manner, before project appraisal, in an accessible place & in a form & language(s) understandable to affected people & stakeholders. Disclose the final EA & its updates if any to affected people & stakeholders.	This prepared IEE based on detail design report and will be disclosed on ADB's website prior to Project appraisal, and will be made available at the offices of the MOWCSC/PMU.
Implement the EMP and monitor its effectiveness. Document monitoring results, including the development and implementation of corrective actions, and disclose monitoring reports.	The borrower will implement EMP. Environmental safeguards implementation will be reported and disclosed in accordance with ADB's SPS and Access to Information Policy
Do not implement project activities in areas of critical habitats, unless (i) there are no measurable adverse impacts on the critical habitat that could impair its ability to function, (ii) there is no reduction in the population of any recognized endangered or critically endangered species, and (iii) any lesser impacts are mitigated. If a project is located within a legally protected area, implement additional programs to promote and enhance the conservation aims of the protected area. In an area of natural habitats, there must be no significant conversion or degradation, unless (i) alternatives are not available, (ii) the overall benefits from the project substantially outweigh the environmental costs, and (iii) any conversion or degradation is appropriately mitigated. Use a precautionary approach to the use, development, and management of renewable natural resources.	The subproject does not cover the critical habitats and forest area The major subproject structures are proposed on government-owned land. No settlements are expected to be adversely affected due to acquisition of small size of public vacant lands at different sites..
Apply pollution prevention & control technologies and practices consistent with international good practices as reflected in internationally recognized standards such as the World Bank Group's Environmental, Health and Safety Guidelines. Adopt cleaner production processes and good energy efficiency practices. Avoid pollution/ when avoidance is not possible, minimize or control the intensity or load of pollutant emissions and discharges, including direct and indirect greenhouse gases emissions, waste generation, and release of hazardous materials from their production, transportation, handling, and storage. Avoid the use of hazardous materials subject to international bans or phase-outs. Purchase, use & manage pesticides based on integrated pest management approaches & reduce reliance on synthetic chemical pesticides.	This requirement is also applicable to the subproject in the aspect of pollution management, and waste management, e.g., effluent from septic tanks and generated waste from kitchen and sanitation. The sub-project will ensure that the contractor's measures and practices are in line with internationally accepted standards.
Provide workers with safe and healthy working conditions and prevent accidents, injuries, and disease. Establish preventive and emergency preparedness and response measures to avoid, and where avoidance is not possible, to minimize, adverse impacts and risks to the health and safety of local communities.	EMP provides measures to mitigate health and safety hazards during construction and operation phases.
Conserve physical cultural resources and avoid destroying or damaging them by using field-based surveys that employ qualified and experienced experts during environmental assessment. Provide for the use of "chance find" procedures that include a pre-approved management and conservation approach for materials that may be discovered during project implementation.	The subproject will not affect any physical cultural resource. The EMP recommends the measures to mitigate any such adverse impacts, and also in case of chance find.

ADB = Asian Development Bank, EA = environmental assessment, EMP = environmental management plan, IEE = initial environmental examination, MOWCSC = Ministry of Women, Children and Senior Citizen, PMU = project management unit, REA = rapid environmental assessment.
Source: Asian Development Bank.

31. During subproject design, construction, and operation, the MOWCSC PMU, the concerned implementing agency, and contractor shall apply pollution prevention and control technologies and procedures consistent with global good practices, as reflected in internationally recognized standards. When the government regulations differ from these practices, MOWCSC PMU shall abide by whichever is more stringent. If less stringent levels or measures are appropriate in view of specific subproject circumstances, MOWCSC PMU will provide full and detailed justification for any proposed alternatives that are consistent with

the requirements presented in ADB SPS.

E. Relevant Environmental Quality Standards

32. Table 6 presents the basis for observing relevant environmental quality standards. The specific quality standards are in Appendix 2.

Table 6: Relevant Environmental Quality Standards

Particular	National Standard	International Standard
Ambient air quality	- National Ambient Air Quality Standards, for Nepal, 2003	WHO Air Quality Guidelines, Global Update, 2005
Emission standard for diesel generator to ambient Air	Emission standard for diesel generator EPR-14, 2020	-
Noise	National Noise Standard Guidelines, 2012	- WHO Guideline Values on Noise Level - Guidelines for Community Noise by WHO 1999
Drinking water quality[a]	National Drinking Water Quality Standards, 2006	WHO Guidelines for Drinking- water Quality, Fourth Edition, 2017

EPR = ?, WHO = World Health Organization

[a] For surface and ground water quality monitoring, the National Drinking Water Quality Standard shall be applied since these resources are used for drinking.

Source: Asian Development Bank.

III. APPROACH AND METHODOLOGIES

33. In line with the IEE objectives, a systematic and integrated methodology was followed in compliance with standard IEE field study practices and amid continuous public consultation.

A. Literature Review

34. The IEE study team gathered available primary and secondary literature such as reports, maps (e.g., topographic maps, land use maps, and aerial photographs), feasibility studies, and municipal profiles. Similarly, published and unpublished reports on relevant environmental standards, acts, regulations, and policies were collected, along with scientific literature on the subproject areas, i.e., material pertaining to their biological, social, chemical, physical, and cultural environments. These documents were assessed to determine the nature and scope of activities that may influence the environmental conditions in the proposed areas.

B. Impact Area Delineation

35. The IEE covers the “direct impact area”—which is about 50 m from the boundaries of the proposed WCSCSCs and rehabilitation center location—and beyond the core project area up to 100 m distance, considered as the “indirect impact area.”

36. The area required for the proposed subproject is considered the core area. It is also where the building construction will be carried out, and thus has the highest magnitude of impact from the proposed subproject activities, i.e., the “direct impact area.” The area immediately beyond it is considered the “indirect impact area” where spillover effects may occur.

C. Field Study

37. A team comprising an environmental specialist, socioeconomist, and civil engineer

carried field studies in subproject areas from 24 to 27 September 2021 in Veidia and Gaushala, on 11–13 February 2022 in Simara and Pokhariya APO and on 2 March 2022 in Suryavinayak, Bhaktapur. During the visits, baseline information on the subproject's physical, cultural, chemical, biological, and social conditions with possible direct and indirect impacts were identified, and data were collected using a survey checklist (Annex 9). The paragraphs below briefly discuss the various approaches and methodological tools used during the field visit.

1. Physical Environment

38. The physical environment survey was carried out by delineating the subproject impact area to collect baseline topographic and geomorphic information. Physical features such as topography, climate and meteorology (e.g., rainfall), air quality, erosion, land stability, and land use patterns were observed and data were recorded.

2. Biological Environment

39. The floral and faunal assessment was done by walkover survey throughout the subproject's direct impact areas. Types of vegetation and forest were identified based on species composition, while biodiversity values in the indirect impact area were estimated as low, moderate, or high, applying standard tools. Ethno-botanical information was also obtained.

40. In the indirect impact areas, wildlife interaction with local people (for habitat continuity) was studied to identify linkages between wildlife habitats and proposed activities. The presence of indicator species for threatened or endangered wildlife (as per IUCN Red Book, CITES appendixes, and Government of Nepal list) in the area were validated with local communities.

3. Socioeconomic and Cultural Environment

41. Focus group discussions (FGD) were conducted to obtain socioeconomic and cultural information. Consultations were also held to serve as occasions for interacting with local people and stakeholders as well as gather insights on and the subproject's perceived relevance and impact on the surrounding environment. Direct observation (via walkover survey) was done to collect information on cultural places and public institutions such as temples, cremation grounds, festival venues, historical and archaeological sites, schools, and health posts within the directly affected subproject areas. Consultation with village elites and interviews with key respondents were conducted to assess the current state of these facilities and the general water and sanitation status of the communities in the subproject area.

D. Stakeholder Consultations and Focus Group Discussions

42. To verify baseline information in the project areas, stakeholder consultations and FGDs were conducted by an expert team from September 2021 to March 2022. The positive response and active engagement of local stakeholders made the public consultation more fruitful. Major issues that emerged during the consultations and FGDs are presented in section VII, and the proceedings are in Annex 8.

E. Data Processing and Impact Identification, Prediction, and Evaluation Methods

43. During consultations and field observations, environmental impacts—both beneficial and adverse—were elaborately identified and assessed to the extent possible, for both project construction and operation stages. The impacts were studied in terms of their nature, magnitude, extent, and duration using National EIA Guidelines 1993 as reference. Magnitudes

of the impacts are classified into High (H), Medium (M), and Low (L), and extent of the impacts are classified in terms of Site Specific (SS), Local (L), and Regional (R). Similarly, the duration of impacts is classified into short term, medium term, and long term.

F. Scoring of Impacts

44. Nature of Impact: D = Direct; IN = Indirect; Magnitude, H = High (60); M = Medium/Moderate (20) ; and L = Low (10), Extent, R = Regional (60), L = Local (20); and S = Site-specific (10), Duration, LT = Long-term (20), MT = Medium-term (10); and ST = Short-term (5) ,The point and scoring system is taken from the National EIA Guidelines, 1993. The Significance of Impact is rated for total score as follows: More than 75: Very Significant, 45–75: Significant; Less than 45: Insignificant.

G. IEE Team Members

45. The IEE report was prepared in accordance with ADB SPS requirements. The following experts were mobilized to complete the IEE for the subprojects (Table 7).

Table 7: Study Team for IEE Study of the Subproject

SN	Name of Expert	Designation	Expertise
1	Sita Ram Kandel	Environmental specialist IEE team leader	Environmental safeguard management
2	Robin Bhandari	Social safeguards specialist	Socioeconomics
3	Surya Acharya	Senior engineer	Structure design and architecture

Source: Asian Development Bank.

IV. DESCRIPTION OF THE PROJECT

A. Location of the Subproject

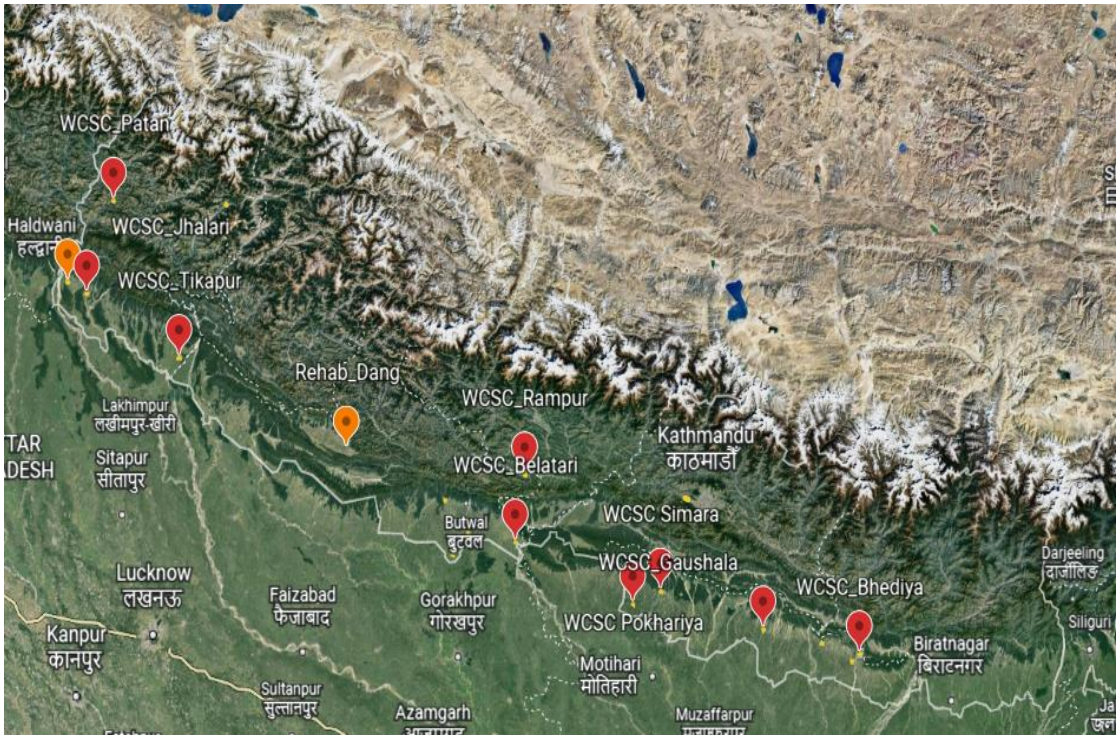
46. The proposed national rehabilitation center will be located in Suryavinayak of Bhaktapur in Bagmati province and the four WCSCSCs will be located in the following areas; (i) Bhediya of Saptari, (ii) Gaushala of Mahottari, (iii) Jitpur Simara of Bara, and (iv) Pokhariya of Parsa districts. All WCSCSCs will be located in Madhesh Pradesh. Saptari, Mahottari, Bara and Parsa districts lie in terai region whereas Bhaktapur district lies in a sloppy terrain of hilly region. The WCSCSCs will be constructed within the APOs as the part of office structures. As the WCSCSCs will be located within the APOs boundary wall, land acquisition is not necessary. The Mangala Shahana Rehabilitation Center lies in the Surayavinayak Municipality ward -7, Subbakopakha within government-owned land (Figure 4). The components of the subproject under this study are summarized in Table 8.

Table 8: List of Subproject with Location

S.N.	Name of Sub project	Districts	Municipalities/Location	Latitude/Longitude
1	WCSCSC Bhediya	Saptari	Bhediya APO, Surunga-2, Saptari	26°61’91’ N, 86°78’19’ E
2	WCSCSC Gaushala	Mahottari	Gaushala APO,Gaushala-5, Mahottari	26°87’62’ N, 85°80’77’ E
3	WCSCSC Simara	Bara	Simara APO, Jitpursimara-1, Bara	$27^0$13’41’’ N, $85^0$06’49’’ E
4	WCSCSC Pokhariya	Parsa	Pokhariya APO, Pokhariya-4, Parsa	27^0 21’90’’ N, $84^0$81’51’’ E
	Rehabilitation center at Suryavinayak	Bhaktapur	Suryavinayak-7, Bhaktapur	27° 38' 43" N, 85° 25' 07" E

Source: IEE Field Study, 2021

Figure 1: Distribution of Different Subprojects in Google Map



Source: Google Earth Pro- v7.3.4.8248.

B. Type, Category, and Need of the Subproject

47. Based on the feasibility study, 15 sites were selected for detailed design during the project's first phase. The structural design included local climate analysis, neighborhood study, and mitigation of site-specific hazards (e.g., landslides, inundation, high tension lines). All the facilities were made accessible to people with disabilities and incorporated design requirements for women, children, and the elderly. Compliance with national building codes and good practices in incorporating hazard resistance (e.g., earthquakes) in the designs was carried out. The nature and category of the structures will follow the national requirements and internal good practices and standards for convenience services of the centers.

48. The construction of WCSCSCs and the national rehabilitation center will be part of the government's effort to provide responsive GESI services to GBV survivors and reduce the incidence of GBV.

C. Subprojects

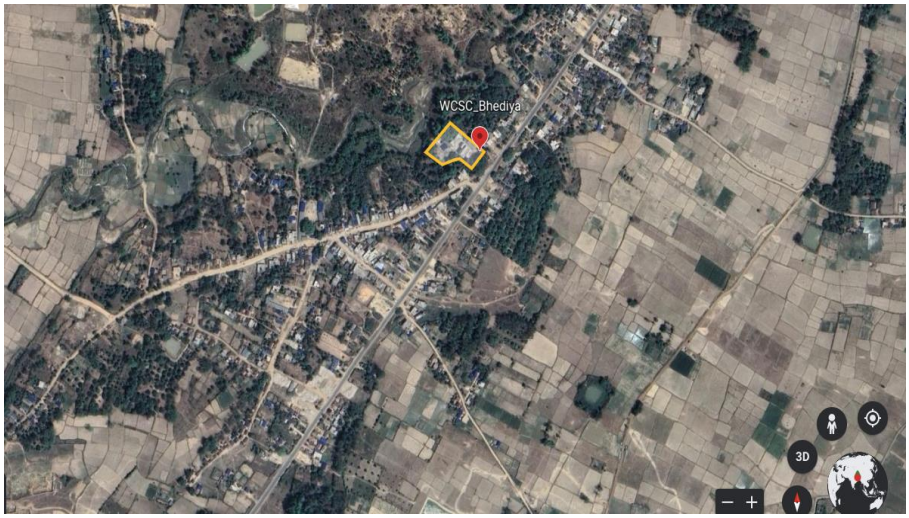
49. **WCSCSC at APO Bhediya.** This WCSCSC is in Bhediya APO, at ward number 2, of the Saptari District in Madhya Pradesh Province. This is one of the areas with higher incidents of GBV than other APOs in Saptari, with cases rising every year. During FY2020–2021, eight GBV cases were recorded, which is a 25% increase compared to FY2019–2020.The establishment of a rehabilitation center will make it easier to provide services to victims of GBV, which include rape, domestic violence, polygamy, allegations of witchcraft, child abuse, child marriage, and human trafficking. The proposed site is within the Bhediya APO and covers an area of 7,703.84 m^2, sufficient for constructing the center (other pertinent details of the Bhediya center are in Table 9, while the vicinity map is in Figure 2). A copy of the landholding certificate is attached in Annex 10.

Table 9: Salient Features of WCSCSC at Bhediya APO, Saptari

Item	Description	
Project Name	Construction of WCSCSC at Bhediya APO, Saptari	
Location	Surunga Municipality 2, Saptari	
Available land Area m^2	7703.84	
Ownership of Land	District Police Office, Saptari	
Current use of land	Land is occupied by unused temporary structure and other part is empty	
Ground Coverage m^2	Permissible	Actual
Ground Coverage m^2	615.17	248.56
Permissible Built Up Area m^2	248.56	
Type of Building	RCC Frame Structure	
FAR	NA	
Basement Area (Parking)	No	
Total Built Up Area m^2	615.17.	
Total number of storey (no)	3	
Total Height of the building (m)	12.2	
Number of blocks	1	
Type of construction	RCC Frame structure	
Construction material	Cement, Reinforcement bars, pre-fab, Aluminum, glass etc, no asbestos containing materials will be used	
Access Road	Main access 6 m wide	
Water tank capacity	NA	
Set Back	3m min. on north	
Other	24-hour electrical backup system and 24-hour security service	
Cost	$0.437 million	

Source: Preliminary Design & Feasibility Report, 2021.

Figure 2: Subproject Location Map - WCSCSC at APO Bhediya APO



Source: Google Earth Pro- v7.3.4.8248.

50. **WCSCSC at APO Gaushala.** This WCSCSC is in Gaushala Municipality, ward number 5 in Madhes Pradesh's Mahottari district. The area is increasingly becoming urbanized, which may likely lead to a rise in cases of GBV. During FY2020–2021, 14 GBV cases were recorded, an increase of about 50% compared to FY2019–2020. There is no WCSCSC building in Mahottari district. The proposed center will facilitate service provision to GBV victims of rape, domestic violence, polygamy, allegations of witchcraft, child abuse, child marriage, and human trafficking. The proposed site is in Gaushala and

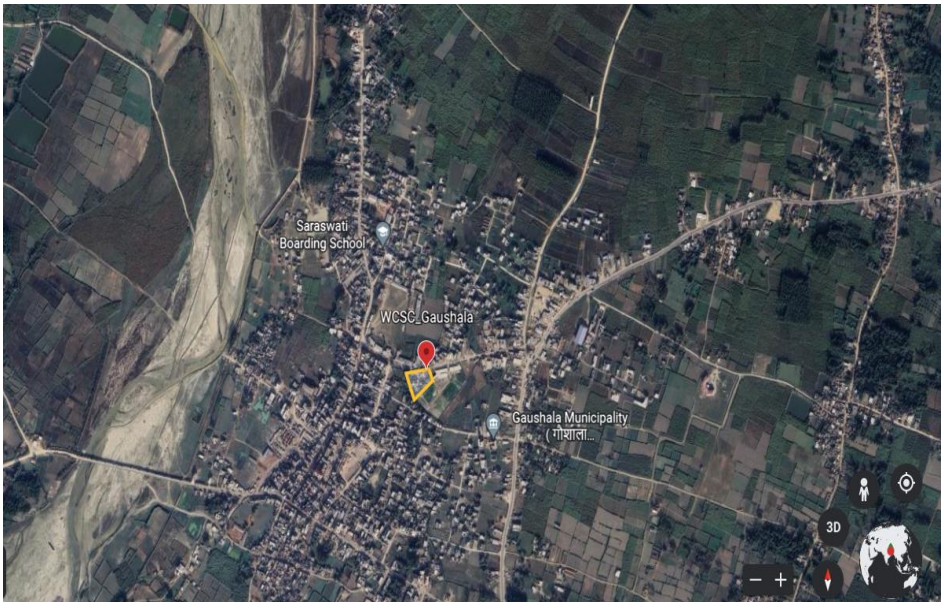
has an area of 2,370.41 m^2, sufficient for constructing the WCSCSC (other pertinent details of the Belatari center are in Table 10, while the location map is in Figure 3). A copy of the landholding certificate is attached in Annex 10.

Table 10: Salient Features of WCSCSC at Gaushala APO, Mahottari

Item	Description	
Project Name	Construction of WCSCSC at Gaushala APO, Mahottari	
Location	Pratappur Rural Municipality Ward no 9, Nawalparasi	
Available land Area (sq. m.)	2370.41	
Ownership of Land	Area Police Office, Gaushala, Mahottari	
Current use of land	Small car garage and other part is empty	
Ground Coverage (sq.m.)	Permissible	Actual
Ground Coverage (sq. m.)	698.62	258.56
Permissible Built-Up Area (sq. m.)	248.56	
Type of Building	RCC Frame Structure	
FAR	NA	
Basement Area (Parking)	No	
Total Built Up Area (sq. m.)	698.62	
Total number of storey (no)	3	
Total Height of the building (m.)	12.2	
Number of block	1	
Type of construction	RCC Frame structure	
Construction material	Cement, Reinforcement bars, pre-fab, Aluminium, glass etc; no asbestos-containing material will be used	
Access Road	Main access 6 m wide	
Water tank capacity	NA	
Set Back	3m min. on east, north and south	
Other	24-hour electrical backup system and 24-hour security service	
Cost	$0.445 million	

Source: Preliminary Design & Feasibility Report, 2021.

Figure 3: Subproject Location Map- WCSCSC at Gaushala APO



Source: Google Earth Pro- v7.3.4.8248.

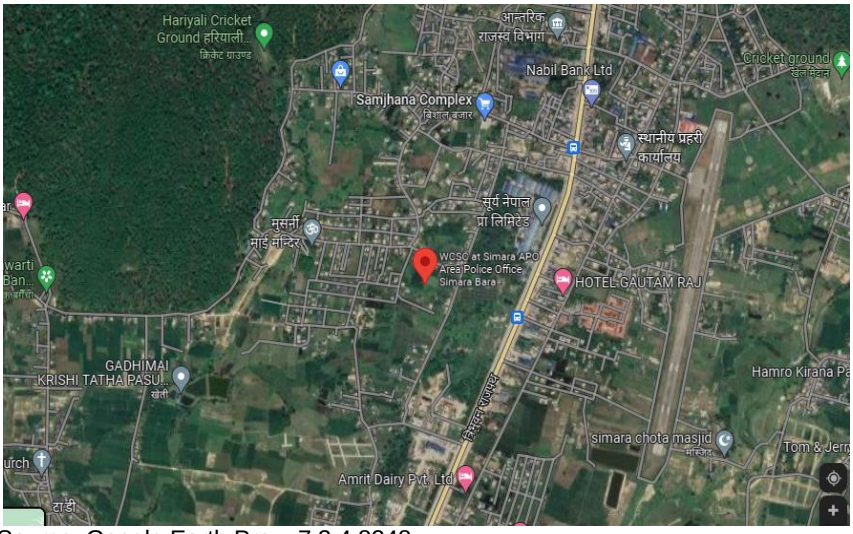
51. **WCSCSC at Simara APO.** The site is in Jitpursimara sub metropolitan city Ward number 1 in the Bara district ofMadhesh Pradesh. Along with increasing urbanization, it is also likely to increase the cases of GBV. The major casts living in this area are Tharu, Yadhav, Musahar, Harijan, Gupta, Kuswaha, Brahmin and Chhetri. More than 75 GBV cases were recorded verbally every month. There is no WCSCSC building in Bara district. The planned center will make access to rehabilitation services easier for GBV victims in Simara. The land area for the proposed WCSCSC is 3,285 m^2. Other pertinent details of the Simara WCSCSC are in Table 11, while the location map is in Figure 4. A copy of the landholding certificate is attached in Annex 10.

Table 11: Salient Features of WCSCSC at Simara APO, Bara

Item	Description	
Project Name	Construction of WCSCSC at Simara APO, Bara	
Location	Jitpursimara sub metropolitan city Ward no 1, Bara	
Available land Area (m^2)	3285	
Ownership of Land	Area Police Office, Shantinagar	
Current use of land	Old APO buildings and other part is empty	
Ground Coverage (m^2)	Permissible	Permissible
Ground Coverage (m^2)	698.62	698.62
Permissible Built-Up Area (m^2)	248.56	
Type of Building	RCC Frame Structure	
FAR	NA	
Basement Area (Parking)	No	
Total Built Up Area (sq. m.)	698.62	
Total number of storey (no)	3	
Total Height of the building (m.)	12.2	
Number of blocks	1	
Type of construction	RCC Frame structure	
Construction material	Cement, Reinforcement bars, pre-fab, Aluminum, glass etc, no asbestos containing materials will be used	
Access Road	Main access 6 m wide	
Water tank capacity	NA	
Set Back	3m min. on east, north and south	
Other	24-hour electrical backup system and 24-hour security service	
Cost	$0.45 million	

Source: Preliminary Design & Feasibility Report, 2021

Figure 4: Sub Project Location Map- WCSCSC at Simara APO



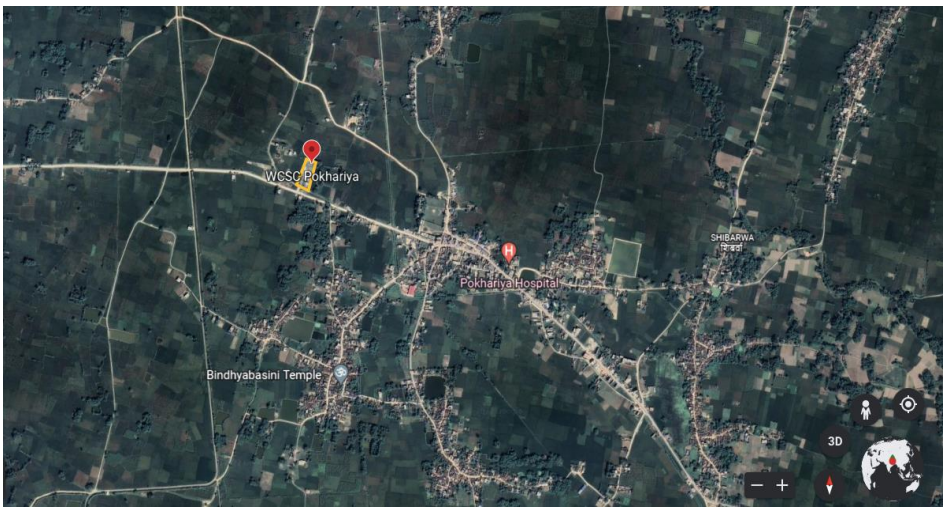
Source: Google Earth Pro- v7.3.4.8248.

52. **WCSCSC at Pokhariya APO.** The site is in Pakhariya municipality, ward number 4, in Parsa district, Madhesh Pradesh. During FY2020–2021, more than 45 GBV cases are registered verbally every month. There is no WCSCSC building in Parsa district. The planned center will make it easier to provide services to GBV victims of druggists, domestic violence, polygamy, withchcraft allegations, child abuse, child marriage, and human trafficking. The land area of the proposed site in Pokhariya is sufficient at 673.11 m^2. Other pertinent details of the WCSCSC at Pokhariya APO are in Table 12, while the location map is in Figure 5. A copy of the landholding certificate is attached in Annex 10.

Table 12: Salient Features of WCSCSC Pokhariya APO, Parsa

Item	Description	
Project Name	Construction of WCSCSC at Pokhariya APO, Parsa	
Location	Pokhariya Municipality ward no 4, Parsa	
Available land Area (sq. m.)	673.11	
Ownership of Land	Area Police Office, Pokhariya	
Current use of land	Badminiton coart and other barren land	
Ground Coverage (sq.m.)	Permissible	Actual
Ground Coverage (sq. m.)	678.76	248.56
Permissible Built-Up Area (sq. m.)	248.56	
Type of Building	RCC Frame Structure	
FAR	NA	
Basement Area (Parking)	No	
Total Built Up Area (sq. m.)	678.76	
Total number of storey (no)	3	
Total Height of the building (m.)	12.2	
Number of block	1	
Type of construction	RCC Frame structure	
Construction material	Cement, Reinforcement bars, pre-fab, Aluminium, glass etc; no asbestos-containg materials will be used	
Access Road	Main access 6 m wide	
Water tank capacity	NA	
Set Back	3m min. on west	
Other	24-hour electrical backup system, 24-hour security service etc.	
Cost	$0.375 million	

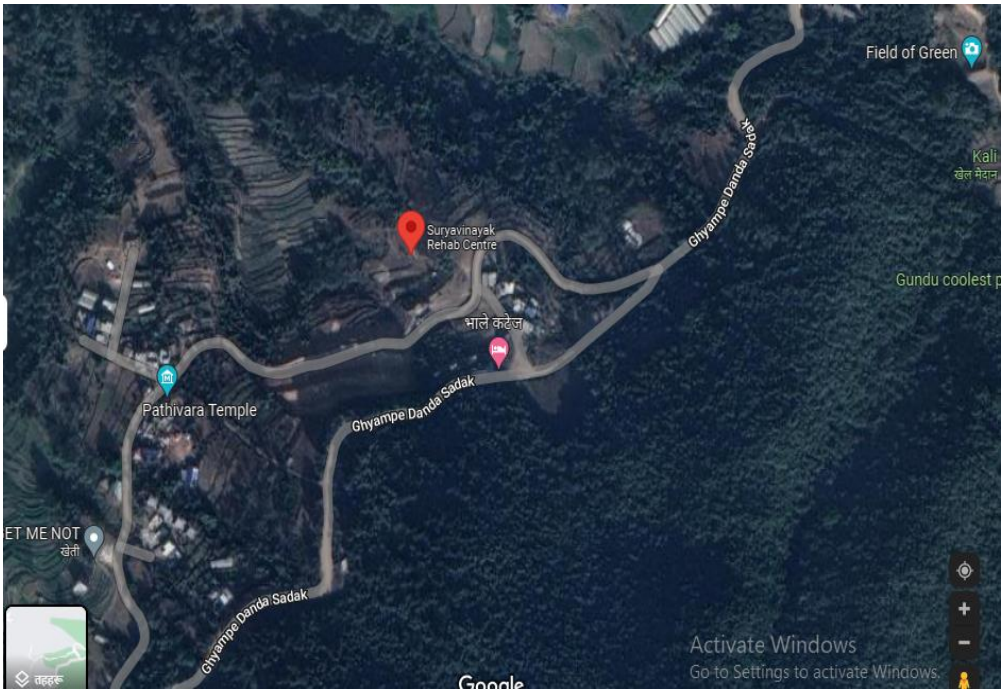
Figure 5: Sub Project Location Map- WCSCSC at Pokhariya APO



Source: Google Earth Pro- v7.3.4.8248.

53. **Rehabilitation Center at Suryavinayak, Bhaktapur.** The site is in Suryavinayak municipality, ward number 7, in Bhaktapur, Bagmati Province. Along with increasing urbanization, the cases of GBV are also likely to increase alll over the country The planned rehabilitation center will make it easier to provide services to GBV victims of druggists, domestic violence, polygamy, withchcraft allegations, child abuse, child marriage, and human trafficking. The land area of the proposed site in Bhaktapur is sufficient at 4,324.2 m^2. The details of the rehabilitation center will be provided once detailed design is prepared. The location map is in Figure 6. A copy of the landholding certificate is attached in Annex 10.

Figure 6: Sub Project Location Map- Rehabilitation Center at Suryavinayak, Bhaktapur



Source: Google Earth Pro- v7.3.4.8248

D. Components of WCSCSC and Rehabilitation Center

54. The tentative components of the proposed construction of WCSCSCs and rehabilitation center are as follows:

(i) Administration and other staff offices including accommodation facilities, reception and general case file and counseling, technical counseling and short-term resident quarters, meetings and conference rooms, and cafeteria.
(ii) Solar panel capacity of 10 kilowatt peak considering planned facilities such as LED lamps, security lights, printers, photocopy machines, ceiling fans, CCTV cameras, etc. (The actual need shall be identified before installation of the panels). Solar panel will only be installed in WCSCSCs.
(iii) Open parking area for loaded or private vehicles.
(iv) Piped water supply.
(v) Sewerage connecting toilets and wastewater.
(vi) Power supply, including solar energy (except for the rehabilitation center).
(vii) Air conditioning, generator, fire detection, and fighting system.
(viii) Internet connectivity.
(ix) Equipment (computers, photocopy machines, etc.) and furniture.
(x) Telecommunication facilities.

(xi) Storm water drainage facilities.
(xii) Solid waste management.
(xiii) RCC or brick concrete boundary fence.
(xiv) Landscaping.
(xv) Health and safety measures.
(xvi) Security facilities.

E. Assessment of Utilities Required

55. **WCSCSC at Bhediya APO.** There is a piped water connection but no connected sewerage system within the APO area. Power system is available from the distribution line, while communication services are available in the APO.

56. **WCSCSC at Gaushala APO.** There is a piped water connection but no connected sewerage system within the APO area. Power system is available from the distribution line, while communication services are available in the APO.

57. **WCSCSC at Simara APO.** There is a piped water connection but no connected sewerage system within the APO area. Power system is available from the distribution line, while communication services are available in the APO.

58. **WCSCSC at Pokhariya APO.** There is a tube well water supply source but no connected sewerage system within the APO area. Power system is available from the distribution line, while communication services are available in the APO.

59. **Suryavinayak rehabilitation center.** Currently there is no water supply and sewerage facility inside the premises of the proposed area. There is a municipal water supply system in the adjacent settlement. Stormwater can drain out to the adjacent natural stream safely and there will be no environmental impact due to the disposal. The project assumes that communication services will be extended to the center, since such services are also available in the adjacent street network. Access to fire hydrants is not available.

F. Other Required Structures

60. **WCSCSC at Bhediya APO.** Associated structures are not required except for the compound gate in the northeast location of the APO.

61. **WCSCSC at Gaushala APO.** Site embarkment of 0.3m has to be done after the foundation is constructed to mitigate inundation risk.

62. **WCSCSC Pokhariya APO.** The proposed site has a drainage problem. The land shall be raised by at least 1m to mitigate inundation risk.

63. **Suryavinayak Rehabilitation Center.** Slope failure protection is required as the proposed site is located on hilly terrain and road lies nearby. Construction of gabion wall is proposed for bank protection.

G. Materials Used

64. Raw materials for building construction will include brick, cement, tiles, paints, varnish, and mild steel rods; deformed steel bars and wires for shall be for concrete reinforcement; and galvanized steel and PVC pipes shall be used for water supply. The design and construction estimates expect to use local materials except for material and equipment to be purchased in the commercial market. It is noted from the field assessment that aggregates and other materials are easily available near the subproject area. Quarry materials will be procured from

government-approved sources. No materials containing asbestos will be used for building construction. Details of material types and sources are discussed in the technical feasibility report.

H. Staff and Equipment Requirement

65. Subproject construction period will be approximately 18 months followed by a 1-year defect liability period. Project equipment will include concrete pumps, excavators, loaders, mixer machines, vibrators, hoisting machines, concrete testing machines, compressors, and others. During construction, both skilled and nonskilled workers will be hired on a contractual basis until project completion, with a significant number being local area hires. Security guards, an electrician, and a gardener will be hired either as temporary or permanent employees based on a mutual agreement with the proponent during building operation, and their number will vary (i.e., three to five persons) for each subproject site. Staff and equipment details are further discussed in the technical reasibility report.

I. Land Required for the Project Components

66. The WCSCSCs shall be constructed within the compound of the respective APOs, where the property is under government jurisdiction. Similarly, the property required for the rehabilitation center is also under jurisdiction of the Mangala-Shahans rehabilitation center of MOWCSC. Details regarding the land required for the different subprojects is presented in Table 13.

Table 13: Land Requirement and Avaibility for the Subproject

SN	WCSCSC/ Rehabilitation Center	Land Ownership	Total land area (m^2)	Land Required for Construction (m^2)	Remarks
1	Bhediya APO, Surunga 2, Saptari	APO, Surunga	7703.84	248.56	No problem for construction
2	Gaushala APO,Gaushala-5, Mahottari	APO, Gaushala	2370.41	248.56	No problem for construction
3	Simara APO, Jitpur samara-1, Bara	APO Jitpursimara	447.34	248.56	No problem for construction
4	Pokhariya APO, Pokhariya-4, Parsa	APO Pokhariya	673.11	248.56	No problem for construction
5	Suryavinayak rehabilitation center, Suryabinayak-7, Bhaktapur	MoWCSS	4324.00	NA	No problem for construction

V. DESCRIPTION OF THE ENVIRONMENT

A. Physical Environment

1. Topography and Geology

67. The subproject districts namely; Saptari, Mahottari, Bara and Parsa are located in Madhesh Pradesh province and Bhaktapur district in Bagmati province. The Saptari, Mahottari, Bara and Parsa districts represent the subprojects in terai areas whereas Bhaktapur district has sloppy terrain. The project area has been recognized as having fertile cultivated flat land, sloppy terrain, and desolate sections. The ground profiles in the

municipalities of Bhediya, Gaushala, Jitpursimara and Pokhariya are flat and ground profile of Suryavinayak municipalities is sloppy and flat. The plain Terai region is located at an elevation of 100–110 meters above sea level. The project region has been described as cultivated flat land with fertile soil. The northern half of the municipality is slightly sloppier than the other parts of the municipality (east, west, and south). The project area has a flat ground profile throughout. The area of Saptari and Mahottari districts are located west of the Koshi River Basin and are made up of very fine-grained sediments such as variegated mudstone, siltstone, and shale, as well as tiny amounts of fine-grained sandstone. Coarse sandy cobble material and clayey loamy soil with sandy soil characterize this project region. On shallow depths, no rock formations have been detected or are expected. Suryavinayak consists of Feldspathic schist; Schist and Gneisses; Phyllites and schists and Slates and phyllites. The Katal Formation and Anarkholi Formation are the younger rock units of the Tosh Group. Nepal is situated in a highly earthquake-prone zone lying in the boundary of Indo-Australian and Asian plates. Hence, the country experiences major earthquakes in every 70 years. The National Building Code should thus be followed when designing buildings, which has provisions for earthquake safety factor.

2. Climate and Precipitation

68. The climate in the municipalities of Surunga and Gaushala is lower tropical temperate and humid, with dry winters and warm summers. Saptari district has a number of rain gauge stations as well as a climatological station. Saptari district is home to climatological station 1212 in Phattepur, 1223 at Rajbiraj, and a rainfall station 1226 at Barmajhiya. Data from these stations show that summer temperatures range from 32 to 38 degrees Celsius (°C), while winter temperatures range from 4 to 18°C.

69. The climate of the Gaushala municipality region is lower tropical temperate, humid, and dry in the winter and warm in the summer. Mahottari district has a number of rain gauge stations as well as a climatological station. Summer temperatures range from 32°C to 38°C, while winter temperatures range from 4 to 18°C. In the summer, the normal temperature is 29–35°C, while in the winter; it is 14 to 25°C, indicating that the summer climatic condition is extremely hot, while the winter climatic condition is extremely cold. The month of June is known for having the hottest weather, whereas the month of January is known for having the coldest weather. In Bhaktapur, the average annual temperature is 16°C. About 2596 mm of precipitation falls annually. Terai plains are generally flooded during heavy precipitation in monsoon. The area will remain flooded for few hours to several days, and slowly drain out once rain stops.

3. Hydrogeology

70. The Koshi River is the major river basin in the eastern part of Nepal. However, there are other rivers such as Khando river in the district along with some wetlands near the Koshi bank. There are several rivers – Banke, Bindhi, Goge, Jangha, Megha and Rato flows across Mahottari district with a number of ponds – Mahottari Pokhari, Barun Sar and Bhargais Sar. Bakaiya, Jamuniya, Pasaha, Dudhaura and Simara- Bangari are the major rivers in Bara. There is also Rapti River in the north, Rewa River in the south and the Narayani River in the west which flows in the Parsa district. Similarly, Manohara, Hanumante, Tabyakhusi, Mahadev Khola, Khasangkhusung and Ghattekhola are the major rivers of Bhaktapur with 43 ponds such as; Siddhapokhari, Kamalpokhari and Napokhari and over 56 stone taps. There are some artificial ponds in the Saptari, Bara, Parsa, Mahottari and districts. These bodies of water are listed in Table 14.

Table 14: Major rivers/streams/rivulets

S.N.	Name and Location of Sub Project	Major rivers/streams/Rivulets	Distance from River
1	Bhediya APO, Surunga 2, Saptari	Balan khola, Juri khola, kurra khola, Banna khola, Cherhaka river	All proposed sites are more than a kilometer away from rivers. Despite of this, the area in terai plains have flooding risk during heavy precipitation. Although, the flood water will slowly drain out.
2	Gaushala APO,Gaushala-5, Mahottari	Maraha khola	
3	Simara APO, Jitpur samara-1, Bara	Badganga, Bashaha, Dudhauraans rivers and some rivulets	
4	Pokhariya APO, Pokhariya-4, Parsa	Dhutaham river, Narayani Cannel and some rivulets	
5	Mangala Sahana Rehabilitation Center (MSRC), Suryavinayak-7, Bhaktapur	MahadevKhola, Gokulghatkhla, Budigandaki	

Source: IEE Field Study, 2021–2022.

B. Biological Environment

1. Flora in the Project Area

71. The subproject areas are in a covered flat terai and hilly slopy region, with scattered tropical mixed and fairly-dense forests managed by community forest groups. The major vegetation species of Surunga-2 consists of sal *(Shorea robusta)*, masala *(Eucylaptus)*, sissoo *(Dalbergia sissoo),* mango *(Mangifera indica)*, peepal *(Ficus religiosa)*, bar (*Ficus bengalensis),* bel (*Aegle marmelos),* katahar (*Artocarpus heterophyllus),* lahare ful (*Catharanthus roseus),* Ashoka *(Saraca asoca)*, kagati (*Citrus limon),* jamun *(Syzygium cumini)*, amba *(Psidium guajava)*. The subproject area of Gaushala-5 has species of masala *(Eucylaptus)*, peepal, sissoo, bar, and mango. The major vegetation species of Jeetpursimara-1 consists of sal, masala, sissoo, mango, kavro (*Ficus nemoralis*), bell (*Aegle marmelos)*, mango, prijat (*Nyctanthes arbor-tristis*), teak (*Tectona grandis),* and dhupi (*Juniperus indica)*. The major vegetation species of Pokhariya-4 consists of mango, dhupi, sissoo, peepal, amba, masala and neem (*Azadirachta indica).* The major vegetation species of Suryavinayak-7 consists of salla (*Pinus roxburghii),* chilaune (*Michelia champaca*), katus (*castonopsis indica*) and rhododendron (*Rhododendron arborium).* Although salla is considered as IUCN threatened category, none of the protected species will be cleared for construction. The detail of Community Forest Users Group (CFUG) and vegetation found in five different subprojects are illustrated in the Table 15.

Table 15: List of CFUG and Vegetation in subproject Ward

S.N.	Name and location of Sub Project	CFUG in Subproject Ward	Trees Present in the Subproject Location
1	Bhediya APO, Surunga 2, Saptari	Bhediya CFUG, Satpatre CFUG, Deurali CFUG, Bhaluai CFUG	sal *(IUCN threatened category)*, masala, sissoo, aap, bhageni, peepal, bar, bel, katahar, kagati, ashok, jamun
2	Gaushala APO,Gaushala-5, Mahottari	-	masala, aap, peepal, bar, bel, jamun
3	Simara APO, Jitpur samara-1, Bara	Radha Krsihana	kavro, bell, mango, prijat, teak, dhupi

S.N.	Name and location of Sub Project	CFUG in Subproject Ward	Trees Present in the Subproject Location
4	Pokhariya APO, Pokhariya-4, Parsa	-	pipal, mango, dhupi, masala, sisau, amba and neem
5	Mangala Sahana Central 26ehabilitation Center (MSRC), Suryavinayak-7, Bhaktapur	Ranikot CFUG and Mahankal CFUG	salla (IUCN threatened category), chilaune, katus, rhododendron, aaru, paiyau

Source: IEE Field Study, 2021-2022.

2. Non-Timber Forest Products in the Project Area

72. The main non-timber forest species (Table 16) found in the subproject areas are amala *(Emblica officinalis),* tejpatta, neem *(Azadirchta indica),* tulsi *(Ocimum scantum),* bojho *(Acorus calamus),* and bel*.*

Table 16: List of Non-Timber Forest Product Available in Respective Subproject Area

S.N.	Location of Subproject	Major NTFP in Subproject area
1	Bhediya APO, Surunga 2, Saptari	Amala *(Emblica officinalis),* Tejpatta *(Cinnamomum tamala),* Neem *(Azadirchta indica),* Tulsi *(Ocimum scantum),* Bojho *(Acorus calamus) and* Bel *(Aegle marmelos)*
2	Gaushala APO, Gaushala-5, Mahottari	Amala *(Emblica officinalis),* Tejpatta *(Cinnamomum tamala),* Neem *(Azadirchta indica),* Tulsi *(Ocimum scantum),* Bojho *(Acorus calamus)*
3	Simara APO, Jitpur samara-1, Bara	Amala *(Emblica officinalis),* Tejpatta *(Cinnamomum tamala),* Neem *(Azadirchta indica),* Tulsi *(Ocimum scantum),* Bojho *(Acorus calamus)*
4	Pokhariya APO, Pokhariya-4, Parsa	Amala *(Emblica officinalis),* Tejpatta *(Cinnamomum tamala),* Neem *(Azadirchta indica),* Tulsi *(Ocimum scantum),* Bojho *(Acorus calamus)*
5	Ranikot CFUG and Mahankal CFUG	Amala *(Emblica officinalis),* Tejpatta *(Cinnamomum tamala),* Neem *(Azadirchta indica),* Tulsi *(Ocimum scantum),* Bojho *(Acorus calamus)*

Source: IEE Field Study, 202.

3. Fauna in the Project Area

73. **Mammals.** There are various species of mammals near the subproject sites and their adjacent areas. The biodiversity near WCSCSC at Bhediya APO in the subproject area of Suranga 2 is characterized by the presence of various species of mammals and birds such as white-tailed deer *(Odocoileus virginiana)*, common leopard *(Panthera pardus)*, monkey *(Macaca mulatta)*, golden jackal *(Canis aureus)*, common rat *(Rattus rattus)*, badel or wild boar (*Sus scrofa*), and bats *(Cynopterus sphinx).* About 50 kilometers away from the sub-project area there is a Koshi tappu wildlife reserve. The Gaushala APO area of Gaushala-5 has species of white-tailed deer, nilgai (*Boselaphus tragocamelus),* monkey, and Tiger *(Panthera tigris)*, Badel *(Sus scrofa)*, and golden jackal *(Canis aureus)*. Some of the common mammals recorded near the subproject at Pokjariya Apo in Pokhariya-4 include white-tailed deer, common leopard, badel, tiger, monkey, and golden jackal. The subproject is located 20km away from the Parsa Wildlife Reserve.The biodiversity near the Simara APO of Jeetpursimara-1 includes white-tailed deer, common leopard *(Panthera pardus)*, monkey, golden jackal, tiger *(Panthera tigris)*, and badel. It is 2km away from Parsa Wildlife reserve. The biodiversity near the subproject in Suryavinayak includes white-tailed deer, common leopard, monkey, golden jackal, tiger, and badel. The species listed are to be found in the district and not in subproject area. The National Zoological Garden serves as an ex-situ conservation site for the protection and breeding of endangered and exotic animals. The garden was established in 2015 in Suryavinayak, Bhaktapur covering 245.165 hectares surrounded by a 16-km perimeter of community forests. The area is wire-fenced on the perimeter. No human-wildlife conflict were reported in and around the subproject area in the

past. The list of major mammals found in the vicinity of the proposed subproject sites is in Table 17.

Table 17:List of Common Mammals in the Different Subproject District

S. N.	English Name	Local Name	Scientific Name and conservation status
Saptari district (WCSCSC at Surunga APO)			
1	White Tailed Deer	Mriga	*Odocoileus virginiana*
2	Asian Elephant	Hatti	*Elephas maximus- Endangered*
3	Golden Jackal	Syaal	*Canis aureus*
4	Hog Deer	Laguna/Pade	*Axis porcinus*
5	Common Leopard	Chituwa	*Panthera pardus- Vulnerable*
6	Common Rat	Musa	*Rattus rattus*
7	Mongoose	Nyauri Musa	*Herpestes auropunctatus*
8	Monkey	Badar	*Macacca mulatta*
9	Smooth – coated Otter	Pani Biralo	*Lutrogale perspicillata- Vulnerable*
10	Northern Palm Squirrel	Paanch Dharke Lokharke	*Funambulus pennantiii*
11	Wild Boar	Bandel	*Sus scrofa*
Mahottari district(WCSCSC at Gaushala APO)			
1	White Tailed Deer	Mriga	*Odocoileus virginiana*
2	Asian Elephant	Hatti	*Elephas maximus- Endangered*
3	Golden Jackal	Syaal	*Canis aureus*
4	Hog Deer	Laguna/Pade	*Axis porcinus*
5	Common Leopard	Chituwa	*Panthera pardus- Vulnerable*
6	Common Rat	Musa	*Rattus rattus*
7	Mongoose	Nyauri Musa	*Herpestes auropunctatus*
8	Monkey	Badar	*Macacca mulatta*
9	Smooth – coated Otter	Pani Biralo	*Lutrogale perspicillata*
10	Northern Palm Squirrel	Paanch Dharke Lokharke	*Funambulus pennantiii*
11	Wild Boar	Bandel	*Sus scrofa*
Bara district (WCSCSC at Simara APO)			
1	White Tailed Deer	Mriga	*Odocoileus virginiana*
2	Asian Elephant	Hatti	*Elephas maximus- Endangered*
3	Golden Jackal	Syaal	*Canis aureus*
4	Hog Deer	Laguna/Pade	*Axis porcinus*
5	Common Leopard	Chituwa	*Panthera pardus- Vulnerable*
6	Common Rat	Musa	*Rattus rattus*
7	Mongoose	Nyauri Musa	*Herpestes auropunctatus*
8	Monkey	Badar	*Macacca mulatta*
9	Smooth – coated Otter	Pani Biralo	*Lutrogale perspicillata- Vulnerable*
10	Northern Palm Squirrel	Paanch Dharke Lokharke	*Funambulus pennantiii*
11	Wild Boar	Bandel	*Sus scrofa*
Parsa district (WCSCSC at Pokhariya APO)			
1	White Tailed Deer	Mriga	*Odocoileus virginiana*
2	Asian Elephant	Hatti	*Elephas maximus- Endangered*
3	Golden Jackal	Syaal	*Canis aureus*
4	Hog Deer	Laguna/Pade	*Axis porcinus*
5	Common Leopard	Chituwa	*Panthera pardus- Vulnerable*
6	Common Rat	Musa	*Rattus rattus*
7	Mongoose	Nyauri Musa	*Herpestes auropunctatus*
8	Monkey	Badar	*Macacca mulatta*
9	Smooth – coated Otter	Pani Biralo	*Lutrogale perspicillata- Vulnerable*
10	Northern Palm Squirrel	Paanch Dharke Lokharke	*Funambulus pennantiii*
11	Wild Boar	Bandel	*Sus scrofa*
Bhaktapur district (Rehabilitation center at Suryavinayak-7, Subbakopakha)			
1	White Tailed Deer	Mriga	*Odocoileus virginiana*
2	Asian Elephant	Hatti	*Elephas maximus- Endangered*
3	Golden Jackal	Syaal	*Canis aureus*
4	Hog Deer	Laguna/Pade	*Axis porcinus*
5	Common Leopard	Chituwa	*Panthera pardus- Vulnerable*
6	Common Rat	Musa	*Rattus rattus*

S. N.	English Name	Local Name	Scientific Name and conservation status
7	Mongoose	Nyauri Musa	*Herpestes auropunctatus*
8	Monkey	Badar	*Macacca mulatta*
9	Smooth – coated Otter	Pani Biralo	*Lutrogale perspicillata- Vulnerable*
10	Northern Palm Squirrel	Paanch Dharke Lokharke	*Funambulus pennantiii*
11	Wild Boar	Bandel	*Sus scrofa*

Source: IEE Field Study, 2021.

74. **Avifauna.** Major bird species can be found at the proposed subproject areas in the Saptari and Mahottari districts since Koshi tappu wildlife reserve and Koshi river is close to the subproject area. In Dang district, Banke National Park is 65 kilometers from the subproject area. There are also some artificial ponds in the subproject areas. During winter, several migratory bird species from the People's Republic of China, Mongolia, and Siberia can be seen around the reserve. The common birds found in and around the subproject areas are listed in Table 18.

Table 18: List of major Species of Birds in the Subproject Districts

S.N.	English Name	Local Name	Scientific Name and Conservation Staus
List of Birds recorded Saptari, Mahottari, Bara, Parsa and Bhaktapur districts			
1	Spotted Dove	Kurle Dhukur	*Streptopelia chinensis*
2	Abbotts's Babbler	Motothude Bhyakur	*Malacocincla abbotti*
3	Red-vented bulbul	Jureli	*Pycnonotus cafer*
4	Bengal Floricans	Kharamjur	*Houbaropsis bengalens- Critically endangered*
5	Black Headed Cuckooshrike	Kalo Tauke Birahi Chari	*Coracina melanoptera*
6	Common Golden-Eye	Swarna Nayan Haans	*Bucephala clangula*
7	Crow	Kaag	*Corvus splendus*
8	Cuckoo	Koili	*Cucuclus micropterus*
9	Dove	Dhukur	*Streptopelia*
10	Dusky Eagle owl	Bhasoluk	*Bubo coromandus*
11	Gull-billed Tern	Gangachilthude Phyalphyale	*Sterna nilotica*
12	Indian Nightjar	Chukchuke Chaite Chara	*Caprimulgus asiaticus*
13	Large Adjutant Stork	Garud	*Leptoptilus dubius- Endangered*
14	Pallas's Fish Eagle	Boksi Chil	*Haliaeetus leucoryphus- Endangered*
15	Pigeon	Parewa	*Columba livia*
16	Rufous-vented grass babbler	Kailokanthe Dikurebhyakur	*Laticilla burnesii*
17	Sparrow	Bhangera	*Passer domesticus*
18	Striated Grassbird	Narkat Ghansechari	*Megalurus palustris*
19	Swamp Francolin	Simatitra	*Francolinus gularis*
20	Water Cock	Thulo Jhilli	*Gallicrex cinerea*
21	White Tailed Stonechat	Kase Jhyaapsi	*Saxicola leucurus*
22	Jungle crow	Ban Kag	*Corvus macrorhynchos,*
23	House sparrow	Bhangera	*Passer domesticus*
24	Black Drongo	Kalo hibe	*Dicrurus macrocercus*

Source: IEE Field Study, 2021.

75. Consultations in aid of the IEE study noted that there are no rare, endangered, or protected plant species in the subproject areas. Common species of mammals, birds, reptiles, and amphibians were recorded in the project area. The construction of WCSCSC will be within the fenced compound of the APOs which will keep animals away from the area.

76. **Herpetofauna.** Commonly found herpetofauna (reptiles and amphibians) species reported in the subproject areas are listed in Table 19.

Table 19: List of Major Herpito-Fauna Species in the Subproject Districts

S.N.	English Name	Local Name	Scientific Name
List of Herpito-Fauna Species recorded Saptari, Mahottari, Bara, Parsa, Bhaktapur districts			
1	Stream Frog	Bhyaguto	*Rana cyanophylectis*
2	Olive Keel back Water Snake	Pani Sarpa	*Atretium Schistosum*
3	Green Pit Viper	Hariyo Sarpa	*T. albolabris*
4	Frog	Bhyaguto	*Sphaerotheca swani*
5	Garden lizard	Chheparo	*Calotes versicular*
6	House Lizard	Mausuli	*Hemidactylus Flaviviridis*
7	Rat snake	Dhaman	*Ptyas mucosus*
8	Common Indian Monitor	Bhainse Gohoro	*Varanus Bengalensis*
9	Terai Cricket Frog	Bhyaguta	*Minervarya teraiensis*
10	Terai Bush Frog	Bhyaguta	*Polypedates taeniatus*
11	Shuklaphata Sitana	Cheparo	*Sitana schleichi*
12	Common Vine Snake	Sarpa	*Ahaetulla nasuta*
13	Rat Snake	Sarpa	*Ptyas mucosa*
14	Common Cobra	Sarpa	*Naja naja*
15	King Cobra	Sarpa	*Ophiophagus Hannah-Vulnerable*
16	Marbled Toad	Bhyaguta	*Dutaphrynus stomatcus*

Source: IEE Field Study, 2021.

77. **Aquatic life.** The most common fishes found in Koshi River and other streams, rivulets and ponds in **Saptari, Mahottari, Bara, Parsa and Bhaktapur** districts are listed in Table 20. The subproject construction will not affect any of the fish habitat or fish species.

Table 20: List of Fishes Found in the Subproject Districts

S.N.	English Name	Local Name	Scientific Name
List of Fishes recorded Saptari, Mahottari, Bara, Parsa and Bhaktapur districts			
1	Katli	Katle	*Neolissocheilus hexagonolepis-vunnerable*
2	Catfish	Mungri/Kavre	*Glyptothorax Indicus*
3	Stinging Catfish	Singhi	*Heteropneustes fossilis*
4	Stone Roller	Chuche Buduna	*Garra Annandalei*
5	Spiny Eel	Bam	*Mastacembelus Armatus*
6	Dwarf Sankehead	Hile	*Channa Gachua*
7	Dinnawah Snowtrout	Chuhhe Asala	*Schizothorax Progastus*
8	Stone Carp	Tite	*Psilorhynchus Pseudecheneis*
9	Golden Mahseer Fish	Sahar	*Tor putitora- Endangered*
10	Gangetic-Dolphins	Susu	*Platanista gangetica- Endangered*

Source: IEE Field Study, 2021.

4. Protected Area

78. A review of reports and field observations noted that the proposed subprojects are not located in ecologically sensitive areas. Koshi Tappu Wildlife Reserve is located 50 km away Bhediya APO and Gaushala APO is located 15 km away from chure hills. Parsa Wildlife Reserve is located 2 km away from Simara APO and 20 km away from and Pokhariya APO.

The National Zoological Garden is situated nearby (100m away) the subproject area of the proposed national rehabilitation center in Bhaktapur.

C. Socioeconomic and Cultural Environment

1. Demography

79. The four proposed WCSCSC and one national rehabilitation center are within different settlement areas. The Bhediya APO located in Surunga-2 ofSaptari district consists of Bhediya, Kamalpur, Bauna, Raksa, and Hardiya. The Gaushala APO in Gaushala-5 of Mahottari district covers Gaushala and Gaurighat. The Simara APO in Bara district consists of Pipara, Samara and Gadhimai. The Pokhariya APOS in Parsa district covers Pokhariya. The settlement areas near Suryavinayak rehabilitation center include Katuje, Sipadol, Chitpol, Sirutar, Gundu, Dadhikot, Balkot The total number of households in the subproject areas with male and female population in the minucipalities or wards is presented in Table 21.

Table 21: Total Number of Households by Subproject Ward with Male and Female Population

Name of Subproject	Municipality/ Ward	Total Households	Male Population	Female Population
WCSCSC Bhediya APO	Surunga 2, Saptari	1139	2467	2819
WCSCSC Gaushala APO	Gaushala-5, Mahottari	1018	2963	2792
WCSCSC Simara APO	Jeetpursimara-1, Bara	1649	3651	3570
WCSCSC Pokhariya APO	Pokharia-4, Parsa	404	1355	1376
Rehabilitation center at Subbakopakha	Suryavinayak-7, Bhaktapur	1257	2735	2954

Source: Central Bureau of Statistics, Nepal, 2011.

2. Household, Population, and Average Household Size

80. The total number of households in different subproject location lies in the terai region. There is high population density and high number of households in Bhaktapur district compared Saptari, Mahottari, Bara and Parsa districts. The data in Table 22 shows that there is high average household size in the district of Parsa compared to the other districts.

Table 22: Household Size and Population by Municipality

Name of Subproject	Municipality	Total Household	Population			Average HH size	Sex ratio
			Male	Female	Total		
WCSCSC Bhediya APO	Surunga 2, Saptari	1139	2467	2819	5286	4.64	87.51
WCSCSC Gaushala APO	Gaushala-5, Mahottari	3022	8763	8323	17086	5.65	105.29
WCSCSC Simara APO	Jitpursimara-1, Bara	5253	11906	11929	23835	4.54	99.81
WCSCSC Pokhariya APO	Pokharia-4, Parsa	1015	3558	3437	6995	6.89	103.52
Rehabilitation center at Subbakopakha	Suryavinayak-7, Bhaktapur	18446	38899	39591	78490	4.26	98.25

Source: Central Bureau of Statistics, Nepal, 2011.

3. Caste or Ethnicity

81. The population distribution in the four different subproject areas is categorized according to caste (Table 23). The major caste residing the subprojects is Chhetri followed by Brahmins, Magar, and Tharu.

Table 23: Population distribution in different Caste and Ethnicity

Caste and Ethnicity	Populations details		
	Male	Female	Total Population
WCSCSC Bhediya APO, Suranga 2, Saptari			
Chhetri	427	503	930
Brahman – Hill	148	190	338
Magar	129	174	303
Tharu	807	905	1712
Tamang	26	25	51
Kami	61	75	136
Yadav	176	193	369
Damai/Dholi	7	11	18
Teli	55	70	125
Chamar/Harijan/Ram	110	129	239
Koiri/Kushwaha	185	170	355
Musahar	200	196	396
Dusadh/Pasawan/Pasi	48	74	122
Hajam/Thakur	12	14	26
Kumhar	8	10	18
Danuwar	30	36	66
Haluwai	8	6	14
Kayastha	5	7	12
Others	25	31	56
Total	**2467**	**2819**	**5286**
WCSCSC Gaushala APO, Gaushala-5, Mahottari			
Chhetri	156	78	78
Brahman – Hill	324	153	171
Magar	797	395	402
Tharu	211	103	108
Tamang	161	77	84
Newar	341	170	171
Musalman	769	379	390
Kami	82	43	39

Caste and Ethnicity	Populations details		
	Male	Female	Total Population
Yadav	768	412	356
Rai	14	6	8
Damai/Dholi	89	43	46
Thakuri	50	25	25
Teli	1336	679	657
Chamar/Harijan/Ram	602	317	285
Koiri/Kushwaha	3096	1617	1479
Kurmi	143	77	66
Sanyasi/Dashnami	94	44	50
Dhanuk	341	181	160
Musahar	709	378	331
Dusadh/Pasawan/Pasi	186	96	90
Sonar	394	194	200
Kewat	137	73	64
Brahman – Tarai	165	70	95
Kathbaniyan	647	356	291
Gharti/Bhujel	128	58	70
Mallaha	224	123	101
Kalwar	678	354	324
Hajam/Thakur	266	135	131
Kanu	696	356	340
Sudhi	954	483	471
Lohar	280	153	127
Tatma/Tatwa	245	121	124
Khatwe	265	132	133
Dhobi	56	29	27
Nuniya	167	89	78
Kumhar	72	30	42
Danuwar	52	25	27
Haluwai	501	254	247
Rajput	73	32	41
Kayastha	39	24	15
Satar/Santhal	11	6	5
Baraee	247	133	114

Caste and Ethnicity	Populations details		
	Male	Female	Total Population
Bin	197	104	93
Gaderi/Bhedhar	21	11	10
Bangali	18	10	8
Dom	53	31	22
Halkhor	27	13	14
Punjabi/Shikh	83	40	43
Amat	15	6	9
Others	39	18	21
Terai Others	67	27	40
Total	**17086**	**8763**	**8323**
WCSCSC Simara APO, Jitpursimara-1, Bara			
Chhetri	2432	2512	4944
Brahman – Hill	3126	3276	6402
Magar	413	396	809
Tharu	615	593	1208
Tamang	1452	1499	2951
Newar	850	885	1735
Musalman	520	462	982
Kami	270	250	520
Yadav	132	128	260
Rai	170	177	347
Gurung	102	107	209
Damai/Dholi	64	72	136
Limbu	26	29	55
Thakuri	41	39	80
Sarki	57	50	107
Teli	136	111	247
Chamar/Harijan/Ram	87	84	171
Koiri/Kushwaha	64	36	100
Kurmi	74	55	129
Sanyasi/Dashnami	89	91	180
Dhanuk	24	22	46
Musahar	20	22	42
Dusadh/Pasawan/Pasi	24	14	38

Caste and Ethnicity	Populations details		
	Male	Female	Total Population
Sonar	11	9	20
Kewat	26	17	43
Brahman – Tarai	43	35	78
Kathbaniyan	12	9	21
Gharti/Bhujel	50	43	93
Mallaha	104	110	214
Kalwar	58	46	104
Kumal	13	21	34
Hajam/Thakur	55	41	96
Kanu	122	102	224
Sunuwar	15	20	35
Sudhi	29	24	53
Lohar	36	29	65
Tatma/Tatwa	12	10	22
Khatwe	7	5	12
Dhobi	12	9	21
Majhi	29	27	56
Nuniya	11	7	18
Kumhar	6	5	11
Danuwar	10	9	19
Chepang/Praja	7	7	14
Haluwai	24	17	41
Rajput	89	58	147
Kayastha	100	105	205
Badhaee	11	6	17
Marwadi	8	6	14
Jhangad/Dhagar	59	76	135
Baraee	53	39	92
Bhote	8	6	14
Bangali	9	5	14
Punjabi/Shikh	7	6	13
Ghale	5	6	11
Others	23	31	54
Dalit Others	42	56	98

Caste and Ethnicity	Populations details		
	Male	Female	Total Population
Terai Others	7	11	18
Undefined Others	5	6	11
Total	**11906**	**11929**	**23835**
WCSCSC Pokhariya APO, Pokhariya-4, Parsa			
Chhetri	610	600	
Brahman – Hill	28	30	
Musalman	459	484	
Yadav	53	45	
Rai	14	18	
Sarki	16	19	
Teli	37	41	
Chamar/Harijan/Ram	420	413	
Koiri/Kushwaha	49	49	1210
Kurmi	321	307	58
Sanyasi/Dashnami	170	144	943
Dusadh/Pasawan/Pasi	61	65	98
Sonar	18	15	32
Brahman – Tarai	29	28	35
Kathbaniyan	192	165	78
Mallaha	120	134	833
Kalwar	58	45	98
Kumal	14	15	628
Hajam/Thakur	125	98	314
Kanu	349	329	126
Lohar	53	50	33
Dhobi	72	83	57
Nuniya	104	100	357
Kumhar	11	9	254
Haluwai	9	12	103
Kayastha	15	11	29
Satar/Santhal	38	34	223
Bin	38	22	678
Dom	8	9	103
Kamar	22	22	155

Caste and Ethnicity	Populations details		
	Male	**Female**	**Total Population**
Others	8	7	204
Terai Others	20	17	20
Foreigner	17	17	21
Total	**3558**	**3437**	**6995**
Rehabilitation center at Suryavinayak-7, Bhaktapur			
Balkot			
Chhetri	2875	2946	5821
Brahman – Hill	2123	2081	4204
Magar	195	191	386
Tharu	109	71	180
Tamang	380	366	746
Newar	1442	1472	2914
Musalman	39	29	68
Kami	25	30	55
Yadav	52	35	87
Rai	150	161	311
Gurung	31	32	63
Damai/Dholi	18	22	40
Limbu	70	82	152
Thakuri	42	58	100
Teli	31	12	43
Chamar/Harijan/Ram	14	4	18
Koiri/Kushwaha	19	4	23
Sanyasi/Dashnami	26	22	48
Sherpa	8	7	15
Brahman – Tarai	9	8	17
Gharti/Bhujel	64	76	140
Kalwar	10	4	14
Kumal	7	4	11
Hajam/Thakur	18	11	29
Sunuwar	9	4	13
Sudhi	14	18	32
Majhi	8	9	17
Kayastha	6	6	12

Caste and Ethnicity	Populations details		
	Male	Female	Total Population
Ghale	34	36	70
Bantaba	10	2	12
Others	54	30	84
Dalit Others	56	55	111
Terai Others	29	16	45
Total	**7977**	**7904**	**15881**
Chitapol			
Chhetri	1449	1533	2982
Brahman – Hill	148	146	294
Magar	168	190	358
Tamang	49	48	97
Newar	690	691	1381
Kami	14	20	34
Rai	6	14	20
Damai/Dholi	48	44	92
Sarki	37	46	83
Gharti/Bhujel	57	49	106
Badi	9	6	15
Others	30	25	55
Dalit Others	53	49	102
Total	**2758**	**2861**	**5619**
Dadhikot			
Chhetri	1689	1662	3351
Brahman – Hill	1677	1669	3346
Magar	101	93	194
Tharu	20	15	35
Tamang	276	293	569
Newar	1695	1706	3401
Musalman	36	14	50
Kami	57	52	109
Yadav	12	7	19
Rai	35	41	76
Gurung	8	8	16
Damai/Dholi	19	26	45

Caste and Ethnicity	Populations details		
	Male	Female	Total Population
Limbu	18	26	44
Thakuri	16	13	29
Teli	14	10	24
Koiri/Kushwaha	11	5	16
Sanyasi/Dashnami	54	50	104
Gharti/Bhujel	12	13	25
Danuwar	11	6	17
Others	73	39	112
Dalit Others	25	22	47
Total	**5859**	**5770**	**11629**
Gundu			
Chhetri	1010	1061	2071
Brahman – Hill	231	261	492
Magar	66	83	149
Tamang	432	453	885
Newar	896	968	1864
Kami	12	17	29
Damai/Dholi	50	51	101
Sarki	21	27	48
Sanyasi/Dashnami	3	13	16
Others	14	20	34
Total	**2735**	**2954**	**5689**
Katunje			
Chhetree	1796	1865	3661
Brahman – Hill	1410	1410	2820
Magar	239	256	495
Tharu	51	34	85
Tamang	1490	1597	3087
Newar	3625	3528	7153
Musalman	41	24	65
Kami	95	103	198
Yadav	23	16	39
Rai	115	156	271
Gurung	65	78	143

Caste and Ethnicity	Populations details		
	Male	Female	Total Population
Damai/Dholi	66	76	142
Limbu	58	69	127
Thakuri	25	37	62
Sarki	247	299	546
Teli	11	5	16
Koiri/Kushwaha	38	2	40
Sanyasi/Dashnami	24	26	50
Dhanuk	8	11	19
Sherpa	29	29	58
Kathbaniyan	10	3	13
Gharti/Bhujel	25	29	54
Kumal	5	7	12
Hajam/Thakur	25	16	41
Majhi	23	29	52
Haluwai	9	2	11
Marwadi	7	5	12
Dhimal	8	8	16
Pahari	7	11	18
Badi	15	10	25
Others	69	30	99
Dalit Others	14	12	26
Terai Others	25	16	41
Total	**9698**	**9799**	**19497**
Nankhel			
Chhetree	1388	1477	2865
Brahman – Hill	41	47	88
Magar	93	108	201
Tharu	9	7	16
Tamang	347	341	688
Newar	623	602	1225
Kami	6	6	12
Damai/Dholi	53	63	116
Sarki	64	68	132
Gharti/Bhujel	43	51	94

Caste and Ethnicity	Populations details		
	Male	Female	Total Population
Majhi	9	9	18
Others	27	27	54
Total	**2703**	**2806**	**5509**
Sipadol			
Chhetree	1235	1293	2528
Brahman – Hill	169	143	312
Magar	161	163	324
Tharu	21	13	34
Tamang	1082	1188	2270
Newar	1785	1801	3586
Musalman	22	5	27
Kami	88	100	188
Rai	36	36	72
Gurung	7	10	17
Damai/Dholi	27	28	55
Limbu	10	21	31
Thakuri	16	7	23
Sarki	33	40	73
Sanyasi/Dashnami	36	37	73
Sherpa	5	6	11
Brahman – Tarai	12	16	28
Gharti/Bhujel	33	28	61
Sunuwar	8	11	19
Haluwai	7	4	11
Dhimal	4	8	12
Badi	25	25	50
Others	40	31	71
Total	**4862**	**5014**	**9876**
Sirutar			
Chhetree	1167	1262	2429
Brahman – Hill	200	207	407
Magar	68	87	155
Tamang	35	23	58
Newar	730	771	1501

Caste and Ethnicity	Populations details		
	Male	Female	Total Population
Rai	20	32	52
Sanyasi/Dashnami	33	48	81
Others	21	18	39
Dalit Others	33	35	68
Total	**2307**	**2483**	**4790**
Overall total	**38899**	**39591**	**78490**

Source: Central Bureau of Statistics, Nepal,2011.

4. Households by Ownership of House/Housing Unit in Use

82. The majority of residents in the proposed subproject areas are house owners. The Bhaktapur district has a high number of houses as they have higher population density compared to the other districts. The tenure status of subproject area residents is given in Table 24.

Table 24: Households Having Ownership of House/Housing unit

Name of Sub Project	Municipality	Total Households	Hss having Ownership of House			
			Owned	Rented	Institutional	Others
WCSCSC Bhediya APO	Surunga 2,Saptari	1139	1124	14	0	1
WCSCSC Gaushala APO	Gaushala-5, Mahottari	3022	2854	146	4	18
WCSCSC Simara APO	Jeetpursimara-1, Bara	5253	4128	802	215	108
WCSCSC Pokhariya APO	Pokharia-4, Parsa	1015	1008	3	0	4
Rehabilitation center at Subbakopakha	Suryavinayak -7, Bhaktapur	18446	12476	5771	56	143

Source: Central Bureau of Statistics, Nepal, 2011.

5. Households and Source of Drinking Water

83. The major sources of drinking water in the subproject areas are tap or piped water, tube wells and hand pumps, covered and uncovered wells, spouts, and rivers and streams. Tube wells and hand pumps are mostly used as sources of drinking water (see Table 25).

Table 25: Households by Major Source of Drinking Water

Municipality	Total	Main source of drinking water							
		Tap/piped water	Tube well/ Hand pump	Covered well/kuwa	Uncovered well/kuwa	Spout water	River/ stream	Others	Not stated
Surunga	1139	13	1024	21	39	1	30	1	10
Gaushala	3022	600	2236	7	42	2	24	6	5
Jitpursimara	5253	3674	1427	5	12	5	0	61	69
Pokhariya	1015	2	1004	2	0	0	0	0	7
Suryavinayak	18446	15411	638	984	315	727	14	250	107

Source: Central Bureau of Statistics, Nepal, 2011.

6. Households by Lighting Source

84. Housholds' main fuel for lighting are electricity, kerosene, biogas, and solar. Electricity consumption has increased rapidly in the past decades, replacing kerosene and

biogas use (Table 26).

Table 26: Households by Usual Source of Lighting

Municipality	District	Total	Fuel usually used for lighting					
			Electricity	Kerosene	Biogas	Solar	Others	Not stated
Surunga	Saptari	1139	363	643	0	123	0	10
Gaushala	Mahottari	3022	1647	1357	1	9	3	5
Jitpursimara	Bara	5253	4997	156	15	7	7	71
Pokhariya	Parsa	1015	803	204	0	1	0	7
Suryavinayak	Bhaktapur	18446	18040	174	46	18	14	154

Source: Central Bureau of Statistics, Nepal, 2011.

7. Population by Disability and Sex

85. Details on the number of people with or without disability disaggregated by sex are in Table 27.

Table 27: Population With and Without Disability

Municipality	Without disability			Disability		
	Male	Female	Total	Male	Female	Total
Surunga	2411	2774	5185	56	45	101
Gaushala	8621	8198	16819	142	125	267
Jitpursimara	11685	11741	23426	221	188	409
Pokhariya	3481	3395	6876	77	42	119
Suryavinayak	38518	39252	77770	381	339	720

Source: Central Bureau of Statistics, Nepal, 2011.

8. Population Aged 5 years and Above by Literacy Status and Sex

86. Data on population aged 5 years and above, and literacy rate by sex in the different municipalities is in Table 28.

Table 28: Number of Literate Population and Literacy Rate

Municipality	Population aged 5 years and above			Population who can read and write			Not stated			Literacy rate		
	M	F	T	M	F	T	M	F	T	M	F	Total
Surunga	2250	2583	4833	1456	1230	2686	0	2	2	64.71	47.62	55.58
Gaushala	7883	7454	15337	4881	3237	8118	3	1	4	61.92	43.43	52.93
Jitpursimara	10979	11004	21983	9239	7589	16828	4	11	15	84.15	68.97	76.55
Pokhariya	3081	2947	6028	2134	1086	3220	12	22	34	69.26	36.85	53.42
Suryavinayak	36061	37135	73196	32879	26912	59791	7	19	26	90.80	70.36	80.36

Source: Central Bureau of Statistics, Nepal, 2011

9. Existing Health Situation

87. There is a health care center in each ward of the subproject areas but these only provide primary treatment, hence, residents still go to the larger district hospitals for higher order health care services. Most people go to Kathmandu, Bhaktapur, Lalitpur, Dhulikhel, Biratnagar, Dharan, and Chitwan, and even India for treatment of their health concerns. The study noted that most people are aware of good health and hygiene practices such as hand washing before touching and eating food and after defecation, etc. The total number of health facilities—including private hospitals, polyclinics, medical centers, and government health care centers—in the different subproject areas is provided in Table 29.

Table 29: List of Health Institutions in the Ward of Subproject Location

Name of Sub Projects	Health facilities			
	Government	No.	Private	No.
WCSCSC Bhediya APO	Bhediya Health Center	1	2 clinic and 1 polyclinic	3
WCSCSC Gaushala APO	Gaushala sub health post	1	City HC, Apolo clinic, Gaushala and other 3 clinics	6
WCSCSC Simara APO	Simara Primary health center	1	7 different clinics and pharmacy	7
WCSCSC Pokhariya APO	District government hospital	1	11 different clinics and pharmacy	11
Rehabilitation center at Suryavinayak	Gundu Health Post and GhyampaDanda Urban health Center	2	19 different clinics and pharmacy	19

Source: IEE field survey, 2021.

17. Occupations

88. Although the general area is gradually shifting from being a rural agricultural economy to businesses and services, majority of households are still dependent on agriculture. Figure 2.3 shows that a high percentage of household heads in Mahottari, Saptari, Bara, Parsa and Bhaktapur districts list agriculture as their primary occupation. As in other parts of Nepal however, remittances have been playing important role in increasing household incomes. The list of households by occupation in the subproject areas is presented in Table 30.

Table 30: Distribution of Occupation of Households Main

S.N.	Occupation	Households	Percent
Mahottari, Gaushala, ward-5			
1	Agriculture	371	36.44
2	Business	121	11.90
3	Services	89	8.74
4	Industry	37	3.63
5	Foreign Employment	225	22.10
6	Wages	58	5.70
7	Others	79	7.76
8	Do Nothing	17	1.70
9	No Answer	21	2.06
Total		**1018**	**100**
Saptari, Surunga, ward-2			
1	Agriculture	437	38.37
2	Business	178	15.63
3	Services	63	5.53
4	Industry	27	2.37
5	Foreign Employment	262	23.00
6	Wages	69	6.06
7	Others	47	4.13
8	Do Nothing	33	2.90
9	No Answer	23	2.02
Total		**1139**	**100**
Bara, Jitpur Simara ward-1			
1	Agriculture	578	35.05
2	Business	243	14.74
3	Services	112	6.79
4	Industry	91	5.52
5	Foreign Employment	473	28.68
6	Wages	67	4.06
7	Others	27	1.64
8	Do Nothing	33	2.00
9	No Answer	25	1.52
Total		**1649**	**100**

S.N.	Occupation	Households	Percent
Parsa, Pokhariya, ward-4			
1	Agriculture	163	40.35
2	Business	29	7.17
3	Services	21	5.20
4	Industry	19	4.70
5	Foreign Employment	137	33.91
6	Wages	7	1.73
7	Others	11	2.72
8	Do Nothing	12	2.97
9	No Answer	5	1.24
Total		**404**	**100**
Bhaktapur, Suryavinayak, ward-7			
1	Agriculture	378	30.07
2	Business	178	14.16
3	Services	107	8.51
4	Industry	127	10.10
5	Foreign Employment	231	18.37
6	Wages	87	6.92
7	Others	73	5.80
8	Do Nothing	37	2.94
9	No Answer	39	3.10
Total		**1257**	**100**

Source: IEE Field Survey, 2021.

18. Income and Expenditure of the Area

89. Economic conditions of the families in the subproject areas seem satisfactory in terms of their monthly income levels. The distribution of households by income is in Table 31, which shows that more than one-third of these households are in the second highest income bracket, i.e., they earn between NRs20,001 to NRs50,000.00 per month.

Table 31: Distribution of Subproject Ward Income Pattern

S.N.	Income Range (NRs.)	Households	Percent (%)
Mahottari, Gaushala, Ward-5			
1	<13,500	79	**7.76**
2	13,500–20,000	378	**37.13**
3	20,001–50,000	475	**46.66**
4	>50,000	86	**8.45**
Total		**1018**	**100**
Saptari, Surunga, Ward-2			
1	<13,500	87	**7.64**
2	13,500–20,000	413	**36.26**
3	20,001–50,000	503	**44.16**
4	>50,000	136	**11.94**
Total		**1139**	**100**
Bara, Jitpur Simara, Ward-1			
1	<13,500	131	**7.94**
2	13,500–20,000	638	**38.69**
3	20,001–50,000	737	**44.69**
4	>50,000	143	**8.67**
Total		**1649**	**100**
Parsa, Pokhariya, Ward-4			
1	<13,500	33	**8.17**
2	13,500–20,000	124	**30.69**
3	20,001–50,000	204	**50.50**
4	>50,000	43	**10.64**
Total		**404**	**100**
Bhaktapur, Suryavinayak, Ward-7			

S.N.	Income Range (NRs.)	Households	Percent (%)
1	<13,500	131	**10.42**
2	13,500–20,000	278	**22.11**
3	20,001–50,000	473	**37.63**
4	>50,000	375	**29.83**
Total		**1257**	**100**

Source: IEE Field Survey, 2021

D. Major Environmental Problems of Project Areas

90. During the conduct of the IEE, the study team observed the prevailing environmental problems in the proposed subproject areas.

1. Air Quality Level

91. Air quality in the proposed subproject areas is expected to be fair despite fugitive dust from vehicle movements (particularly over unpaved roads and other unpaved grounds), construction activities, and wind action on exposed surfaces. These conditions are normal even without major pollution conditions. Other air pollutants such as fumes from household cooking, smoke from open burning, and vehicle exhaust occur sporadically, both in terms of source and timing. Though there is a lack of secondary information on air quality in the project area, the ambient air quality is expected to be within the National Ambient Air Quality Standards of Nepal given the absence of large industries and significant traffic volume.

E. Acoustic Environment

92. As the proposed subprojects are in the villages of the municipalities, there are a few sources of noise pollution: from small industries, local construction activities, and vehicle movement. Anthropogenic noise is confined to a few clustered settlements and marketplaces, with limited impact. Noise levels in the project area are expected to be within permissible standards as prescribed by the Ministry of Forest and Environment.

F. Water Quality

93. The sources of drinking water in most of the subproject areas are tube wells and piped water from local government-owned water utilities. On Pokhariya, tube-well is the only source. The quality of tube well water is not satisfactory based on National Drinking Water Quality Standards; the amount of iron is beyond the permitted levels but this is being addressed by chlorination. The municipal water supplies in Gaushala, Simara and Bhediya APOs provide potable water that is properly treated by the municipality. The national rehabilitation center in Suryavinayak -7, treated drinking water is provided. Data on the quality of the supplied water could not be availed but it is expected to abide by the National Drinking Water Quality Standard, since the municipality distributes the water with proper treatment.

G. Solid Waste Management

94. Solid waste management is practiced (albeit inadequately) in all the municipalities where the subproject areas are situated. Solid waste is collected on an irregular basis and there are no proper landfill sites for safe disposal. Community-based organizations including toll Sudhar Samiti are conducting awareness and capacity building in solid waste management in community level. In case of Suryavinayak-7, there is no awareness regarding management of solid waste. All subproject areas have already undertaken environmental assessment and identified possible landfill sites near their areas. The private sector has also started to help in this effort by collecting the waste from their own operation and practicing material reuse and recycle, but a more systematic and sustainable approach in managing solid waste in

collaboration with the private sector needs to be put in place across all local governments.

H. Wastewater Management and Sanitation

95. There is no sewerage system in all the subproject areas. Wastewater from individual households is managed inside their respective premises. FGDs conducted during the field visit show that almost all households have their own toilet and septic tank, but there is no wastewater treatment plant being operated in the subproject localities. Sanitation in the areas remains poor due to the prevalence of semi-permanent toilets and surface runoff of wastewater due to leakage in Gaushala, Pokhariya and Bhediya APOs. Awareness-raising efforts need to continue as part of the total sanitation campaign, in coordination with stakeholders in public health and water, sanitation, and hygiene.

I. Heritage Sites and Physical Cultural Resources

96. All the local governments in the subproject areas are rich in cultural and physical resources, particularly temples (see Table 32). Since the majority of people in the subproject areas are either Brahmins or chhetri, there are many temples located within the areas. There are five to nine major temples in each subproject ward. Ranikot Gadi- a small regime Darbar located about 3 km far from the center location is a historically important place in the ward and Bisket Jatra at Gokulghat and Krishnajatra- Krishna temple is famous which is near Suryavinayak rehabilitation center. It is noted that the cultural heritage sites in the different municipalities will not be affected by subproject construction. There are no water ponds/lakes were recorded in the subproject wards.

Table 32: Heritage Sites and Physical Cultural Resources (all outside of construction area)

S.N.	Name of the PR	Location
1	Devi temple, Sanysithan, Sallesthan, Ram temple, Jitmahan	*Bauna, Bhediya, Bhediya, Hardiya, Jitiya-Gaushala-5*
2	Ramajamali, Ramghat, Durga temple, Jalpa devi	Bazar, Gaurighat, Gaurighat-2
3	Musari Mai (about 100 yrs old), Ram temple, shiva temple, Radhakrishana temple, Chhatimai temple	Jitpur Simara-1
4	Ram Janaki temple, shiva temple, Hanuman Temple, Durga temple, Ranigunj historical darbar	Pokhariya-4
5	Pathivara, Maccheshwor, Dolakha Vimsen, Gokughat, Lekhanarayan temples and Ranikot Gadi	Suryavinayak-7

Source: IEE field study, 2021.

J. Climate Change and Adaptation

93. **General concept.** Climate change is a global issue. Significant variations in global temperatures, precipitation, wind patterns, and other climatic indicators have been documented across several decades, and their adverse effects have been felt everywhere, including the subproject areas and their districts. Project design should thus account for events such as flooding and ensure that resources such as ground water are available for WCSCSC staff and residents. The project region is characterized by four seasons: winter, pre-monsoon,

monsoon, and post-monsoon. The project areas are in Nepal's high mountain regions as well as in the flat terai physiographic region.

97. **Temperature change.** The tendency for temperature change in the subproject area is significant, as in other parts of the valley. The average annual maximum temperature of the country Nepal has risen by 0.056 degree Celsius, according to a recent study conducted by the Department of Hydrology and Meteorology. However, data on changes in annual maximum temperature by specific subproject location is not available.[10] Reviewed reports show that all hill districts of Bagmati province, and the districts under Madhesh Pradesh province are highly sensitive to the effects of climate change, with Bagmati experiencing variable temperature changes. The study recorded the highest increase in annual temperature of 0.092 degree Celcius in Manang district located in the northern region while the lowest increase was recorded in Parsa (0.017 degree Celsius). However, these temperature changes will have no significant impact on the subprojects.

98. **Precipitation change**. Rainfall is part of hydrological cycle and is influenced by temperature variations in the project area. It is noted that all the districts of Madhesh Pradesh and Bagmati Province show an increasing precipitation trend. If climate change mitigation efforts are ignored, the precipitation trend appears to be changing regularly, which could have an impact on water security in the project area in the long run. High-intensity rains with short duration, fluctuating rainfall periods, and irregular rainfall patterns have been noted in the area. As such, the building design will consider the climate change risks related with extreme weather events including storm and lightning, possible landslides and flooding.

VI. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

99. During the development of the proposed subprojects, an environmental evaluation found that physical, ecological, and sociocultural can happen at any point during the subproject's life cycle, i.e., design, preconstruction, construction, and operation and maintenance. Depending on the severity, the scale of the affects can be modest, moderate, or large, and they can be transient or long term, reversible or permanent, local, or wide-area. The effects may not all be negative; they can also be positive. The goal of environmental management is to try to maximize beneficial effects while minimizing negative ones through long-term mitigation strategies.

A. Beneficial Impacts and Augmentation Measures

1. Construction Phase

100. **Employment generation and increase in income.** One major and direct benefit of the subproject is employment creation for the local community. For all subproject construction works, about 30% of person-days are allocated for skilled labor and 70% of person-days for unskilled labor. Locals in the subproject area shall be hired whenever possible, especially for daily wage-based, unskilled labor needs.

101. The enhancement measures for this impact include (i) recommending that the contractor employs local people, giving high priority to women and the underprivileged as much as possible, and (ii) ensuring equity in provision of wages to both male as well as female laborers.

[10] Chandan Kumar Mandal. 2017. *Average annual temp rose by 0.056 degree Celcius in the past 4 decades*. Kathmandu Post. ('Average annual temp rose by 0.056 degree Celcius in the past 4 decades' (kathmandupost.com))

102. **Skills enhancement.** The subprojects are likely to enhance the skills of locals in masonry, carpentry, electrical, and other construction tasks. Furthermore, the subproject will also create opportunities for on-the-job workers training. The skills and knowledge acquired during subproject construction will enhance employment opportunities of locals, who can earn livelihoods by doing project-based construction work in the future.

103. The enhancement measures for this impact include (i) making a proper work plan and code of conduct during the construction period and (ii) providing regular hands-on training to workers during project construction, to enhance their skills.

104. **Enterprise development and business promotion.** Birgung, Hetauda, Biratnagar are developed cities that have several enterprises whereas Kathmandu Valley is near the national rehabilitation center. Additional establishments will be needed during construction to meet workers' demands, e.g., eateries and convenience stores. In turn, this will foster agribusinesses who can supply more produce for these establishments. These subproject sites can then serve as new markets and eventually help improve the economic standing of the municipalities where they are situated.

105. The enhancement measures for this impact include (i) recommending to the contractor to give priority to local products and suppliers during procurement of construction materials, and (ii) giving preference to local services like grocery stores, tea shops, hotels, restaurants, etc. during the entire construction period.

2. Operation and Maintenance Phase

106. **Improvement in awareness of gender-based violence and other gender issues.** The facilities will enhance provision of survivor-centric services given the presence of specific features, e.g., care and short-term accommodation, proper sanitation facilities, accommodation for female police officers, and space for trainings. These facilities will support improved case tracking and monitoring of GBV cases. Similarly, establishment and operation of rehabilitation services will strengthen the resolve of GBV survivors and ensure their well-being and economic empowerment throuh the provision of livelihood and life skills training, and legal services. The centers will also serve as venues for awareness-raising activities on positive gender norms, GBV issues, legal remedies, and other relevant services to target stakeholders and allow meaningful engagement of both men and women.

107. Following are enhancement measures for this impact:

(i) Efforts will be made to meaningfully engage men and boys from diverse socioeconomic groups as advocates against GBV and for women's rights to create a safe community.
(ii) Focus support on issue-based campaigns against harmful and discriminatory social practices such as witchcraft allegations, sex-selective abortion, gender-biased division of labor, dowry offering, and others.
(iii) Strengthen coordination among the different stakeholders and service providers such as WCSCSC units, relevant ministries in provinces, municipalities, judicial committees etc.

108. **Market and commercial center development.** Construction and operation of the proposed WCSCSC and rehabilitation centers will further accelerate the rate of economic activities at the different subproject locations (Bhediya-Surunga, Gaushala, Simara and Pokhariya including Suryavinayk). The WCSCSC and rehabilitation center will provide a home for disabled, destitute, and socially abandoned persons. The project area is progressing, with the creation of various industries, small and large hotels, financial institutions, banks,

cooperatives, government offices, and educational institutions. The subproject hopes to realize more investment, improve rural–urban linkages, promote human development, and establish new economic avenues.

109. The enhancement measures for this impact include (i) ensuring regular maintenance of the centers to sustain service delivery, (ii) promoting local agricultural products and skills to support subproject operation, and (iii) encouraging urban development that values women's rights and rejects GBV.

110. **Appreciation of land value**. A common benefit that is also being expected from subproject operation is increase in the price of land due to the availability of reliable services. To encourage further land development in the area, residents should be made aware that high land values are acceptable to banks and microfinance organizations as collateral when applying for loans to establish their enterprises.

111. **Women empowerment and opportunity**. The subproject will largely benefit women victims of GBV, as the target beneficiaries of the WCSCSC and rehabilitation center. The centers' services are oriented toward empowering such women in order that they may have better career and economic opportunities in the near future.

112. The enhancement measures for this impact include organizing regular awareness raising and sensitization acivities on GBV and gender norms among the locals and other stakeholders.

113. **Use of solar panels**. As a renewable source of power, solar energy has an important role in reducing greenhouse gas emissions and mitigating climate change. Solar energy can also improve air quality and reduce water use for energy production. The use of solar panels can feature the rehabilitation centers as good practice exemplars in clean energy and energy efficiency. Each kilowatt hour (kWh) that a solar PV system produces is a reduction in the carbon emission of a single kWh of electricity produced by electric power utility. The capacity of the solar power system to be installed will be similar to that of a residential solar system which is approximately 9 kW. A 9 kW solar power system would produce about 10,000 kWh in a year. Every 1 kWh of electricity produced account for 0.846 lbs of carbon. With such assumption, it is expected that a 9kW solar power system will contribute to 8,460lbs of carbon dioxide emission reduction.[11] The total carbon dioxide emission reduction will be recomputed based on the final design capacity of the solar power system.

114. The enhancement measures for this impact include (i) using solar power in the buildings for electrication, cooking, and heating; and (ii) encouraging solar energy use for reducing greenhouse gas emissions and promoting clean energy.

B. Adverse Impacts and Mitigation Measures

1. Pre-construction Phase

115. This phase covers field survey and investigation, design (i.e., detailed drawings) development, cost estimation, discussions with the community user group and, if necessary, design revisions.

116. All the APOs (Bhediya, Gaushala, Simara and Pokhariya) have already allocated land within their respective compounds for WCSCSC construction. Similarly, the MOWCSC has also provided land for the Suryavinayak Rehabilitation Center, and no further land acquisition is required for the proposed subprojects (the detailed land documents are presented in Annex

[11] Boston Solar. 2020. *How Much CO_2 Do Solar Panels Save?*. Massachusetts

10). As the project moves into design and cost review, concerned stakeholders wil be convened for their insights and concerns which shall be duly addressed before construction begins.

117. The REA checklists for respective subprojects were used to identify potential impacts, issues, and concerns as per preliminary design (see Annex 1). The REA helped recognize the issues and concerns that should be considered during design, impacts that should be mitigated during construction, and other effects that should be mitigated or enhanced during operation.

118. Table 33 cites the REA-identified impacts, issues, and concerns that should be considered during design review. To add, the following should also be considered in the list: (i) existing users of the area; (ii) social impacts of the project on the nearby community and service providers and their opinions; and (iii) sustainable sources of construction aggregate materials.

Table 33: REA-identified Impacts/Issues/Concerns and Mitigation Measures Taken during Project Preparation and IEE

REA Identified Impacts/Issues/Concerns	Measures Taken During FS/DED and IEE to Mitigate Impacts/Issues/Concerns
Impacts associated with sanitation and solid waste disposal systems	Construction waste will be duly managed. Solid waste during operation will be managed through the municipal waste management system, since all subprojects are inside municipality service area. Segregation and resource recovery will be followed by reusing or recycling the waste. Design should consider the issues properly.
Increased noise and air pollution resulting from increased traffic volume and construction equipment	Design shall consider the anticipated air and noise pollution. Although, minimal dust and noise during movement of construction vehicle could occur, measures such as; water sprinkling inside the APO and construction are, use of light and low sound equipment, use of ear bob by expresser labors, regular monitoring of the pollution changes.
Occupational and community health and safety risks	Design and condition of contract shall consider construction-related occupational health and safety risks as it will exist. As the most of the subproject locations are within existing APO premises and separate labor camps will be established by the contractors minimizing worker- community contacts, minimal impact on community health and safety is expected from the project implementation.
Generation of dust in sensitive areas during construction	Design and condition of contract shall consider proper management of demolition of old building/shed, construction activities and vehicular movement may cause localized dust generation although of minimal scale. A spoil management plan needs to be prepared identifying sites for proper spoil disposal, including landscaping And re-vegetation.
Community safety risks due to both accidental and natural hazards	All the construction areas are within the premises of APO except for the rehabilitation centers and will be properly fenced and secured to avoid direct access by the public. Stand and shed back or additional distancing with the community will be placed.
Contamination of drinking water source and other environmental receptors from the construction and operation	The design of discharge of drainage and design of toilets including septic tanks will be as per national standards and codes to allow for maximum retention of seepage. Regular monitoring of water quality test and other resources will be held.

2. Construction Phase

(i) Physical Environment

119. **Erosion and land surface disturbance**. The excavation works during project construction may lead to erosion, caving, silt runoff, and unsettling of street surfaces. Topsoil may be lost. The topography of the proposed national rehabilitation center location is sloppy, thus, there could be a high possibility slope failure and surface erosion. Haphazard disposal of the excavated earth can also disturb local land surfaces. Dismantling works and demolition of existing structures at the construction site will also pose hazards and discomfort to the locals.

120. All the WCSCSCs and rehabilitation center will be constructed on public land. The WCSCSCs will be located within the compounds of APOs. The APOs and the rehabilitation center have agreed to provide the land as specificed in the subproject's technical requirements, and no further land acquisition needs to be done under the subprojects.

121. The mitigation measures for this impact include (i) taking precautionary measures for the proper backfilling of excavated trenches and stacking of excavated soil; (ii) avoiding construction works during the rainy season, as much as possible; (iii) conserving topsoil and using compaction during resurfacing works; and (iv) dismantling existing structures safely and in coordination with project stakeholders.

122. **Damage to the existing facilities**. All WCSCSC-related construction will be done inside the compound of the respective APOs. This requires the relocation of existing temporary structures (e.g., the temporary garage in Gaushala APO, old abandoned house at Bhediya, badminton court at Pokhariya and old abandoned APO building at Simara) prior to construction. APOs agreed to relocate the structures at a nearby location within the office premises without the need to acquire land. No community utilities are xpected to be affected from the construction of WCSCSCs and rehabilitation center.

123. The mitigation measures for this impact include (i) relocation of temporary structure within APO property before project construction; and (ii) safely disposing of waste material from demolition works. Based on preliminary information, the structures to be demolished do not contain ACMs. In case of any potential ACMs during implementation, appropriate mitigation measures following international guidelines and Good Practice Guidance for the Management and Control of Asbestos will be followed.

124. **Air and noise pollution.** The subproject's major activities include construction of buildings and other facilities (e.g., water supply, guard houses), and transport and installation of materials and equipment. Most of the works do not involve heavy machines, except in excavating the building foundation, which will produce noise for certain periods. Other activities such as transportation, loading and unloading of construction materials (e.g., sand and aggregates), stockpiling of construction waste, and earthworks, will generate dust and vehicle emissions, thus causing air and noise pollution that may inconvenience the immediate community.

125. The mitigation measures for this impact include the following:

(i) Use vehicles and equipment with low emissions to address the air pollution concerns related to the project.
(ii) Regularly carry out water sprinkling in places where dust pollution is caused due to plying of vehicles during construction.
(iii) Cover the vehicles carrying construction materials and minimize the drop height of hauling vehicles.

(iv) Prohibit the burning of waste at worker campsites and construction sites.
(v) Use soft horns on construction vehicles to reduce noise at the project site.
(vi) Restrict construction activities near core settlements and/or healthcare facilities after 7 pm and before 6 am.
(vii) Discuss construction schedules with locals to minimize any disturbance to major community functions or activities.

126. **Impact on bodies of water**. The subproject areas have several downstream water sources such as rivers and ponds, as presented in Table 14. Surface runoff and drainage discharge during construction may impact surface water bodies near the subproject areas. Possible runoff and discharge-relate activities, which may affect water quality in thw vicinity, are listed below:

(i) washing of vehicles and clothes directly on the water's surface water,
(ii) sediment and excavated materials may be transported to bodies of water due to rain; and
(iii) leakage and disposal of oil and grease from construction equipment.

127. Excavation works will cause some turbidity in water bodies, but the impact is seen as short term.

128. The mitigation measures for this impact include (i) avoiding disposal of spoiland waste into bodies of water, and restricting washing in local surface bodies of water; (ii) mandating disposal of oil and grease from construction equipment in designated areas and regularly monitoring rivers and streams for water quality.

129. **Waste management and disposal**. Generation of spoil from foundation works, debris from dismantled structures, and solid waste from workers' campsites will cause problems if not managed well. For example, if the subproject jobsite expects around 30 workers on average each day, the waste generation from campsites could be 8 kilograms/day. If not segregated and properly disposed, this waste will pile up and and lead to pollution and illness.

130. The mitigation measures for this impact include (i) properly managing waste collection and disposal during the construction period (e.g., collecting excess grease and lubricants in containers and selling these to recyclers, depositing contruction waste near labor camps for later clearing); (ii) providing proper toilets for workers; and (iii) disposing spoil and waste from dismantled structures at designated sites.

C. Climate Change Impacts and Mitigation Measures

131. **Impacts on floods and inundation.** In general, rainfall that is high intensity and short duration triggers excessive surface runoff and possibly leads to failure of anthropogenic dams and flooding in the subproject areas (Bhediya, Gaushala and Pokhariya). Road embankments constructed without proper cross drainages and borrow pits in the subproject areas can also contribute to excess flooding and inundation. All APOs are basically low-lying areas and may experience water logging even during minor floods. Assessment and consultation with locals in the location of national rehabilitation center note that there isa possibility of increasing discharge near the natural drainage and may cause slope failure and soil erosion in the northeastern part of the site.

132. The mitigation measures for this impact include (i) providing proper drainage outlets for surface run off, (ii) maintaining a 3 feet height above inundation level for civil structures, and (iii) constructing gabion protection and sedimentation filter or proper drainage to prevent downstream contamination.

133. **Climate change vulnerability and risks reduction.** Considering climate change consequences, the subproject is designed with due attention to resilience against the adverse effects of climate change, including extreme climate variability. Erratic rainfall patterns may cause unusual flooding and droughts, resulting in depletion of upper groundwater aquifers, a potential project risk which can be treated as climate-induced.

134. The mitigation measures for this impact include (i) recharging shallow aquifers in identified areas, and (ii) ensuring provisions for proper drainage and surface water runoff (to avoid water logging that may also lead to mosquito breeding and an increase in vector-borne diseases).

135. **Overall climate change adaptation and mitigation measures.** Awareness-raising activities on the magnitude of global warming and its related effects will be conducted in subproject area communities. In the project area the process of adjustment to expected climate and its effects shall be introduced in the design.

136. The mitigation measures for this impact include the following:

(i) Continue community awareness to implement appropriate waste management practices (based on 3R [reduce, reuse, recycle] principles).
(ii) Encourage water conservation practices, e.g., advise subproject beneficiaries to use low flow showerheads when bathing and less water consuming flushing toilets.
(iii) Advocate tree planting in the subproject areas and adjacent community forests.
(iv) Promote use of ground water from deep aquifers.
(v) Maintain height of civil structures above inundation level.

137. The subprojects shall abide by a systematic implementation action plan to ensure compliance with mitigation measures (Table 34).

Table 34: Implementation Action Plan

SN	Activity	Responsibility	Time Frame
1	Conduct community awareness program to implement appropriate waste management practices (reduce, reuse, recycle) particularly to beneficiary	Supervision consultant , APO/DPO, Ward Committees and Users	Design, Construction and Operation Phases
2	Provide awareness to project beneficiaries for use of less water consuming flushing toilets	Supervision consultant , APO/DPO, Ward Committees and Users	Design, Construction and Operation Phases
3	Ensure finished level of civil structures above inundation level	Supervision consultant , APO/DPO, Ward Committees and Users	Design and Construction Phase
4	Design charge area inside the APOs and Rehabilitation centers and promote to ensure in community as well	Supervision consultant , APO/DPO, Ward Committees and Users	Design and Construction Phase
5	Greenery promotion activities encouraging to municipality to enforce trough law making	Supervision consultant , APO/DPO, Ward Committees and Users	Design and Construction Phase

(ii) Biological environment

138. The subproject area comprises a mix of built-up areas, scattered plain settlements, and some forest patches. Thus, there is risk of degradation of the local vegetation by the indirect encroachment of the workforce in Bhediya and Simara APOs and in the national rehabilitation center, Suryavinayak. There are no forested areas in the subproject wards of Pokhariya and Gaushala APO. The subproject will not have any impacts on human

settlements, farmlands, and public facilities; however, there is a need to relocate a temporary car garage at Gaushala APO and badminton court in Pokhairya prior to any subproject work. No potential environmental impacts on local flora and fauna have been noted during subproject construction and post construction.

139. **Impacts on flora.** The sites were selected to avoid any tree cutting activities due to project construction work. In Gaushala APO, 2 siris *(Albizia lebbeck)* trees will need to be cleared and branches of *sisoo and pipal* trees will need tobe trimmed. Similarly, branches of kabhro tree in Simara and mango tree in Bhediya APO need to be trimmed before construction work. The construction of national rehabilitation center may cause loss of trees if precautionary measures are not complied with during construction as there are number of trees present in the construction area. Tree cutting at the subproject sites shall be offset by compensatory tree planting at a ratio of 1:10, as approved by the District Forest Office. Tree species of local economic significance and values will be planted.

140. The project does not directly affect environmentally protected areas, core zones of biosphere reserves, or highly valued cultural property. Since the subproject areas are small in scale and the indirect impact zone of each subproject area is only 200 m, environmental impacts on surrounding vegetation and natural ecosystem are not significant. However, greenery promotion will be carried out around the APO and rehabilitation center areas.

141. **Impact on fauna**. The entire subproject site is within built-up areas of APOs, except the Suryavinayak rehabilitation center. Suryavinayak rehabilitation center will be constructed in Subbapakha settlement with no more than 100 m distance from the national zoological garden. Special attention may be needed to prevent the impacts on the preserved fauna in the zoo and surrounding forest area of national rehabilitation center. Awareness programs will be conducted in workers' campsites and project communities regarding local wildlife conservation. A code of conduct will be put in place for all project staff on the avoidance of activities that may disturb any migratory or local faunal species.

142. The mitigation measures for this impact include (i) re-vegetating disturbed slopes and grounds, where applicable; (ii) raising awareness on local flora and fauna conservation among workers subproject communities; (iii) adopting suitable mitigation measures to minimize noise pollution; (iv) prohibiting the hunting of birds and the collection of fodder by subproject workers; (v) restricting activities near streams; (vi) Construction activities shall carried out with regular consultation and information dissemination to the personnel of national zoo center; (vii) prohibition of fodder collection in any nearby forest area, and (vii) regularly monitoring subproject impacts.

143. **Impact on aquatic life.** Downstream bodies of water are the major surface water sources that risk being polluted due to subproject activities. Construction may affect water quality but only briefly, and impact on aquatic life may be minimal, short term, and local in scale.

144. The mitigation measures for this impact include (i) prohbiting waste disposal in bodies of water, (ii) providing temporary toilets, and (iii) restricting workers from fishing in local rivers and streams. prohibiting waste disposal in bodies of water.

(iii) Socioeconomic environment

145. **Disturbance of community activities.** Existing community facilities and structures will not be affected during subproject construction. The WCSCSCs in Gaushala, Bhediya, Simara and Pokhariya will be built within the respective APO compounds. There are no community utilities affected in the rehabilitation center. There may be minimal impacts to pedestrians and APO visitors due to the free movement of vehicular traffic in the subproject area. Noise from construction machinery may disturb the local neighborhoods.

146. The mitigation measures for this impact include (i) advising the contractor to develop a detailed traffic management plan early in the construction phase to minimize traffic along construction sites, (ii) relocating electric poles prior to construction, (iii) providing advance notice to the public on construction schedules, road closures, and traffic rerouting in affected areas, and (iv) putting up construction signages in Nepali and in English.

147. **Social dispute and dissatisfaction.** The influx of workers from outside the subproject municipalities—who are equally attracted to possible employment opportunities—can cause social problems such as job displacement among locals, dissatisfaction, conflicts, and increased incidents of public disturbance from irresponsible workers' behavior (e.g., gambling, drinking).

148. The mitigation measures for this impact include (i) conducting public consultation at various stages and locations as per requirement; and (ii) implementing a grievance redress mechanism (GRM) on site.

149. **Occupational health and safety.** Subproject operation should always consider the life and health of workers, particularly those involved in hazardous activities such as shuttering, concreting, masonry, and formwork.

150. To mitigate or minimize these hazards, adequate safety instructions should be provided by the contractor and monitored by the subproject.

(i) Health and hygiene in the campsite (against unsafe working conditions, accidents, transmission of communicable diseases etc.) will be given top priority.
(ii) Contractor shall prepare an occupational health and safety (OHS) management plan which details the procedures to be adopted to ensure the OHS requirements are met. It shall include safety requirements for all works, with particular attention given to working in around machinery, handling hazardous materials, and exposure to the elements.
(iii) Regular health checkups will be provided and proper sanitation and hygiene will be observed. Awareness programs concerning human trafficking and the possibility of spreading sexually transmitted diseases and HIV/AIDS will be conducted during FGDs.
(iv) The contractor shall ensure that all persons, including laborers on site have the necessary personal protective equipment of an appropriate standard that include but not limited to safety footwear with steel toe, sole, and heel; high visibility clothing, impact-resistant safety eyewear, long sleeves and long pants suitable for the operating environment, safety helmet with provision for sun protection as necessary, gloves (carried and worn during manual handling) and hearing protection when working in close proximity to noisy equipment and in all underground environments.
(v) Training on labor standards and occupational health and safety (OHS) will be provided to laborers including representatives of contractors and concerned wards, APO members, and the project team.
(vi) Workers' orientation on safety procedures and requirements will be conducted from time to time.
(vii) Compensation for loss of life or any type of injury will be given and workers' insurance will be provided. First aid kits, a standby

vehicle, and fire extinguishers will be made available in campsites.

(viii) In collaboration with local health authorities, the contractor shall ensure that first aid facilities are available at the site at all times, including having a site vehicle available at all times that can be used to transport anyone injured at the site to medical facilities. The contractor shall post in clearly accessible places information on how to transport injured persons to medical facilities, including the precise location and contact details of such medical facilities, and name and contract details of the site designated OHS officer.

(ix) Ensure that safety equipment are cited in the bill of quantities, and detailed safeguard clauses are included in contracts.

(x) To avoid risks from accidents on site due to the movement of the public and workers, unauthorized persons will be prohibited entry at construction sites, hazardous areas will be barricaded and well covered, and warning signs will be conspicuously placed.

(xi) Contractor will appoint a safeguard and safety officer with subject matter expertise. These staff shall be responsible for ensuring full compliance with EMP, OHS, and standard operating procedures (SOPs) for coronavirus disease (COVID-19) prevention at the site and among workers.

(xii) The contractor will be supervised and monitored on development of SOPs and a response plan to minimize the risk of COVID-19 infections.

151. **Community health and safety.** Since the entire construction works will take place near community settlements, accidents and threats to health and safety may happen. Under the context of the COVID-19 pandemic, the contractor will be required to prepare SOPs as a response to any viral infections, and the workforce will be required to follow the SOPs.

152. The mitigation measures for this impact include the following:

(i) Coordinate with school administration, the local health center, and community authorities regarding project-related health and safety SOPs.

(ii) Fix the material transportation schedule to consider school operation, e.g., transport materials before 8 a.m. or after 5 p.m. if school hours are from 10am to 4pm.

(iii) Provide temporary access to construction sites, e.g., through provision of planks

(iv) Enforce hard barricading and using nontransparent covers at and around the construction area.

153. **Resettlement, relocation, and compensation issues.** Some temporary structures like car garage at Gaushala APO is to be relocated within the fenced premises. All the structures will be built either on public land or land already belonging to APOs, and construction will be done within the compounds of the respective APOs. The MOWCSC has already received land in the name of the central center for Mangla Shahana rehabilitation center. Hence, no resettlement or relocation is required for this project.

tion of solid waste and wastewater from construction sites and workers' camp. During the construction phase, generation of solid waste and wastewater from the construction sites and workers' camp are likely to affect public health. Also, soil runoff from the construction site as well

as improper disposal of construction debris may lead to off-site contamination (particularly during rainy season).

154. These impacts are direct in nature, local in extent, low in magnitude, and long term in duration.

155. The mitigation measures for these impacts include the following:

(i) Construction waste
   a. Adopt 3R (reduce, reuse, and recycyle).
   b. Ensure storage areas are secure, safe, and weatherproof.
   c. Manage reusable wastes, e.g., sell recyclables to scrap dealers, provide a final disposal site for biodegradable solid waste.
   d. Construct garland drains to reduce runoff from the stockpiles.

(ii) Solid waste, wastewater, and sewage from labor camps:
   a. Adopt solid waste segregation (based on the 3R concept).
   b. Manage biodegradable waste, e.g., food waste, paper waste, and biodegradable plastic. Either practice composting on site or make wasre collection arrangements with the local government.
   c. Manage nonbiodegradable waste like glass, plastics, and metals by reusing them or selling them to scrap dealers.
   d. Strictly prohibit open incineration of solid waste and minimize the use of plastic materials to avoid generating plastic waste.
   e. Construct temporary latrines with soak pits and septic tanks for proper disposal of sewage.
   f. Provide a proper but temporary drainage system for wastewater generated by the workers' camps.
   g. Employ local people from nearby villages as much as possible, to minimize the number of workers residing at workers' camp and consequently reduce the solid waste and effluent generated.
   h. Coordinate with municipal waste collection system for daily waste collection for proper disposal. If municipal waste collection is not possible, coordinate with the private sector for proper disposal of solid waste.

156. **Managing the contractor's and workers' camps.** Space for the establishment of workers' and contractor's camps will be acquired temporarily for the completion of construction work, and the ideal is to locate these camps near the project area. The contractor will be required to meet the following site criteria:

(i) No instability that results in destruction of property and threats to life.
(ii) Setting-up worker camps in residential areas will not be considered so as to protect the human environment (i.e., to curb accident risks, health risks due to air and water pollution and dust, and noise, and to prevent social conflicts, shortages of amenities, and crime).
(iii) Disposal will not be allowed near sensitive areas or areas which will inconvenience the community.
(iv) The workers' camp and hazardous materials storage (e.g., fuel and lubricants) should not be located at the riverbank. The workers' campsites, including amenities for workers, should be finalized in consultation with project.
(v) The contractor should ensure that amenities are in place at the workers' camps (e.g., toilets, waste bins, potable drinking water, cooking fuel, etc.) and that gambling, liquor, and illicit relationships are banned.
(vi) After construction, the contractor will be required to cleanup the site and bring

it back to its original, pre-project condition

157. The mitigation measures for these impacts include the following:

(i) Camp for contractor's staff and workers

a. The contractor shall provide adequate temporary accommodation with all necessary amenities and facilities for project staff and laborers. The type of accommodation (i.e., prefabricated, on-site buildings or rentals is the contractor's choice.
b. Employer will add labor camp amenities in bill of quantities and conduct standards in workers' contracts.
c. Use of CGI sheet for camp construction shall be restricted. Rental of existing building, or use of prefabricted modular structures that have separate living, cooking and dinning areas, proper doors and windows, electricity, fans, and raised beds with proper mattresses shall be used for establishing camps. Toilets and bathing areas shall be gender friendly, and drinkable clean water shall be supplied.
d. The camp area shall be always kept clean, solid waste disposed, and wastewater stored in sump pits that are cleaned from time to time.
e. From set up through operation to final removal upon completion of construction works, the contractor shall be fully responsible for constantly carrying out all measures necessary for safeguarding the natural environment affected by his or her camps.
f. The contractor shall cause the least possible interference with existing amenities, whether artificial or natural. No trees shall be felled except as authorized by the project engineer.
g. Latrine and ablution facilities and first aid kits shall be provided in sufficient type and numbers to the satisfaction of the engineer and shall be maintained in a clean and sanitary condition at all times.
h. On completion of the works or as soon as the facilities provided by the contractor are no longer required, the contractor shall remove such facilities and clear away all surface indications of their presence. Each camp area shall be reinstated to the satisfaction of the engineer.

(ii) Contractors' offices, stores, and services

a. The contractor shall provide, erect, construct, maintain, and subsequently remove proper offices, stores, workshops, laboratories, storage, and parking areas for his or her own use. Such facilities shall be sufficiently sized and equipped to enable him or her to manage operations and those of his or her subcontractors in a professional manner and to enable him or her to carry out all his or her obligations under the contract.
b. Sheds for storage of materials that may deteriorate or corrode if exposed to the weather shall be weatherproof, adequately ventilated, and provided with raised floors. No material or equipment shall be placed directly on the ground.
c. Within the contractor's offices, a meeting room shall be available for site meetings with the engineer and the employer.
d. These contractor's facilities shall be subject to the same stipulations regarding sitting, interference with amenities, and environmental protection as the contractor's camp.

3. Operation and Maintenance Phase

158. **Impact on water bodies and aquatic life.** Generation of solid waste and wastewater from center operation, particularly through its kitchen and sanitation services, is likely to create contamination of downstream water sources. Surface runoff from the WCSCSC and rehabilitation center may lead to off-site contamination (especilly during rainy season). Similarly, improper disposal of solid waste and debris may lead to off-site contamination of downstream water bodies.

159. The mitigation measures for these impact include (i) adopting solid waste segregation using 3R principles, e.g., biodegradable waste can be turned into garden compost, while nonbiodegradable can be sold to scrap dealers; (ii) strictly prohibiting open incineration of solid wastes and use of plastic materials; (iii) properly disposing of septic tank waste aand effluent from sanitation; and (iv) constructing proper and efficient drainage system to manage surface runoff.

160. **Impacts of diesel generator use.** The rehabilitation centers may consider generators as backup sources in case of power interruption. Diesel generators will be noisy and emit pollutants, to the inconvenience of nearby residents. However, this impact has been predicted to be of low significance.

161. The mitigation measures for this impact include (i) considering renewable energy sources (e.g., solar) for alternative backup power, (ii) procuring low-noise generators with lower emissions, and (iii) enclosing the generators to dampen noise levels.

162. **Impacts of use of solar panels.** The project plans to install solar photovoltaic cells and energy-efficient lights in the buildings. Once operational, the solar system will provide the centers with clean electricity and contribute to mitigating climate change. However, issues like disposing of batteries (where the energy generated will be stored) and bulbs, and system operation and maintenance must be considered. Operation and maintenance of the the solar power system will involve filling of distilled water in the batteries and regular inspection of panels to check for any damages. Given that the centers will be moderately sized, the planned solar system will be relatively manageable. Any negative impacts would thus be of low significance.

163. The mitigation measures for this impact include (i) using long life, environment-friendly battery storage; (ii) ensuring that used batteries are safely stored and sent for recycling; (iii) using LED bulbs instead of CFL lighting; (iv) designating a temporary storage area for damaged panels, batteries, and bulbs; and (v) establishing specific arrangements with recognized reuse and recycling agencies for the safe dismantling and disposal of used or damaged panels, batteries, and bulbs.

164. **Occupational health and safety.** Staff, service providers, and beneficiaries of the rehabilitation centers are exposed to health and safety hazards in the workplace, whether they are aware of it or not.

165. The mitigation measures for these impacts include the following:

(i) Provide responsible staff with proper personal protective equipment during building maintenance and cleaning.
(ii) Provide adequate welfare supplies and facilities including clean water, soap, nailbrushes, and disposable paper towels.
(iii) Supply first aid kits (including sterile wipes and adhesive dressings for wounds) where appropriate.
(iv) Mandate SOPs for COVID-19 prevention, and continuously remind staff and center beneficiaries to abide by these SOPs.

166. **Community health and safety**. This refers to protecting local communities from possible hazards caused or aggravated by rehabilitation center operations. These include unauthorized entry to premises, accidental collapse of structural elements (e.g., ceilings, beams), and even the spread of communicable diseases from the center's workforce to the community.

167. The mitigation measures for this impact include raising awareness at the community level of possible health and safety risks during operation of the centers and providing adequate safety precautions in building design.

168. **Disaster management.** Natural and artificial disasters such as fire, earthquake, and floods pose a serious risk to the center's workers, residents, and beneficiaries. The magnitude, extent and duration of the impacts are rated low, site-specific, and long term. However, the impact of such disasters is highly significant since it involves potential loss of life and property.

169. Mitigation measures for this impact include (i) ensuring seismic resilience during building design, following government's National Building Code standards; (ii) making emergency facilities available and accessible (e.g., fire exits, alarms, extinguishers); (iii) training facility managers and staff on emergency response procedures; (iv) conducting regular safety drills (e.g, fire, earthquake); (v) posting details of staff to be contacted during emergencies; and (vi) keeping first aid kits stocked and ready.

D. Evaluation of the Impacts

170. Table 35 shows the impact evaluation ratings during the subprojects' construction and operation stages. Aspects with a combined score of less than 45 points are considered as having insignificant impact; score ranges from 45 to 75 points are termed as having significant impact, while scores above 75 points are deemed as having very significant impact.

Table 35: Evaluation of the Environmental Impacts

Impacts	Nature	Magnitude	Extent	Duration	Total score and significance
Beneficial Impacts					
Construction stage					
Employment Opportunity and Increase of Income	Direct	M (20)	Lc (10)	St (5)	insignificant (35)
Skill Enhancement	Direct	M (20)	Lc (10)	Mt (10)	insignificant (40)
Enterprise Development and Business Promotion	Direct	M (20)	Lc (10)	Mt (10)	insignificant (40)
Awareness on GBV and gender issues	Direct	M (20)	Lc (20)	Mt (10)	Significant (50)
Operation Stage					
Improved GBV understanding and gender sensitization	Direct	M (20)	Lc (20)	Lt (20)	Significant (60)
Development of Market/commercial Center	Indirect	M (20)	Lc (10)	Lt (10)	Significant (45)
Appreciation of land value	Indirect	M (20)	Lc (10)	Lt (10)	Significant (45)
Women Empowerment	Direct	M (20)	Lc (20)	Lt (20)	Significant (60)
Quality of Life Values	Indirect	M (20)	Lc (10)	Lt (20)	Significant (50)
Use of Solar Panel	Indirect	M (10)	Lc (10)	Lt (10)	Insignificant (15)
Adverse Impacts					
Construction stage					
Physical Environment					
Erosion and land surface disturbance	Direct	M (10)	Ss (10)	Lt (10)	Insignificant (30)
Damage to existing facilities	Direct	L (10)	Ss (10)	St (5)	Insignificant (25)
Air Pollution and Noise nuisance	Direct	L (10)	Lc (20)	St (5)	Insignificant (35)
Impacts of water bodies	Direct	L (10)	Lc (10)	Mt (10)	Insignificant (30)
Waste management and disposal	Direct	M (10)	Lc (10)	Mt (10)	Inignificant (30)

Impacts	Nature	Magnitude	Extent	Duration	Total score and significance
Biological Environment					
Impacts on fauna	Direct	L (10)	Lc (10)	Mt (10)	Insignificant (30)
Impacts on flora	Direct	L (20)	Lc (10)	Mt (10)	Insignificant (40)
Impacts on aquatic lives	Direct	L (10)	Lc (10)	Mt (10)	Insignificant (30)
Socio-economic Environment					
Disturbance to community activities	Direct	M (20)	Ss (10)	St (5)	Insignificant (35)
Social dispute and dissatisfaction	Indirect	M (10)	Ss (10)	St (5)	Insignificant (25)
Occupational health and safety	Direct	H (60)	Ss (10)	Mt (10)	Significant (80)
Community health and safety	Direct	H (30)	Ss (10)	Mt (10)	Significant (50)
Resettlement, relocation and compensation issues	Direct	L (5)	Lc (10)	St (5)	Insignificant (15)
Operation & Maintenance Stage					
Risk of exposure to risk/covid	Direct	M (30)	Lc (20)	Lt (20)	Significant (70)
Impact on water bodies and aquatic life	Direct	L (10)	Lc (10)	Mt (10)	Insignificant (30)
Impacts of use diesel generators	Direct	L (10)	Lc (20)	St (5)	Insignificant (35)
Occupation health and safety	Direct	H (40)	Ss (10)	Mt (10)	Significant (60)
Community health and safety	Direct	M (30)	Ss (10)	Mt (10)	Significant (50)

Source: National Environmental Impact Asessment Guidelines Nepal, 1993.

VII. ANALYSIS OF ALTERNATIVES

A. With and Without Subproject Alternatives

171. The locales for the proposed rehabilitation center at Suryavinayak-7, Bhaktapur of Bagmati and the WCSCSCs in Surunga-2, Saptari, Gaushala-5, Mahottari, Jitpursimara-1, Bara and Pokhariya-4, Parsa in Madhesh Pradesh province were decided based on established selection criteria that reflected the scale and impacts of GBV in the area, e.g., cases filed in the respective APOs, number of victims. The subproject areas were also identified based on the recommendation of the provincial ministry. The study team conducted a field assessment to develop a profile of the subproject areas and validate the rationale for site selection. According to information provided by respective APOs, GBV cases are increasing every year in the subproject areas.

172. It is envisioned that these rehabilitation centers will address site-based cases of GBV, and having standardized facilities and services, e.g., livelihood and life skills training, legal assistance, will ensure the well-being and economic empowerment of GBV survivors. It is noted that the survivor-centric services with features to ensure survivors' privacy, short-term accommodation, proper sanitation facilities, accommodation for female police officers, and space for trainings will highly enhance the prevailing services and also provide logistics support for improved case tracking and monitoring of GBV cases in the areas. The effort will contribute to fulfilling the national commitment to SDG 5 (Gender Equality and Social Inclusion) and SDG 10 (Reduced inequalities), and the following discussion on "with subproject" alternative hopes to contribute to realiing this effort.

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B. With Subproject's Location Alternatives

173. The respective APOs are crucial in providing protection and social services, and it is clear that they need more resources to effectively respond to GBV cases in their administrative areas (e.g., the proposed WCSCSCs in Bhediya, Gaushala, Simara, and Pkhariya APOs of Madhesh Pradesh cover nearly half of the province area, while the rehabilitation center will provide services to all long-term cases referred by APOs). A strategic investment in these rehabilitation centers and their services will not only reduce GBV cases in the area but also help empower women and enable them to fully participate in building communities and the nation. The subprojects will also support a holistic approach to mainstreaming GBV and gender issues.

174. Moreover, the subproject sites were selected based on a comprehensive technical assessment and the absence of social and legal impediments. Minimal environmental impacts were also considered in subproject site selection.

C. Alternatives Related to Technology, Materials, and Implementation Procedure

175. Sustainable methods and materials will be considered as much as possible during subproject design and construction. Since the proposed sites are in the APO respective compounds, construction activities should proceed with little disruption in APO operations. Renewable energy, i.e., solar will also be used to provide supplementary power to the rehabilitation centers.

176. The work involved will be labor intensive and the use of mechanical equipment will be minimal, to reduce construction-related environmental impacts. Trained workers will be employed in this regard.

177. Where possible, the implementing agencies will try to involve the beneficiaries in the subproject phases. Construction materials will be sourced locally along with the workforce to ensure that the communities participate in project-related economic and employment benefits.

VIII. ENVIRONMENTAL MANAGEMENT PLAN

178. The purpose of the environmental management plan (EMP) is to ensure that the activities are undertaken in a manner that is non-detrimental to the environment. The EMP's objectives are to (i) providing a proactive, feasible, and practical working tool to enable the measurement and monitoring of environmental performance on-site; (ii) guide and control the implementation of findings and recommendations of the environmental assessment conducted for the subprojects; (iii) detail specific actions deemed necessary in mitigating the subprojects' environmental impacts, and (iv) ensure compliance with safety recommendations.

179. A copy of the EMP will be always kept on work sites. The EMP will be included in the bid documents and will be continuously reviewed and updated during implementation. The plan will be made binding on all contractors operating on the site and will be included in contractual clauses. Noncompliance with, or any deviation from, the conditions set out in this document will constitute a failure in compliance.

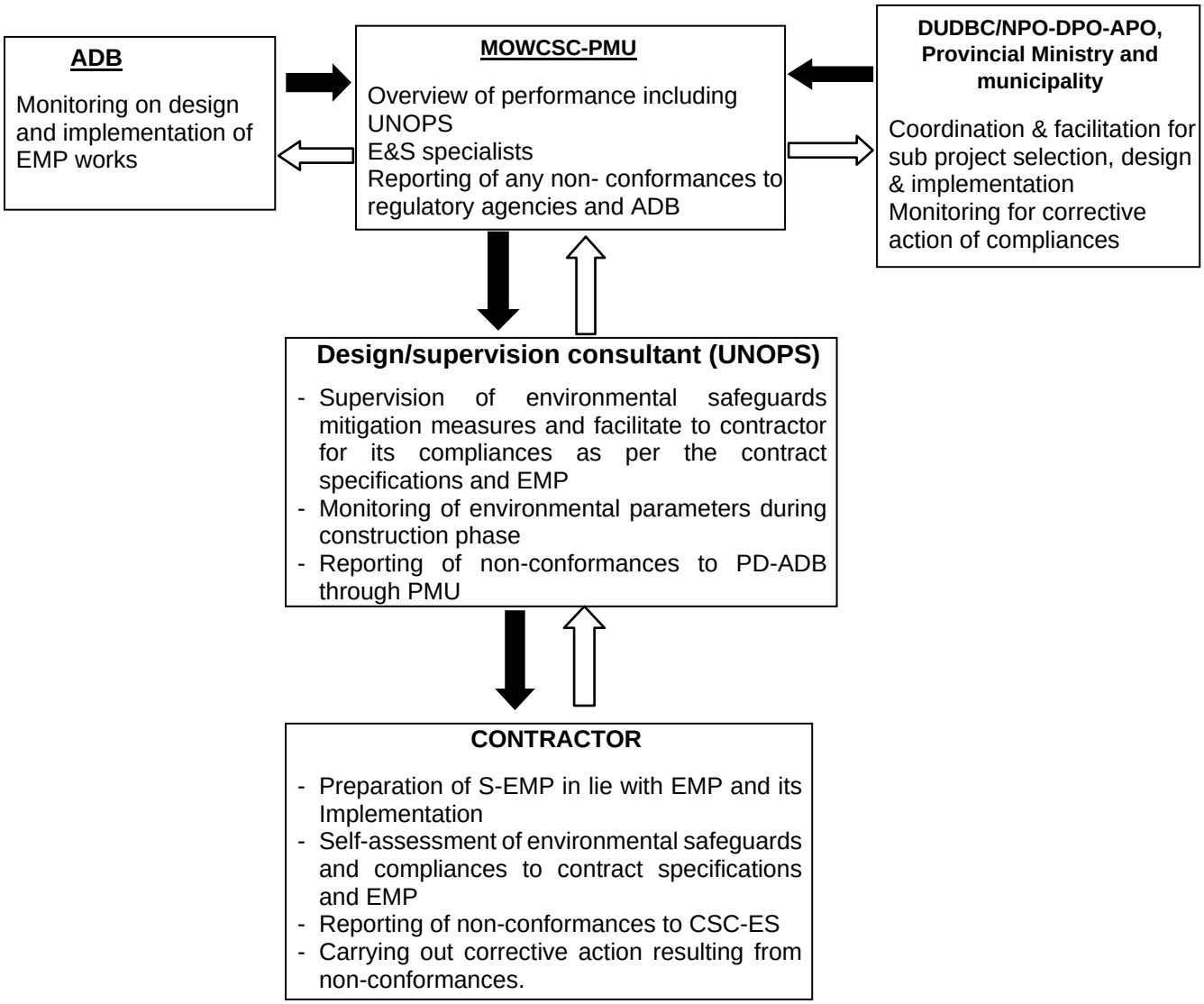
A. Institutional Arrangements

180. DUDBC will construct the WCSCSC buildings and the national rehabilitation center in close coordination with the Nepal Police and Federal MOWCSC, while construction of provincial rehabilitation centers will be undertaken by the respective province-level implementing agences. There will be a PIU at DUDBC and concerned provincial ministry. The central PMU established at MOWCSC will be responsible for overall project planning, management, implementation, monitoring, and reporting. PMU activities include screening the proposed subproject in accordance with the selection criteria; coordinating with the respective PIUs in the provincial ministries, DUDBC and UNOPS; serving as project liaison for ADB; supervising quality control of detailed design and construction; procuring the civil works contractor; supporting capacity building; and overseeing safeguard compliance. The PMU will have UNOPS as the design and supervision consultants under the project.

181. The APOs, on behalf of the NPO, will be responsible for O&M of the WCSCSC facilities while MOWCSC and the province-level implementing agencies will handle O&M for the national rehabilitation center and province-level centers, respectively. Figure 6 details the

safeguards implementation arrangement of the respective subprojects.

Figure 6: Safeguard Implementation Arrangement



182. **Project management unit.** A project officer (Environment) will be engaged at the PMU level to ensure implementation of environmental safeguards. He or she will be provided with necessary consultant support, and capacity development. The responsibilities of the environment officer are as follows:

(i) Review and confirm that the existing IEE and EMP are updated based on final detailed designs, and that the IEE and EMP prepared by the subproject design consultant comply with detailed exclusion criteria and project selection guidelines stipulated by the EARF and government rules. The project officer then recommends these to the PMU for approval.
(ii) Approve subproject environmental category and ensure that the EMP is included in bidding documents and civil works contract.
(iii) Provide oversight on environmental management aspects of the subproject and ensure EMP is implemented by PMU and contractor.
(iv) Establish a system to monitor the project's environmental safeguards,

including monitoring the indicators set out in the monitoring plan of the EMP.

(v) Facilitate and confirm overall compliance with all government rules and regulations regarding site and environmental clearances as well as any other environmental requirements as relevant.
(vi) Supervise and provide guidance to the consultant to properly carry out the environmental monitoring and assessments as per the EARF to be developed.
(vii) Review, monitor, and evaluate effectiveness with which the EMP is implemented, and recommend necessary corrective actions to be taken.
(viii) Consolidate monthly environmental monitoring reports from PMU and submit semi-annual monitoring reports to ADB.
(ix) Ensure timely disclosure of final IEE and EMP in project locations and in a form accessible to the public.
(x) Assist with ongoing meaningful consultation and assist in setting up the GRM in respect of environment concerns.
(xi) Address any grievances brought about through the GRM in a timely manner as per the IEE.
(xii) Undertake regular review of safeguards-related loan covenants, and oversee compliance during program implementation.
(xiii) Organize periodic capacity building and training programs on safeguards for project stakeholders, PMU, consultants, contractors, and other stakeholders as prescribed by the EARF.

183. **United Nations Office for Project Services.** The project's overall management and quality control in design and supervision of the project activities, including EMP works, will be undertaken by a dedicated consultant team and will provide support to the PMU. The detailed terms of reference of the consultant are in the project administration manual, but some major responsibilities shall be as follows:

(i) Prepare and ensure the quality of the design and supervision of subproject construction and confirm the activities are to the required standards.
(ii) Assist the PMU with overall project planning, implementation, and monitoring, including adherence to all environmental and social safeguards' requirements.
(iii) Work closely with poject stakeholders, e.g., NPO, provincial ministries, APOs, municipal governments, and communities to ensure awareness of project benefits and their respective responsibilities.
(iv) Ensure that women, children, and vulnerable groups will benefit equally from the project.

184. **Civil works contractor.** The contractor will be required to designate an environment, health, and safety (EHS) supervisor to ensure implementation of EMP during civil works. The contractor needs to carry out all environmental mitigation and monitoring measures outlined in its contract. The contractor will be required to submit to PMU, for review and approval, a site-specific environmental management plan (SEMP) including (i) proposed sites or locations for construction work camps, storage areas, hauling roads, lay down areas, and disposal areas for solid and hazardous wastes; (ii) specific mitigation measures following the approved EMP; (iii) monitoring program as per SEMP; and (iv) budget for SEMP implementation. No works can commence prior to approval of SEMP and deputation of an EHS focal person by the contractor. The contractor will be required to undertake day-to-day monitoring and reporting to the PMU and UNOPS.

185. A copy of the EMP and approved SEMP will be kept on-site during the construction period at all times. Non-compliance with, or any deviation from, the conditions set out in the EMP or SEMP will constitute a failure in compliance and require corrective actions. The EAR

(to be developed) and IEE document specify responsibilities in EMP implementation during design, construction, and O&M phases.

186. The PMU will ensure that bidding and contract documents include specific provisions requiring contractors to comply with (i) all applicable labor laws and core labor standards on (a) prohibition of child labor as defined in national legislation for construction and maintenance activities; (b) equal pay for equal work of equal value regardless of gender, ethnicity, or caste; and (c) elimination of forced labor; and with (ii) the requirement to disseminate information on sexually transmitted diseases, including HIV/AIDS, to employees and local communities surrounding the subproject sites.

187. **Capacity building.** Safeguards specialists (environmental and social) under PMU will be responsible for training the PMU's safeguards officers (environmental and social); and engineers and social development officers and members of special committee if any as provisioned in the EAR and project administration manual. Training modules will need to cover safeguards awareness and management following both ADB and government requirements as specified below:

(i) Introduction to environment and environmental consideration in the project.
(ii) Review of IEE and integration into the detailed project design.
(iii) Improved coordination within nodal departments and division.
(iv) Monitoring and reporting system. The contractors will be required to conduct environmental awareness and orientation of workers before deployment to work sites.

B. Environmental Management Plan

188. An EMP has been developed to provide mitigation measures to reduce all negative impacts to acceptable levels.

189. The EMP will guide the environmentally sound construction of the subproject and ensure efficient lines of communication between PMU and respective PIUS, UNOPS, and the contractor. The EMP will (i) ensure that the activities are undertaken in a responsible and non-detrimental manner; (i) provide a proactive, feasible, and practical working tool to enable the measurement and monitoring of environmental performance on site; (ii) guide and control the implementation of findings and recommendations of the environmental assessment conducted for the subproject; (iii) detail specific actions deemed necessary to assist in mitigating the environmental impact of the subproject; and (iv) ensure that safety recommendations are complied with. The EMP includes a monitoring program to measure the environmental condition and effectiveness of implementation of the mitigation measures. It will include observations on- and off-site, document checks, and interviews with workers and beneficiaries.

190. The contractor will be required to (i) carry out all the mitigation and monitoring measures set forth in the approved EMP; and (ii) implement any corrective or preventive actions set out in safeguards monitoring reports as agreed by MOWCSC and ADB.. The contractor shall allocate budget for compliance with these IEE, EMP, and SEMP measures, requirements, and actions.

Table 36: Environmental Management Plan Matrix

Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Frequency of Monitoring
1. Pre-construction stage					
Consents, permits, clearances, no objection certificate(NOC), etc.	Failure to obtain necessary consents, permits, NOCs, etc. can result to design revisions and /or stoppage of works.	- Obtain all of the necessary consents, permits, clearance, NOCs, etc. prior to start of civil works. - Acknowledge in writing and provide report on compliance all obtained consents, permits, clearance, NOCs, etc.	PMU, DS-consultant NPO	Incorporated in final design and Communicated to contractors.	Prior to award of contract
Existing utilities	Disruption of services and impact on structures	- Identify and include locations and operators of these utilities in the detailed design documents to prevent unnecessary disruption of services during construction. - Require contractors to prepare a contingency plan to include actions to be done in case of unintentional interruption of services. - Require contractors to relocate and demolish the structures with de consultation to the local stakeholders - Require contractors to prepare spoils management plan (see Annex 3 for outline).	MoWCSC/DS-consultant NPO-Technical team	List of affected structures and operators; bid document to include requirement for a contingency plan for service interruptions (for example provision of water if disruption is more than 24 hours)	During phase detailed design
Water supply and Sanitation	Contamination of groundwater due to seepage of wastewater from the service centers	- Ensure the toilets are constructed as per the standard designs; and - Provision of water supply to ensure efficient operation of the toilet.	MoWCSC/DS-consultant NPO-Technical team	Incorporated in final design and communicated to contractors	Prior to award of contract
Stockpile areas, Storage areas, Disposal areas, and workers camp (if needed)	Disruption to traffic flow and sensitive receptors	- Determine contracts locations prior to Award of contract. Provision of hard barricading and covered by non transparent materials	MoWCSC/DS-consultant NPO-Technical team	List of selected sites for stockpile areas, storage areas, disposal areas, and workers camp (if needed). Written consent of landowner/s (not lessee/s) for reuse of excess spoils to agricultural land	During detailed design phase
Waste generation	Generation of solid waste, wastewater and other construction waste may cause pollution from work sites and workers camp (if any is established)	- Mechanism of safe disposal will be developed in the subproject site before the actual commencement of work, including provision of waste bins at different corners of the construction area - Prohibition of unwanted littering and discharge of waste. - Proper management of solid waste will be done using lined pits for waste disposal.	Contractor	Contractor records. visual inspection	During detailed design phase
Training on EMP	Poor EMP implementation	- Project manager and contractors to undergo training on	MoWCSC/DS-	Record of completion	During detailed

Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Frequency of Monitoring
Implementation	leading to unfavorable impacts to Environment, workers and community.	EMP implementation, including standard operating procedures (SOP), and occupational health & safety (OHS) for construction works. - Timely implementation of the EMP. - Development and execution of measures for any unanticipated impacts.	consultant NPO-Technical team	(Safeguards Compliance Orientation or Training)	design phase prior to mobilization of workers to site.
2. Construction Stage					
A. Physical Environment					
Topography, landforms, geology and soils and/or river morphology and hydrology	Slope/surface cutting and excavation and Dismantling works may cause slope failure and erosions Disposal of construction waste and excavation of building foundation shall impact on the downstream rivers and local hydrology	- Soil erosion will be minimized by taking precautionary measures such as: (i) reuse of excavated soil, (ii) immediate and proper backfilling of the structures, and (iii) the excavated soil temporarily stored properly against erosion by using barriers or silt traps. - Consent will be taken before dismantling of existing structures. All the concerned stakeholders will be coordinated before dismantling. Safe dismantling will be carried out. This will be one of the components of S-EMP of the contractor. - Regular monitoring of downstream water quality and hydrological phenomenon in the area	Contractor	Records of sources of materials and records of potential areas of soil erosion; Sites of reservoir construction, treatment plant construction, transmission mains and distribution pipelines.	Daily (or as often as necessary especially during monsoon or rains) by contractor. Monthly visual inspection by PMU and ES.
Community facilities and strucures	Temporary structures located at eh WCSCSC construction area; a car garage of Gaushala and badminton coart of Pokhariya APO are to be relocated and a non-used house building at Bhediya and old/non used APO office at Simara are to be dismantled.	- Verify and update list of thestructures and utilities to be demolished and relocate and prepare a plan of action for the same and execute it with prior consultation to the local stakeholders; - If construction work is expected to disrupt, users of community shall be informed 7 days in advance and again 1 day prior to start of construction. - Ensure any damage to properties and utilities will be restored or compensated to pre-work conditions.	Contractor	List of any public or private infrastructure disturbed by the subproject works Minutes of meetings with the locals or affected persons.	As per need, or field- inspection if any such case is foreseen.
Water bodies and water quality	Pollution of water bodies, contamination of water sources due to waste disposal, transport of sediments from worksites and/or construction camps (if any)	- Excavation must be conducted during dry season to maximum extent possible to avoid the difficult working conditions that prevail during monsoon season such as problems from runoff. - Location of fuel storage will be constructed over ground with impervious platform and spillage control arrangement - Location for stock yards for construction materials shall be identified at least 300m away from water courses. Place for storage of fuels and lubricants will be away from any drainage leading to water bodies	Contractor	Areas for stockpiles and sites of storage of fuels and lubricants and waste materials; Number of physical measures (like silt traps installed). Visual inspection. Water quality test at and downstream of the discharge at every	Visual inspection by PMU-ES on weekly basis Weekly field monitoring Water quality test at and downstream of the discharge at every 6 month of construction period

Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Frequency of Monitoring
		- Take all precautions to prevent entering of wastewater into streams, watercourses, or irrigation system. Install temporary silt traps or sediment basins along the drainage leading to the water bodies. - While working across or close to any water body, the flow of water must not be obstructed. Ensure no construction materials like earth, stone, or appendage are disposed of in a manner that may block the flow of water of any watercourse		month of construction period	
Ambient air	Conducting works at dry season and moving large quantity of vehicleincrease in concentration of vehicle-related pollutants (such as carbon, monoxide, sulphur oxides, Particulate matter, nitrous oxides, and hydrocarbons) which will affect people who live and work near the sites.	- Water sprinkling at dry exposed surfaces and stockpiles of aggregates at least twice daily, or as necessary. - Use of solar as the source of light and limit the pollutants by specification for using diesel generators - Require trucks delivering aggregates and cement to have tarpaulin cover and maintain a minimum of 2" freeboard - Limit speed of construction vehicles in access roads to maximum of30kph. - Ensure use of equipment and fuel complying with applicable emission standards.	Contractor	Location of stockpiles. Number of complaints from receptors. Heavy equipment and machinery with air pollution control devices. Certification that vehicles are compliant of air quality standards.	Daily monitoring (when there are ongoing works) by contractor. Monthly visual inspection by PMU-ES. Air quality monitoring test in 2 times; initial and middle of the contract duration during Jan-June of construction period
Acoustic environment	Construction activities will be on settlements along and near schools, and areas with small- Scale businesses. Temporary increase in noise level and vibrations may be caused by constructions equipment, and the transportation of materials, and people.	- Plan activities in consultation with local administration so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance. - Keep in enclosure of diesel generators that will dampen noise level. - Restrict noisy activities today time. - Minimize drop heights when loading and unloading coarse aggregates. - Horns should not be used unless it is necessary or unavoidable - Utilize modern vehicles and machinery with the requisite adaptations to limit noise and exhaust emissions, and ensure that these are maintained to manufactures' specifications at all times.	Contractor	Results of monitoring noise levels (Maintain maximum sound levels not exceeding 70 decibels when measured at a distance of 10m or more from the construction sites) Number of complaints from sensitive receptors	Daily monitoring (when there are ongoing works) by contractor. Monthly inspection by PMU-ES. Noise level measurement in daily basis where the noise producing construction activities are carried

Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Frequency of Monitoring
		- All vehicles and equipment used in construction shall be fitted with exhaust silencers. Use silent type generators - If it is not practicable to reduce noise levels to or below noise exposure limits, the contractor must post warning signs in the noise hazard areas. Identify any building at risk from vibration damage and avoiding any use of pneumatic drills or heavy vehicles in the vicinity. Complete working these areas quickly.			
Waste disposal	Pollution of water and land resources, and cases of vector borne diseases due to haphazard waste disposal	- Waste minimization and waste segregation will be prioritized - Practices of composting of biodegradable waste generated from camp will be promoted - Containment of hazardous waste will be carried out - ADB's Good Practice Guidance for the Management and Control of Asbestos shall be followed to safely handle asbestos (if any) and properly manage the risk of removal - Dismantling waste to be used for backfilling, and needs to be disposed only at designated disposal site identified in SEMP.	Contractor	On-site situation in campsites (if any), work sites and their vicinities	Monthly monitoring by PMU-ES
B. Biological Environment					
Vegetation	- There will be minimal loses of vegetation; bushes cover during construction works. Altogether 2 different trees will be cut in Gaushal	- Greenery promotion around the construction area is proposed - Tree felling will be avoided by the project, but loss at Gaushala will be compensated with compensatory plantation @ 1:10 (20 saplings) and will receive prior approval from the authority - Species of local economic significance and values will be planted	Contractor	Area of greenery that has been cleared Complaints or grievances by the locals	Monthly monitoring by PMU-ES
Impacts on Fauna	Disturbances to local birds, reptiles and mammals	- No heavy vehicles will be made available - to run on the road that may disturb the wildlife of the nearby area - Horn prohibited sign will be placed in nearby wildlife inhabited area - Prohibit workforce from any wood logging, hunting - Designating stockpiling areas - Providing alternative fuel to workers for cooking. - Conducting environmental awareness activities for the workforce (especially with respect to importance of conservation and protection of wildlife)	Contractor	Vehicles running Nearby wildlife	Monthly visual inspection by PMU-ES

Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Frequency of Monitoring
Aquatic system	Disposal of waste on or nearby water bodies, sediment transport and leakage/disposal of hazardous waste may harm the aquatic lives in the rivers/steams of subproject area	- Washing of vehicles on nearby rivers will be restricted - Disposal of waste of any kind on water bodies will be strictly prohibited - Fishing in nearby rivers will be prohibited for workforce	Contractor	Nearby water bodies; as stated table V-1 at will be monitored with respect to project activities; Any grievances from locals regarding disposal of waste onto water bodies will be Referred	Monthly visual inspection by PMU-ES
C. Socioeconomic Environment					
Community activities	The construction related activities that generate dust, noise and impede access will disturb the local residents	- To minimize disturbances, construction work will be conducted in covered compound by non transparent objects - Disturbances to local activities are foreseen at nearby by settlements - The local residents will be consulted and informed about the work schedule and possible disturbances in advance.	Construction contractor	Time scheduleof construction work; Information related to construction activity to local residents Number of temporary diversions signboards etc.	- Daily (or whenever there are construction activities) by contractor - Monthly visual inspection by PMU-ES and SDS
Social harmony	Poor sanitation practices by workforce may cause pollution of surrounding environment. Social problems may arise due to bad behavior of the workforce such as gambling, alcoholism and disrespect to local	- Include in workers training adherence to proper housekeeping practices at worksites. - Local people should be given priority to work (recommended that more than 50% local workers whenever available) in the subproject which helps to minimize the chances of cultural discrepancy and conflict due to increased outside workers	Construction contractor	Daily entry-sheet of the workforce in the campsites Number of local people versus outside workers in the subproject area will be regularly monitored	Monthly inspection at campsites (if any) by PMU-ES and SDS
Occupational Health & Safety and labor camp management	During the construction work, the laborers involved in the construction activities may be exposed to different level of health risks and are prone to accidents people and culture	- Mandatory use of safety measures (PPEs) such as mask, helmet, hand gloves and rubber boots, etc. - The laborers will be insured for their health and safety. - Provide safe drinking water to labors - First aid box will be kept at a proper and easily accessible place. - Place a ICT/posters informing OHS awareness at contractors camps - Prohibit child labour in all construction activities. - Health & hygiene practices; precautions will be taken in response to current risk of - CovID19 infections - Employer will add Labor Camp Standards in BOQ and	Construction contractor	Availability of personal protective equipment, First-aid facilities, Medical insurance coverage for workers, Housekeeping and condition of sleeping and sanitation facilities at campsite (if any), Roster of workers	- Daily (or when there is a construction activity) by contractor. - Monthly visual and document inspection by PMU-ES and SDS - Use of covid-19 response checklist for biweekly reporting

Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Frequency of Monitoring
		contract - Restrict on use of CGI sheet for camp, Rental of existing building, or use of readymade modular structures having separate living, cooking and dinning areas			
Community Health & Safety	Overall, communities will be exposed to cross- cutting threats from construction's impacts on air and water quality, ambient noise level; Chances of accidents, Communicable and transmittable diseases may potentially be brought into the community by construction workers	- Contractor's will maintain adequate space and adequate lighting, temporary fence, barriers and signage at worksites; - Children will be prohibited from active construction sites - Proper fencing of stockpile areas - Awareness programs on communicable diseases and hygiene practices will be carried out - Disseminate the GRM to communities and affected stakeholders during consultations - Sensitive localities in terms of risk of the impact area	Construction contractor	Number of complaints from sensitive receptors; Number of, signs, and metal sheets placed at subproject location	- Daily by contractor. - Monthly visual inspection by PMU-ES and SDS
D. Historical, Cultural, and Archaeological Environment					
Physical and cultural heritage	- Although the subproject area holds no visible above-ground PCRs, potential archaeological relics could be identified underground and could be damaged due to construction activities. - Shall cause impact in aesthetic beauty and shall disturb its operation due to influx	- If by chance any such findings are spotted or suspected, the contractor will immediately stop work to allow further investigation, in coordination with Department of Archaeology. - Comply with chance finding procedure if any suspected during construction - Orientation to influx and attention while carrying and stockpiling of construction materials and waste	Contractor	Records of chance finds	Daily (when there are excavation activities) by contractor. Monthly visual inspection by PMU-ES and SDS
Operation and Maintenance Stage					
Water bodies	- Water pollution due to effluent produced from the toilet/septic and sanitation facilities to the river course may cause harm to the water bodies and aquatic life especially during the dry season when flow will be less.	- A settling tank is proposed for decanting of the slurry from the effluent during backwash - Septic tank sludge shall be used by local manure producer when it is required to be managed - Location of fuel storage will be constructed over ground with impervious platform and spillage control arrangement	Contractor during DLP; DPO/APO and Management committee after DLP	Visual inspection Effluent sampling	Monitoring unit of the agencies; MoWCSC, NPO/DPO
Impact of use of diesel generators	Noise nuisance, disturbance to locals; and possible ambient air pollution	- Under suitable condition governed by location of water source, the electro- mechanical components will be placed as practicably far as possible from the major settlements; say more than 50 meters far from the major settlement or market area.	Contractor during DLP; DPO/APO and Management	- Visual inspection Water Quality reports - WTP records in the logbook	Daily or as needed visual inspection Monitoring unit of the agencies; MOWCSC,

Field	Impacts	Mitigations Measures	Responsible for Implementation	Monitoring Indicator	Frequency of Monitoring
		- Regular maintenance of generators - keep in enclosure that will dampen noise level. And lensure the quality by limiting in the specificatio - Use of good quality fuel	committee after DLP		NPO/DPO
Impacts due to use of solar power	Disposal of used bulbs and batteries with acid will harm soil and water if openly disposed	- Use longlife batteries having least environmental impact - Recycle old batteries - Use led bulbs and manage old bulbs	Building management authority	- Record of use and recycling of batteries	On-going activity during operation stage.
Occupational Health and Safety of residents of the building and community risks	Risk of health and safety including COVID contamination Accident and behavioral risk of survivors to the community	- Provision of standard set of PPEs while engaged in maintenance of the service centers - Provision of adequate welfare facilities including clean water, soap, nailbrushes, disposable paper towels and washing facilities. - Provision of First Aid Kits. Provisions should include clean water or sterile wipes for cleansing wounds, and a supply of sterile, waterproof, adhesive dressings in the centers. - Under the context of possibility of spread of the viral infections, the workers will be instructed for compulsory use of masks other measures prevent from Covid-19. - Comply precautionary measures for the safety of survivors and - Comply mitigatory measures and Conduct close monitoring to prevent the risk from survivors to the community	Contractor during DLP; DPO/APO and Management committee after DLP	- Records of use of PPEs Inventory of welfare - Utilities Medical - screening records of the workers	On-going activity during operation stage
Risk due to desasters; fire, flood and earthquake to service users	Both natural and man-made, such as fire, earthquake, flood could risk the life of people living in the building in the absence of proper design to bear the shock during such event, and emergency rescue mechanism during operation	- Design shall include factor for ensuring seismic resistant building following the National Building Code (NBC); - Install fire alarm system and firefighting system; - Adopt necessary measures on fire safety; - Train people managing the facility on tackling safety measures during emergency by preparing an emergency response procedure; - Conduct regular safety drills and other preparedness measures like keeping first aid box, use of IEC materials	DPO/APO and Management committee	Design verification, records of preparedness programs	On-going activity during operation stage

C. Environmental Monitoring Program

191. Environmental monitoring will be done at three levels during construction:

(i) monitoring of project performance by the UNOPS;
(ii) monitoring implementation of mitigation measures by the NPO and PIU, and
(iii) overall regulatory monitoring of environmental issues by the PMU-ES.

192. In addition to regular monitoring on-site (at subproject level) by the PMU/UNOPS- ES on EMP implementation of the mitigation measures, monitoring of key environmental parameters is proposed. Table 37 presents the indicative environmental monitoring plan for the subproject which includes relevant environmental parameters, with a description of the sampling stations, frequency of monitoring, applicable standards, and responsible agencies. This will be updated during the finalization of detailed design to ensure EMP and monitoring program is commensurate to the impacts of the subproject.

Table 37: Environmental Pollution Monitoring Program

S.N	Field	Stage	Parameters	Location	Frequency	Standards	Responsibility
1.	Air quality	• Prior to construction to establish baseline • Construction phase	TSP, PM_{10}, SO_2, NO_x (only if potential source is due to subproject)	• Work site locations	• 24-hour monitoring once in every season (Jan-June) for the construction period	• National Ambient Air Quality Standard, 2003 • WHO Air Quality Guidelines, 2005.	Contractor
2.	Noise and vibration levels	• Prior to construction to establish baseline • Construction phase	Equivalent day and nighttime noise levels	• Work site locations • Construction campsite locations	• Every day during construction work	• National Noise Standard Guidelines, 2012 • Noise Level Guidelines per IFC Environmental Health and Safety Guidelines	Contractor
3.	Water quality	• Prior to construction to establish baseline • Construction phase	TSS, pH, fecal coliform (other parameters as required by NDWQS)	• Supplied water and at Adjacent to construction sites (to be identified by the SEMP	• Every 6 month for the entire period of construction	• National Drinking Water Quality Standards,2005 • WHO Guidelines for Drinking-Water Quality, 4th Edition, 2011	Contractor

D. Institutional Capacity Development Program

193. Considering the project's key players and their limited capability in environmental management, technical assistance from environmental specialists and capacity development during loan implementation will be needed. Capacity development will consist of hands-on training in EMP (as well as in the EARF to be developed) implementation, complemented with a short-term series of lectures or seminars on relevant topics.

194. DUDBC, provincial ministry, MOWCSC, NPO, the APOs, and DPO have limited capacity to comply with the mitigation measures as required by the EMP. Considering that GBV and gender issues are becoming critical concerns in both urban and rural settings, and that these issues are driven by the complex dynamics of inequality, discrimination, and marginalization, a series of awareness and sensitization training programs needs to be developed and implemented in this regard. On the other hand, capacity building for GBV survivors shall be delivered using a "learning by doing" model.

195. The contractor will be required to conduct environmental awareness orientation among workers prior to their deployment, with the proposed training design and schedule presented in Table 38. The environmental safeguard specialist and field monitoring staff are responsible for organizing the said training program.

Table 38: Training Program for Environmental Management

Items	Pre-construction/prior to construction	Construction	
Training Title	Orientation meeting on SEMP and safeguards policy of project	Orientation program/ workshop for NPO engineers, consultant, and contractor team	Experiences and best practices sharing
Purpose	To make the participants aware of the environmental safeguard requirements of ADB and GON and the project and explain how the project has to meet these requirements	To build the capacity of the staffs for effective implementation of the designed EMPs aimed at meeting the environmental safeguard compliance of ADB and GON	To share the experiences and best practices aimed at learning lessons and improving implementation of EMP
Contents	**Module 1: Orientation** • ADB Safeguards Policy Statement • Government of Nepal Environmental Laws and Regulations **Module 2: Environmental Assessment, Monitoring and reporting Process** • Environmental process, identification of impacts and mitigation measures, formulation of an environmental management plan (EMP), implementation, and monitoring requirements and Reporting • Review of environmental assessment and compliance monitoring report to comply with ADB and GoN requirements • Incorporation of EMP into the project design and contracts • GBV and Gender concerns and services	• Roles and responsibilities of officials/contractors/consultants towards protection of the environment • Environmental issues during construction • Implementation of EMP • Monitoring of EMP implementation • Reporting requirements • GBV and Genders concerns	Experiences on EMP implementation – issues including GBV and challenges Best practices followed

Items	Pre-construction/prior to construction	Construction	
	• Appropriate services on OHS, use of solar panels, waste management, SOP for COVID management, emergency protocols etc.		
Duration	1 day	1 day	1 day on a regular basis. Training frequency to be determined by PMU
Participants	Executing and implementing agencies, provincial ministry/municipalities, NPO/DPO/APO staff (technical and environmental) involved in the project implementation	Contractors	PMU- ICGs Contractors

ADB = Asian Development Bank, APO = are police offices, EMP = environmental monitoring project, GBV = gender-based violence, PMU = project management unit.

E. Staffing Requirement and Budget

196. The budget required for implementing the EMP will cover the following activities:

(i) updating IEE, preparing and submitting reports, and conducting public consultation and disclosure;
(ii) application for local environmental permits; and
(iii) monitoring and evaluation using surveys.

197. Environmental monitoring during construction will also be straightforward and will involve periodic site observations and interviews with workers and others, plus reviews of reports and other documents. This will be conducted by PMU-ES along with the environmental safeguard officer. Therefore, no separate budget is required for the PMU- ES.

198. The cost of mitigation measures and surveys during construction stage will be incorporated into the contractor's costs, which will be binding on him for implementation. The surveys will be conducted by the contractors.

199. The MOWCSS and NPO will be responsible for good operating practices that will serve as mitigating measures during project operation. All monitoring during O&M phase will be conducted by units within the MOWCSS and NPO and does not require additional budget.

200. The indicative cost of EMP implementation, safeguards and its monitoring are shown in Table 39.

Table 39: Indicative Cost of EMP Implementation and Its Monitoring

S.N.	Particulars	Stages	Unit	Total Number	Rate (NPR)	Cost (NPR)	Cost covered by
A	**Mitigation Measures**						
1	Protection works, slope stabilization works		LS			1000,000	Civil works contract
2	Rehabilitation, and reinstatement works		LS			2000,000	Civil works contract

S.N.	Particulars	Stages	Unit	Total Number	Rate (NPR)	Cost (NPR)	Cost covered by
3	Greenery management / Promotion including compensatory plantation	Construction phase	No	4	100000	400,000	Civil works contract
B	**Monitoring Measures**						
1.	Air quality and noise level monitoring	- Pre- construction - Construction	Per location	8		200000	Civil works contract
2.	Noise levels monitoring	- Pre- construction - Construction	Per location			-	Civil works contract
3.	Water Quality Test	Pre-construction - Construction	Per Location	8		2000000	Civil works contract
C	**Capacity Building**						
1.	(i) Orientation workshop for officials involved in the project implementation on ADB Safeguards Policy Statement, GoN environmental laws and regulations, and environmental assessment process; (ii) induction course contractors, preparing them on EMP implementation and environmental monitoring requirements (iii) Organize OHS training to project staff and contractors (iv) lessons learned information sharing	Module 1 – immediately upon engagement of the environmental specialists Module 2 – prior to award of civil works contracts (twice a year for 4 years) Module 3 - Upon completion of the project	lump sum	4 12 4	Module 1 – 100,000 Module 2 – 100,000 Module 3 – 100,000	400,000 1200,000 400,000	
D	**Administrative Costs**						
1.	Legislation, permits, and agreements	Permit for excavation, tree-cutting permits, etc.	As per requirement	NA	NA	NA	
E	**Other Costs**						
1.	Public awareness	Focused on Community Health and Safety & Environmental Conservation, Total Sanitation; and Information dissemination	As per requirement	Lump sum		400000	Civil works contract – contractor's defect liability period
2.	Water sprinkling	At active sites near settlement/ market areas (as needed)		4	100000	400,000	Civil works contract
3.	Social safeguards	Grievances, information disclosure, meetings		4	100000	400,000	Civil works contract – contractor's defect liability

S.N.	Particulars	Stages	Unit	Total Number	Rate (NPR)	Cost (NPR)	Cost covered by
							period
4.	Any unanticipated impact due to project implementation	Mitigation of any unanticipated impact arising		Lump sum	Contractor's liability	As per insurance requirement	Civil works contract – contractor's defect liability period
F	**External Monitoring Costs**						
	External Monitoring Costs			4	500,000	2000000	PMU cost
TOTAL						**9000000.00**	

201. The EMP will be included in civil works bidding and contract documents. The total EMP cost is $0.9 million and will be included in the contract document to ensure implementation.

IX. INFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION

A. Information Disclosure Consultations and Participation

202. Field observations and consultation visits to the respective subproject areas conducted from 7 September 2021 to 12 February 2022 were constrained by prevailing government-mandated COVID-19 protocols. As such, interviews and discussions with stakeholders (e.g., APO and DPO representatives, municipal officials, community members) were done via telephone, with in-person consultations done where allowed. Altogether, 28 persons comprising 24 males and 4 females from different castes and ethnicities (14 Brahmin/Chhetri, 9 indigenous people, 1 Dalit, and 2 Madhesi) were consulted (Table 40). Stakeholder consultations and local participation were considered an essential process in subproject and IEE study preparation. The observation and consultations were carried out together with a technical team, where issues and concerns were discussed and insights informed project design and implementation and the procedure of designing and implementing the projects and its beneficial and adverse impact to the community. The process in engaging stakeholders and beneficiary agencies, APOs and municipalities personnel and involved key informant interviews and on-site discussions. Table 40 presents the detail of the people consulted during the IEE Study.

Table 40: List of People and Institutions Consulted

SN	Name	Organization/ Address	Male/ Female	Caste/Ethencity
WCSCSC at Bhediya APO, Saptari				
1	Bishnu Bahadur Thapa	Ward no 2 Chairperson, Surunga, Saptari	Male	Chhetri
2	Samir Rai	Police Sub –Inspector, Bhediya APO, Saptari	Male	Indigenous community
3	Upendra Prasad Chaudhary	Social Worker, Bhediya, Saptari	Male	Indigenous community
4	Kailash B.k	Police Constable, Bhediya APO, Saptari	Male	Dalit
WCSCSC at Gaushala APO, Mahottari				
1	Dharmendra Shah	Ward no 8 Chairperson, Gaushala, Mahottari	Male	Chhetri
2	Nanda Lal Chaudhary	Social Worker, Gaushala, Mahottari	Male	Indigenous community
3	Bishnu Pradeep Bashyal	Police Inspector, Gaushala APO, Mahottari	Male	Brahmins
4	Bhuban Singh Karki	Sub Inspector, Gaushala APO, Mahottari	Male	Chhetri

SN	Name	Organization/ Address	Male/ Female	Caste/Ethencity
WCSCSC at Simara APO, Bara				
1	Manjeet Kunwar	Sub inspector, Simara APO, Bara	Male	Chhetri
2	Ramchandra Lama	Ward-1, Chairman, Simara, Bara	Male	Indigenous community
3	Subhiga Karki	Ward-2, Chairman	Male	Chhetri
4	Shiva Paudel	Local inhibitant, Simara, Bara	Male	Brahmins
5	Ganeshraj Bharati	Local inhibitant, Simara, Bara	Male	Brahmins
6	Bachu ram Budhathoki	Accountant Simara APO, Bara	Male	Chhetri
7	Sumitra Karki	Local inhibitant, Simara, Bara	Female	Chhetri
WCSCSC at Pokhariya APO, Parsa				
1	Salma Khatun	Vice chairman of Pokhariya Municipality	Female	Madhesh Pradeshi
2	Deepak Thapa	Sub inspector, Pokhariya APO	Male	Chhetri
3	Bankam Raut Kurmi	Ward-1, chairman, Pokhariya Municipality	Male	Madhesh Pradeshi
4	Aftab Alam	Social worker, Ward-1, Pokhariya Municipality	Male	Madhesh Pradeshi
5	Laxman Sahu	Ward-4, Chairman, Pokhariya Municipality	Male	Maddhesi
6	Sailendra Kumar Singh	TST member of provincial police, Janakpur	Male	Chhetri
Suryavinayak Rehabilitation Center at Suryavinayak-7, Bhaktapur				
1	Rabindra Sapkota	Ward chairman,Suryavinayak-7, Bhaktapur	Male	Brahmins
2	Surya Bahadur Bhaiju	Head of ward office	Male	Indigenous community
3	Prakash Raj Pant	Engineer of Suryavinayak municipality	Male	Brahmins
4	Surya Bahadur Makaju	Chief Admin of ward-7, Suryavinayak Municipality	Male	Indigenous community
5	Mina Kumari Nagarkoti	Local people, Suryavinayak-7, Bhaktapur	Female	Indigenous community
6	Bsanta Tamang	Local people, Suryavinayak-7, Bhaktapur	Male	Indigenous community
7	Kalpana Rai	Local people, Suryavinayak-7, Bhaktapur	Female	Indigenous community

Source: IEE field survey, 2021.

203. Also during the field visits, formal and informal public consultations were conducted at the subproject areas. Safety, delivery levels for social services, greenery preservation, dust control, and safe site selection of workers' camps during construction were among the concerns raised during the public consultation (Table 41).

Table 41: List of Public Consultations and their Summary

Meeting Date	Participation	Venue & Participation	Recommended Measures
7 September, 2021	Ward chair person of Suryavinayak Municipality-7, ward members, members of local community and other officers	Suryavinayak municipality-17,ward office	Municipality and local community further highlighted the need of the such service center and committed to support facilitation preparatory work for design of the project
25 September 2021	Ward chairman of Gaushala municipality, ward members, members of local community and other officers	APO office Gaushala, Mahottari	Municipality has already decided to provide land for the center and also committed to provide additional land if any required by the design document. They further suggest accelerating the works in sooner way.
26 September 2021	ward chairman of Surunga municipality, members, members of local community, APO chief and other officers	APO office Bhediya a, Saptari	Municipality and local community further highlighted the need of the such service center and committed to support facilitation for the implementation and operation of the project
12 February 2022	ward chairman of jitpursimara ward 1 and 2 chairman, ward members, members of local community, APO chief and other officers	APO office Jitpursimara, Bara	Municipality and local community further highlighted the need of the such service center and committed to support facilitation for the implementation and operation of the project
12th February 2022	Vice chairman of Pokhariya municipality, Ward- 1 and 4 person of Pokhariya municipality, ward members, members of local community, APO chief and other officers	APO office Pokhariya, Parsa	Representatives of the municipality shows their commitment for all kinds of supports and coordination, Local community are happy to get this center in their locality/near by APO and request to start the construction work sooner
2 March, 2022	Ward chair person of Suryavinayak municipality-7, ward members, ward officers and members of local community	Suryavinayak Municipality-17,Sabbopakha, Bhaktapur	Municipality and local community further highlighted the need of the such service center and committed to support facilitation for the implementation and operation of the project and requested for local employment as well as upgrade the existing road up to black top.

Source: IEE field survey, 2021.

204. The concerns raised by the stakeholders during public consultations have been addressed during preparation of this IEE report. The following environmental and social safeguards and sustainability-related concerns raised during the consultations can be considered as employment opportunities for locals:

(i) Greenery establishment within the center.
(ii) Noise and dust control during construction.
(iii) Timely completion of project construction works as per targets during the planning phase.
(iv) Adequate furnishing and safety measures in building design.

205. Stakeholder particiption in consultations shall also be continued throughout the operation of the rehabilitation centers. To facilitate stakeholder engagement, the PMU and DS engineer, and NPO, DPO, and APO teams will maintain open communication lines and good relations with the local governments and communities. The executing agency, including teams from the NPO, DPO, APO, DS, and project contractor will make themselves available on matters concerning subproject progress, adverse impacts, mitigation measures and

environmental monitoring, and grievances. Stakeholder consultations will proceed as follows:

(i) During subproject construction, any major change in design, alignment, or location will warrant the conduct of at least one public consultation meeting to convey perceived impacts and solicit concerns and recommendations from affected communities.
(ii) Prior to construction, the subproject team will conduct an orientation to raise community awareness regarding the upcoming construction, its anticipated impacts, the GRM, contact details and location of project focals (e.g., PMU, NPO, DPO, or APO, municipal government) and status of compliance with the government's environmental safeguard requirements, among others. Billboards about the subproject, its implementation schedule, and contact details of the executing agency, PMU/DS- ES, and contractors will be set up at strategic locations within the subprojects' jurisdiction. The grievance redress procedure and details will be posted at the APO and municipal office.
(iii) During construction and operation, the PMU/DS- ES will conduct monthly random interviews to monitor environmental concerns of subproject communities.
(iv) Public consultations and information disclosure will be continuous throughout the project cycle, and participation of women from beneficiary communities will be encouraged. The PMU, NPO, provincial ministries, and municipalities will be responsible for implementing these activities.

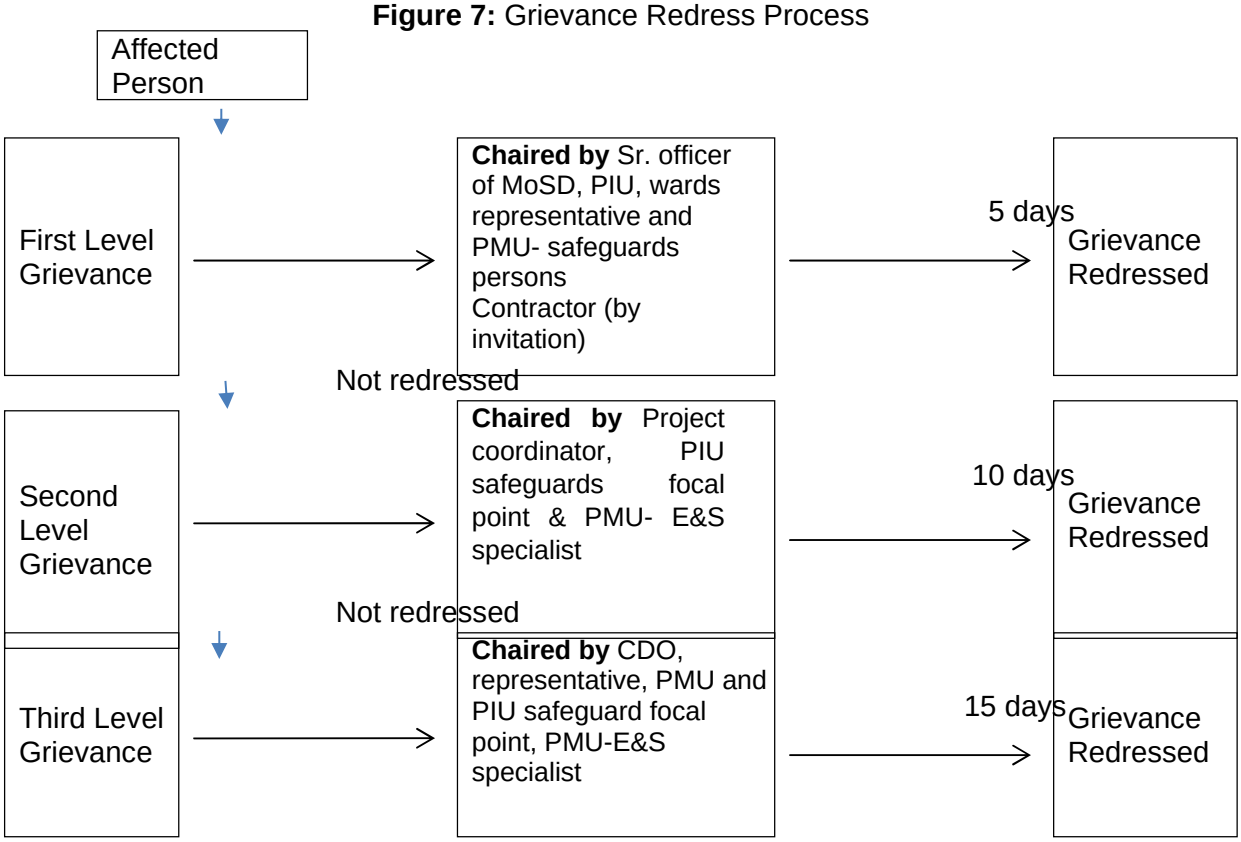
206. The ADB-approved IEE report will be made available at the offices of the PMU, NPO, provincial ministry, DPO, APO, and municipality for the perusal of interested parties. Copies may be made available upon formal request. The IEE and environmental monitoring reports will be disclosed in the ADB and PMU websites.

B. Grievance Redress Mechanism

207. During the course of the project, people may have concerns with the project's social, environmental, and other impacts. Project officials can address these concerns through the establishment of a GRM, which will receive, evaluate, and facilitate resolution of concerns by project-affected people. The GRM will aim to provide a time-bound and transparent venue to resolve such concerns. Grievances may be channeled through letters, emails, text messages via mobile phones, messages posted on the project or contractor's website, verbal narration, grievance boxes, and registers at the offices of implementing agencies. A suggested template for grievance redress form is in Annex 4.

208. The GRM will provide an accessible forum for receiving and facilitating resolution of affected persons' grievances related to the project. Grievances received via official channels shall be registered, and the process adopted for each grievance handled will be carefully documented. The environmental and social safeguards officer at the PMU will have the overall responsibility for timely grievance redress. The PMU/DS-ES/SDS will be the focal office for facilitating the grievance redress at the local level. The environmental and social safeguards specialist of the PMU, the design supervision consultant, and NPO technical team will support the DPO, APO, and municipality in conducting public awareness campaigns on the GRM and processes, especially among the poor and vulnerable are aware of the GRM and project's entitlements. The project will establish a three-level grievance redress process (Figure 7).

Figure 7: Grievance Redress Process



MoSD= Ministry of Social Developmnt, PMU= Project Management Unit, PIU= Project Implementation Unit,

209. **First level.** A grievance redress committee (GRC) will be formed at field level comprising five members. The first level GRC will be chaired by designated senior staff of concerned provincial ministry (for rehabilitation centers) and include the PIU chief, UNOPS safeguard monitor, local ward office representative, and UNOPS social safeguard consultant as members and contractor representative (by invitation). The environmental monitor will work as committee secretary and a maintain grievance registry and document records of grievances and resolution status. The PMU environmental monitor will document the following information (Table 42): (i) name of complainant, (ii) date complaint was received, (iii) nature of complaint, (iv) location, (v) means of communication, and (vi) status of the complaint (in process, resolved, forwarded to next level). Any person with a grievance related to project works, safeguards, and other issues can register their grievance with this GRC through any means of communication. The committee will meet on the second day of grievance registration and send an acknowledgement to the complainant regarding registration of the complaint and next steps within 3 working days of registration. The PMU and PIU contact number and GRC nodal officer's contact address will be publicly posted within the subproject areas and construction sites. The committee shall complete its resolution process in 7 days; if not, the grievance will be forwarded to the second level GRC within 10 working days and the complainant will be informed accordingly.

Table 42: Suggested Format for Record Keeping of Grievances

S.N.	Date of receipt of grievance	Name and Contact details of complainant	Description of complaint	Nature of complaint	Decisions Taken	Response given to complainant and date	Whether closed

210. **Second level.** The second level GRC will be formed at the PMU comprising three members to hear the unresolved grievances forwarded by the rehabilitation center or WCSCSC level GRC. This GRC will be chaired by the PMU project coordinator and consist of the PIU safeguard focal point and PMU environmental and social safeguard experts. The PMU safeguard expert will work as committee secretary and custodian of grievance-related documents. The committee will meet on the third day of grievance registration and make a decision within 7 working days of registration. If the committee resolves the grievance, it shall inform the complainant in written form about the decision copied to WCSCSC or rehabilitation center level GRC for case closure. If the grievance is not resolved at this level, it shall be endorsed to the third level GRC within 10 working days. Both the first level GRC and the complainant will be informed accordingly.

211. **Third level.** The third level GRC will comprise three members to hear unresolved grievances. The chief district officer will chair the committee that includes ward representative, PMU project coordinator, PIU safeguard focal point, and PMU environmental and social safeguard experts. The chief district officer may also wish to invite representative members from other agencies and the community. The PMU safeguard expert will work as committee secretary performin custodial and documentation functions. The committee will meet on the third day of grievance registration and decide on the grievance within 7 working days of registration. After resolution, the committee will notify the PIU to implement the agreed decisions and actions. The field level GRC will be responsible for implementing actions and closing the case once all actions are completed.

212. The PMU project coordinator will activate the third level of the GRM by referring the issue (with written documentation) forwarded by lower level GRCs which will, based on review, address the grievances in consultation with PMU, PIU, and complainant. The member secretary of the GRC will be responsible for processing and placing all documents before the GRC, recording decisions, issuing minutes of the meetings, and taking follow up action to see that formal orders are issued, and decisions are carried out. A decision has to be made within 15 days of receipt of complaint at this level. Complaints can be registered at GRC of PMU.

213. Each GRC will maintain a grievance registry containing following information: (i) name of the person, (ii) date complaint was received, (iii) nature of complaint, (iv) location, (v) means of communication, and (vi) status of the complaint (in process, resolved, forwarded to next level).

214. Despite the project GRM, an aggrieved person shall have access to the country's legal system at any stage, which can run parallel to accessing the GRM and is not dependent on the negative outcome of the GRM.

215. If the established GRM is not able to resolve the issue, the affected person should make good faith efforts to resolve issues working with the South Asia Regional Department through ADB’s Nepal Resident Mission. As a last resort, the affected person also can use the ADB Accountability Mechanism and directly contact (in writing) the complaint receiving officer at ADB headquarters or the ADB Nepal Resident Mission. The complaint can be submitted in any of the official languages of ADB’s DMCs. Implementing agencies will print flyers on the project’s GRM and distribute these to all stakeholders to inform them of the system.

216. **Periodic review and documentation of project lessons.** The PMU’s environment and safeguards officer will periodically review the functioning of the GRM at subproject and municipality level and record information on its effectiveness, especially with regard to the project’s ability to prevent and address grievances. Indicators pertaining to grievance redress (number of complaints received, number of complaints redressed or resolved) shall be reported to PMU in monthly and quarterly progress reports.

217. **Costs.** All costs involved in resolving the complaints (e.g., meetings, consultations, communication and reporting or information dissemination) at local (field, ward, or municipality) level will be borne by the concerned focal organizations at each level: the APO, DPO or ward office at subproject level, the PMU at central level, and the chief district officer level. Cost estimates for grievance redress are included in resettlement cost estimates.

X. MONITORING AND REPORTING

218. The PMU along with PIUs will regularly monitor EMP implementation performance. EMP monitoring will be governed by the mitigation measures and indicators set in the EMP matrix. PMU/UNOPS field engineers and safeguards officer including PMU-ES will compare the works completed and deviations from the original scope. They will also undertake site inspections and review progress documents to verify that the project complies with the EMP.

219. The PIU subproject unit will submit monthly monitoring and implementation reports to the PMU, who will take follow-up actions if necessary. The PMU will submit semi-annual monitoring reports to ADB. Project budgets will reflect the costs of monitoring and reporting requirements. During project operations, monitoring reports will be submitted to ADB on an annual basis. All monitoring reports will be submitted to ADB within 30 calendar days from the end of each reporting period. Reporting will start from project effectivity until a project completion report is issued. After ADB's review, monitoring reports will be posted on the ADB and MoWCSC websites. Monitoring reports will also be posted in a location accessible to the public.

220. In the event of unanticipated environmental impacts during implementation, MOWFCS will prepare a budgeted and time-bound corrective action plan to be agreed with ADB for any noncompliance with environmental covenants. An IEE may be required to be updated or a new one may be prepared depending on the circumstances. Any revisions or update smade on the IEE will have to be cleared by ADB prior to commencement or re-commencement of works.

221. ADB will review the project performance against MoWCSC's commitments as agreed in the legal documents. Monitoring and supervising of social and environmental safeguards will be integrated into the project performance management system. ADB will monitor projects on an ongoing basis until a project completion report is issued. ADB will carry out the following monitoring actions to supervise project implementation:

(i) conduct periodic visits to projects with adverse environmental or social impacts;
(ii) conduct supervision and review by ADB's safeguard specialists and officers or consultants for projects with significant adverse social or environmental impacts;
(iii) review the periodic monitoring reports submitted by PMU to ensure that adverse impacts and risks are mitigated, as planned and as agreed with ADB;
(iv) work with PMU to rectify to the extent possible any failures to comply with their safeguard commitments, as covenanted in the legal agreements, and exercise remedies to re-establish compliance; and
(v) prepare a project completion report that assesses whether the objective and desired outcomes of the safeguard plans have been achieved, taking into account the baseline conditions and the results of monitoring.

222. ADB's monitoring and supervision activities are carried out on an on-going basis until a project completion report is issued. ADB issues a project completion report within 1–2 years after the project is physically completed and in operation.

223. The contractor will be required to conduct environmental awareness and orientation of workers prior to deployment. The contractor needs to conduct regular monitoring of environmental status and compliance with standards in its work sites and campsites. This needs to be included in the monthly reports to the PMU consultant in the prescribed format. The contractor shall facilitate field visits for any and all monitoring activities planned by the PMU consultants, PMU personnel, and the ADB.

XI. CONCLUSION AND RECOMMENDATIONS

224. The proposed construction of WCSCSC and national rehabilitation center under the project in Madesh Pradesh Province is not an environmentally critical intervention. Preparation of IEE is not required as per the environmental provisions of Nepal. This IEE further provides the following conclusions:

(i) The subproject is not within any environmentally sensitive area and hence it is unlikely to cause any significant adverse impacts to flora and fauna of the area.
(ii) Since it is a physical development intervention, there will be some impacts on the local environment. However, the extent of impacts is expected to be local, confined within the subprojects' main areas of influence, for short period of time, reversible, and can be mitigated through appropriate measures.
(iii) Meticulous activities during construction of buildings and other facilities and proper management of construction campsites and stockpile areas are seen as major areas to focus with respect to environmental safeguards.

225. Considering the above statement, it the following aee being recommended:

(i) Mitigation measures integral to socially and environmentally responsible construction practices shall be applied across all subproject construction sites. Mitigation measures will not be difficult to implement but should be done in a timely manner and closely monitored.
(ii) Effective coordination with and dissemination of information to the local communities of respective subprojects should be done to minimize disturbances to local activities and damage to public or private properties during the construction works.
(iii) During operation, potential subproject risks can be mitigated with regular awareness-raising efforts among the users of the centers and the local communities.

226. The proposed subproject will reduce GBV cases and strengthen the government, civil society, and local community capacity to address gender issues. Further it will provide short and long-term support to GBV victims and bring positive development impacts not only to the subproject areas but also in the whole Madesh Pradesh Province and Bhaktapur. If necessary, the IEE will be reviewed based on the final detailed subproject design.

227. Based on the above findings, the classification of the proposed project as Category B is confirmed. The IEE is sufficient for the subproject, and no further special study or EIA needs to be undertaken for environmental safeguars of subproject implementation.

LITERATURE REVIEWED

- ✓ ADB, 2003. Environmental Assessment Guidelines.
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ANNEXES

ANNEX 1: REA CHECKLIST

Subproject: Construction of WCSCSC Building, at Bhediya APO, Surunga, Saptari

Rapid Environmental Assessment (REA) Checklist

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title	**Nepal: Strengthening Systems to Protect and Uplift Women Project-**Construction of WCSCSC Building, at Bhediya APO, Surunga ward no-2, Saptari
Sector Division:	MOWCSC

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area adjacent to or within any of the following areas:			
Underground utilities		√	
Cultural heritage site		√	
Protected Area		√	
Wetland		√	
Mangrove		√	
Estuarine		√	
Buffer zone of protected area		√	
Special area for protecting biodiversity		√	
Bay		√	
B. Potential Environmental Impacts Will the Project cause…			
Encroachment on historical/cultural areas?		√	
Encroachment on precious ecology (e.g. sensitive or protected areas)?		√	

Screening Questions	Yes	No	Remarks
Impacts on the sustainability of associated sanitation and solid waste disposal systems?		√	Sanitation and solid waste problems will be localized due to construction waste and wastes generated from influx camp during construction. EMP provides proper mitigation measures.
Dislocation or involuntary resettlement of people?		√	
Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?		√	
Accident risks associated with increased vehicular traffic, leading to loss of life?		√	
Increased noise and air pollution resulting from increased traffic volume?	√		Deterioration in ambient air quality will be localized and temporarily during the construction phase. Mitigation measures like regular sprinkling of water during construction activities and covering of construction materials.
Occupational and community health and safety risks?	√		Though the construction area is within the compound wall, the risk to service receiver of APO shall be mitigated by adopting measures as those provided in EMP.
Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		√	Risk shall be mitigated with due orientation to workers for safe handling of the tools and chemicals and by adopting other measures as provided in EMP
Generation of dust in sensitive areas during construction?		√	Problems shall be localized and shall mitigate with proper measures provided in EMP.
Requirements for disposal of fill, excavation, and/or spoil materials?		√	
Noise and vibration due to blasting and other civil works?		√	
Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction?		√	No any underground structures is assumed to be designed.

Screening Questions	Yes	No	Remarks
Long-term impacts on local hydrology as a result of building hard surfaces in or near the building?		√	No any underground structures is assumed to be designed.
Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		√	Limited influx having stationed within the compound of APO will not cause any impact and however will manage with mitigation measures as provided in EMP
Social conflicts if workers from other regions or countries are hired?		√	Limited influx having stationed within the compound of APO will not cause any impact.
Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation?		√	
Risks to community health and safety caused by management and disposal of waste?		√	
Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?		√	The construction area is within compound wall of APO and will check for direct access of the public. However the issues will be managed by adopting mitigation measures as provided in the EMP.

A Checklist for Preliminary Climate Risk Screening

Country/Project Title: Nepal: Strengthening Systems to Protect and Uplift Women
Project- Construction of WCSCSC Building at Bhediya APO, Surunga, Saptari
Division/Department: MOWSC

Screening Questions		Score	Remarks[12]
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?	0	Low risk of floods
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?	0	Project area is low land. Design shall consider inundation risk.

[12] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?	0	Issues are not foreseen
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s) ?	0	Issues arenot foreseen
Performance of project outputs	Would weather/climate conditions and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?		Issues are not foreseen

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response will be categorized as high risk project.

Additional Observation: an unused and old house/building strucures to be dismantled beore construction of proposed WCSCSC.

Result of Initial Screening (Low, Medium, High): Medium Risk

Prepared by:	Sita Ram Kandel
Designation and Office	Environmental Specialist
Date	2nd October 2021

Sub Project: Construction of WCSCSC Building, at Gaushala APO, Gaushala, Mahottari
Rapid Environmental Assessment (REA) Checklist

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the “without mitigation” case. The purpose is to identify potential impacts. Use the “remarks” section to discuss any anticipated mitigation measures.

Country/Project Title:

Sector Division: MOWCSC

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area adjacent to or within any of the following areas:			
Underground utilities		√	
Cultural heritage site		√	
Protected Area		√	
Wetland		√	
Mangrove		√	
Estuarine		√	
Buffer zone of protected area		√	
Special area for protecting biodiversity		√	
Bay		√	
B. **Potential Environmental Impacts Will the Project cause…**			
Encroachment on historical/cultural areas?		√	
Encroachment on precious ecology (e.g. sensitive or protected areas)?		√	
Impacts on the sustainability of associated sanitation and solid waste disposal systems?		√	Sanitation and solid waste problems will be localized due to construction waste and wastes generated from influx camp during construction. EMP provides proper mitigation measures.
Dislocation or involuntary resettlement of people?		√	
Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?		√	
Accident risks associated with increased vehicular traffic, leading to loss of life?		√	

Screening Questions	Yes	No	Remarks
Increased noise and air pollution resulting from increased traffic volume?	√		Deterioration in ambient air quality will be localized and temporarily during the construction phas. Mitigation measures like regular sprinkling of water during construction activities and covering construction materials.
Occupational and community health and safety risks?	√		Though the construction area is within the compound wall, the risk to service receiver of APO shall be mitigated by adopting measures as provided in EMP.
Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		√	Risk shall be mitigated with due orientation to workers for safe handleling of the tools and chemicals and by adopting other measures as provided in EMP
Generation of dust in sensitive areas during construction?		√	Demolition of old building and construction activities shall localized dust problems and shall be mitigated with proper measures provided in EMP.
Requirements for disposal of fill, excavation, and/or spoil materials?	√		Spoil disposal plan with proper mitigation measures will be prepared and complied
Noise and vibration due to blasting and other civil works?		√	
Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction?		√	No any underground structures is assumed to be designed.
Long-term impacts on local hydrology as a result of building hard surfaces in or near the building?		√	No any underground structures is assumed to be designed.
Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		√	Limited influx having stationed within the compound of APO will not cause any impact and however will manage with mitigation measures as provided in EMP.
Social conflicts if workers from other regions or countries are hired?		√	Limited influx having stationed within the compound of APO will not cause any impact.
Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation?		√	
Risks to community health and safety caused by management and disposal of waste?		√	

Screening Questions	Yes	No	Remarks
Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?		√	The construction area is within compound wall of APO and will check for direct access of the public. However the issues will be managed by adopting mitigation measures as provided in EMP

A Checklist for Preliminary Climate Risk Screening

Country/Project Title: Nepal: Strengthening Systems to protect and Uplift Women
Project- Construction of WCSCSC Building at Gaushala APO, Gaushala ward no-2, Mahottari
Division/Department: MOWCSC

Screening Questions		Score	Remarks[13]
Location and Design of project	Is sitting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?	0	Low risk of land slides
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?	0	Proper drainage to discharge surface run off shall be considered in design
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?	0	Issues are not foreseen
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s) ?	0	Issues are not foreseen
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?		Issues are not foreseen

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

[13] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response will be categorized as high-risk project.

Additional Information: A small car garage is to be dismantled beore construction of proposed WCSCSC.

Result of Initial Screening (Low, Medium, High): Medium Risk

Prepared by:	Sita Ram Kandel
Designation and Office	Environmental Specialist
Date:	2 October 2021

ANNEX1C: Sub Project: Construction of WCSCSC Building, at APO, Pokhariya

Rapid Environmental Assessment (REA) Checklist

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: **Nepal: Strengthening Systems to Protect and Uplift Women Project-**Construction of WCSCSC Building at Pokhariya APO, ward no-4, Pokhariya, Parsa

Sector Division: MOWCSC

Screening Questions	Yes	No	Remarks
C. Project Siting Is the project area adjacent to or within any of the following areas:			
Underground utilities		√	
Cultural heritage site		√	
Protected Area		√	
Wetland		√	

Screening Questions	Yes	No	Remarks
Mangrove		√	
Estuarine		√	
Buffer zone of protected area		√	
Special area for protecting biodiversity		√	
Bay		√	
D. **Potential Environmental Impacts Will the Project cause…**			
Encroachment on historical/cultural areas?		√	
Encroachment on precious ecology (e.g. sensitive or protected areas)?		√	
Impacts on the sustainability of associated sanitation and solid waste disposal systems?		√	Sanitation and solid waste problems will be localized due to construction waste and wastes generated from influx camp during construction. EMP provides proper mitigation measures.
Dislocation or involuntary resettlement of people?		√	
Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?		√	
Accident risks associated with increased vehicular traffic, leading to loss of life?		√	
Increased noise and air pollution resulting from increased traffic volume?	√		Deterioration in ambient air quality will be localized and temporarily during the construction phase. Mitigation measures like regular sprinkling of water during construction activities and covering construction materials.
Occupational and community health and safety risks?	√		Though the construction area is within the compound wall, the risk to service receiver of APO shall be mitigated by adopting measures as provided in EMP.
Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		√	Risk shall be mitigated with due orientation to workers for safe handleling of the tools and chemicals and by adopting other measures as provided in EMP
Generation of dust in sensitive areas during construction?		√	Demolition of old building and construction activities shall localized dust problems and shall be mitigated with proper measures provided in EMP

Screening Questions	Yes	No	Remarks
Requirements for disposal of fill, excavation, and/or spoil materials?	√		Spoil disposal plan with proper mitigation measures will be prepared and complied.
Noise and vibration due to blasting and other civil works?		√	
Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction?		√	No any underground structures is assumed to be designed
Long-term impacts on local hydrology as a result of building hard surfaces in or near the building?		√	No any underground structures is assumed to be designed
Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		√	Limited influx having stationed within the compound of APO will not cause any impact and however will manage with mitigation measures as provided in EMP
Social conflicts if workers from other regions or countries are hired?		√	Limited influx having stationed within the compound of APO will not cause any impact
Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation?		√	
Risks to community health and safety caused by management and disposal of waste?		√	
Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?		√	The construction area is within compound wall of APO and will check for direct access of the public. However, the issues will be managed by adopting mitigation measures as provided in EMP

A Checklist for Preliminary Climate Risk Screening

Country/Project Title: Nepal: Strengthening Systems to Protect and Uplift Women
Project- Construction of WCSCSC Building at Pokhariya APO, ward no-4, Parsa
Division/Department: MOWCSC

Screening Questions		Score	Remarks[14]
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?	0	Low risk of land slides

[14] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?	0	Proper drainage to discharge surface run off shall be considered in design
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?	0	Issues are not foreseen
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s) ?	0	Issues are not foreseen
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?		Issues are not foreseen

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response will be categorized as high risk project.

Additional Informtion: a badminton coart is to be dismantled beore construction of proposed WCSCSC.

Result of Initial Screening (Low, Medium, High): Medium Risk

Prepared by:	Sita Ram Kandel
Designation and Office	Environmental Specialist
Date:	15 Feb 2022

Sub Project: Construction of WCSCSC Building, at APO, Simara
Rapid Environmental Assessment (REA) Checklist

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:	**Nepal: Strengthening Systems to Protect and Uplift Women Project-**Construction of WCSCSC Building, APO, ward no-1, Jeet pursimara, Bara
Sector Division:	MOWCSC

Screening Questions	Yes	No	Remarks
E. Project Siting Is the project area adjacent to or within any of the following areas:			
Underground utilities		√	
Cultural heritage site		√	
Protected Area		√	
Wetland		√	
Mangrove		√	
Estuarine		√	
Buffer zone of protected area		√	
Special area for protecting biodiversity		√	
Bay		√	
F. **Potential Environmental Impacts Will the Project cause…**			
Encroachment on historical/cultural areas?		√	
Encroachment on precious ecology (e.g. sensitive or protected areas)?		√	

Screening Questions	Yes	No	Remarks
Impacts on the sustainability of associated sanitation and solid waste disposal systems?		√	Sanitation and solid waste problems will be localized due to construction waste and wastes generated from influx camp during construction. EMP provides proper mitigation measures.
Dislocation or involuntary resettlement of people?		√	
Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?		√	
Accident risks associated with increased vehicular traffic, leading to loss of life?		√	
Increased noise and air pollution resulting from increased traffic volume?	√		Deterioration in ambient air quality will be localized and temporarily during the construction phase Mitigation measures like regular sprinkling of water during construction activities and covering construction materials.
Occupational and community health and safety risks?	√		Though the construction area is within the compound wall, the risk to service receiver of APO shall be mitigated by adopting measures as provided in EMP.
Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		√	Risk shall be mitigated with due orientation to workers for safe handleling of the tools and chemicals and by adopting other measures as provided in EMP.
Generation of dust in sensitive areas during construction?		√	Demolition of old building and construction activities shall localized dust problems and shall be mitigated with proper measures provided in EMP
Requirements for disposal of fill, excavation, and/or spoil materials?	√		Spoil disposal plan with proper mitigation measures will be prepared and complied
Noise and vibration due to blasting and other civil works?		√	
Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction?		√	No any underground structures is assumed to be designed
Long-term impacts on local hydrology as a result of building hard surfaces in or near the building?		√	No any underground structures is assumed to be designed

Screening Questions	Yes	No	Remarks
Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		√	Limited influx having stationed within the compound of APO will not cause any impact and however will manage with mitigation measures as provided in EMP
Social conflicts if workers from other regions or countries are hired?		√	Limited influx having stationed within the compound of APO will not cause any impact
Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation?		√	
Risks to community health and safety caused by management and disposal of waste?		√	
Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?		√	The construction area is within compound wall of APO and will check for direct access of the public. However the issues will be managed by adopting mitigation measures as provided in EMP

A Checklist for Preliminary Climate Risk Screening

Country/Project Title: Nepal: Strengthening Systems to protect and Uplift Women
Project- Construction of APO-WCSCSC Building, APO, and Jitpursimara ward no-1, Bara

Division/Department: MOWCSC

Screening Questions		Score	Remarks[15]
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?	0	Low risk of land slides
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?	0	Proper drainage to discharger surface run off shall be considered in design
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?	0	Issues are not foreseen

[15] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s) ?	0	Issues are not foreseen
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?		Issues are not foreseen

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response will be categorized as high risk project.

Additional Observations: an unused and old APO building strucures is to be dismantled beore construction of proposed WCSCSC.

Result of Initial Screening (Low, Medium, High): Medium Risk

Prepared by:	Sita Ram Kandel
Designation and Office	Environmental Specialist
Date:	15 Feb 2022

ANNEX1D: Sub Project: Construction of Suryavinayak National Rehabilitation Center, Bhaktapur

Rapid Environmental Assessment (REA) Checklist

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the “without mitigation” case. The purpose is to identify potential impacts. Use the “remarks” section to discuss any anticipated mitigation measures.

Country/Project Title:	**Nepal: Strengthening Systems to Protect and Uplift Women Project-**Construction of Suryavinayak National rehabilitation Center, Suryavinayak ward no-7, Bhaktapur
Sector Division:	MOWCSC

Nepal: Strengthening Systems to Protect and Uplift Women Project- Construction of APO-WCSCSC Building

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area adjacent to or within any of the following areas:			
Underground utilities		√	
Cultural heritage site		√	
Protected Area		√	
Wetland		√	
Mangrove		√	
Estuarine		√	
Buffer zone of protected area		√	It is about 100 m away from the National zoological garden
Special area for protecting biodiversity		√	
Bay		√	
B. Potential Environmental Impacts Will the Project cause……..			
Encroachment on historical/cultural areas?		√	
Encroachment on precious ecology (e.g. sensitive or protected areas)?		√	
Impacts on the sustainability of associated sanitation and solid waste disposal systems?		√	Sanitation and solid waste problems will be localized due to construction waste and wastes generated from influx camp during construction. EMP provides proper mitigation measures.
Dislocation or involuntary resettlement of people?		√	
Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?		√	
Accident risks associated with increased vehicular traffic, leading to loss of life?		√	

Screening Questions	Yes	No	Remarks
Increased noise and air pollution resulting from increased traffic volume?	√		Deterioration in ambient air quality will be localized and temporarily during the construction phase Mitigation measures like; regular sprinkling water during construction activities and covering construction materials.
Occupational and community health and safety risks?	√		Direct access of the public is expected limited and however risk to service receiver shall be mitigated by adopting measures as provided in EMP.
Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		√	Risk shall be mitigated with due orientation to workers for safe handleling of the tools and chemicals and by adopting other measures as provided in IMP
Generation of dust in sensitive areas during construction?		√	Construction activities may shortly affect local ambient air quality especially during dry season and shall be mitigated with proper measures provided in IMP
Requirements for disposal of fill, excavation, and/or spoil materials?		√	
Noise and vibration due to blasting and other civil works?		√	
Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction?		√	No any underground structures is assumed to be designed
Long-term impacts on local hydrology as a result of building hard surfaces in or near the building?		√	No any underground structures is assumed to be designed
Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		√	Limited influx is expected with proper facilities inside the camp and mitigation measures as provided in EMP is complied
Social conflicts if workers from other regions or countries are hired?		√	Mitigation measures are as provided in EMP is complied
Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation?		√	
Risks to community health and safety caused by management and disposal of waste?		√	

Screening Questions	Yes	No	Remarks
Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?		√	The construction area will be protected by hard barricade and compound will be designed for long term for sake of permitted access of the public

A Checklist for Preliminary Climate Risk Screening

Country/Project Title: Strengthening Systems to Protect and Uplift Women Project- Construction of Suryavinayak National rehabilitation Center, Suryavinayak- wards no-7, Bhaktapur

Division/Department: MOWCSC

Screening Questions		Score	Remarks[16]
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?	0	Low risk of floods
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?	0	Project area is low land design shall consider inundationr isk
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?	0	Issues are not foreseen
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?	0	Issues are not foreseen
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?	0	Issues are not foreseen

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more

[16] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

(which include providing a score of 1 in all responses) or a 2 in any single response will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): Medium Risk
Other Comments: Construction area is of public land and shall be designed avoiding loss of trees.

Prepared by:	Sita Ram Kandel
Designation and Office	Environmental Specialist
Date:	3 March 2022

ANNEX 2: RELEVANT ENVIRONMENTAL QUALITY STANDARDS

1- Ambient Air Quality Standards

Parameter	Averaging Period	Nepal's Ambient Air Quality Standard ($\mu g/m^3$) *	WHO Air Quality Guidelines ($\mu g/m^3$) **	
			Global Update 2005	Second Edition ^ 2000
TSP	Annual	-	-	-
	24-hour	230	-	-
PM_{10}	Annual	-	20	-
	24-hour	120	50	-
$PM_{2.5}$	1-year	-	10	-
	24-hour	-	25	-
SO_2	Annual	50	-	
	24-hour	70	20	-
	10-minute	-	500	-
NO_2	1-year	40	40	-
	24-hour	80	-	-
	1-hour	-	200	-
CO	8-hour	10,000	-	10,000
	15-minute	100,000	-	100,000
Pb	1-year	0.5	-	0.5
Benzene	1-year	20	-	-

* National Ambient Air Quality Standards for Nepal, 2003. Obtained from Environment Statistics of Nepal 2011, Government of Nepal, National Planning Commission Secretariat, Central Bureau of Statistics, Kathmandu, Nepal.

** Environmental, Health and Safety General Guidelines, 2007. International Finance Corporation, World Bank Group.

^ Air Quality Guidelines for Europe, Second Edition, 2000. WHO Regional Office for Europe, Copenhagen.

Parameter that either has no national standard value for 24-hour observation or with WHO guideline value for 24-hour observation as more stringent than that specified in the national standards.

2- Noise Level Standards

Source:*Environmental, Health and Safety General Guidelines, 2007, International Finance*

Receptor / Source	National Noise Standard Guidelines, 2012 (dB)		WHO Guideline Values for Noise Levels Measured Out of Doors * (One Hour L_{Aeq} in dBA)	
	Day	Night	07:00 - 22:00	22:00 - 07:00
Industrial area	75	70	70	70
Commercial area	65	55		
Rural residential area	45	40	55	45
Urban residential area	55	50		
Mixed residential area	63	55		
Quiet area	50	40	-	-
Water pump	65		-	
Diesel generator	90		-	

* Guidelines for Community Noise, WHO, 1999.

Corporation, World Bank Group.

3- National Drinking Water Quality Standards, 2006

Group	National Drinking Water Quality Standards, 2006			WHO Guidelines for Drinking-water Quality, 4th Edition, 2011*
	Parameter	Unit	Max. Concentration Limits	
Physical	Turbidity	NTU	5 (10) **	-
	pH		6.5 - 8.5	none
	Color	TCU	5 (15)	none
	Taste & Odor		Would not be objectionable	-
	TDS	mg/l	1000	-
	Electrical Conductivity	µc/cm	1500	-
	Iron	mg/l	0.3 (3)	-
	Manganese	mg/l	0.2	-
	Arsenic	mg/l	0.05	0.01
	Cadmium	mg/l	0.003	0.003
	Chromium	mg/l	0.05	0.05
	Cyanide	mg/l	0.07	none
	Fluoride	mg/l	0.5 - 1.5 ^	1.5
	Lead	mg/l	0.01	0.01
	Ammonia	mg/l	1.5	none established
Chemical	Chloride	mg/l	250	none established
	Sulphate	mg/l	250	none
	Nitrate	mg/l	50	50
	Copper	mg/l	1	2
	Total Hardness	mg/l	500	-
	Calcium	mg/l	200	-
	Zinc	mg/l	3	none established
	Mercury	mg/l	0.001	0.006
	Aluminum	mg/l	0.2	none established
	Residual Chlorine	mg/l	0.1 - 0.2	5 ^^
Micro Germs	E-coli	MPN/100ml	0	must not be detectable in any 100 ml sample
	Total Coliform	MPN/100ml	0 in 95% of samples taken	

* Health-based guideline values

** Figures in parenthesis are upper range of the standards recommended.

^ These standards indicate the maximum and minimum limits.

^^ From WHO (2003) Chlorine in Drinking-water, which states that this value is conservative.

Parameter with WHO guideline value as more stringent than natilonal standard value.

National Drinking Water Quality Standards was obtained from the Environment Statistics of Nepal 2011, Government of Nepal, National Planning Commission Secretariat, Central Bureau of Statistics, Kathmandu, Nepal.

ANNEX 3: SPOIL MANAGEMENT PLAN

Spoil Management Plan (SMP)

Purpose and application: SMP is to describe how the project will manage the spoil and construction waste generated and reuse related to design and construction works. This is an integral part of EMP. The objective of SMP is to reuse of spoil from works in accordance with the spoil management hierarchy outlined in this document.

Objectives of SMP: The objectives of preparing SMP are:

- To minimize spoil generation where possible
- Maximize beneficial reuse of spoil from construction works in accordance with spoil management hierarchy
- Mange onsite spoil handling to minimize environmental impacts on resident and other receivers
- Minimize any further site contamination of land, water, soil
- Managethetransportationofspoilwithconsiderationoftrafficimpactsandtransportrelated emissions

Outline of the SMP:

Section 1: Introduction of SMP
Section 2: Legal and other requirements
Section 3: Roles and responsibilities
Section 4: Identification and assessment of spoil aspects and impacts
Section 5: Spoil volumes, characteristics and minimization
Section 6: Spoil reuses opportunities, identification and assessment
Section 7: On site spoil management approach
Section 8: Spoil transportation methodology
Section 9: Monitoring, Reporting, Review, and Improvements

Aspects and Potential Impacts

The key aspects of potential impacts in relation to SMP are listed in table below

Aspects	Potential Impacts
Air Quality	Potential for high winds generating airborne dust from the stock piles
Sedimentation	Potential for sediment laden site runoff from spoil stockpiles and potential for spillage of spoil from truck on roads
Surface and Groundwater	Contamination of water (surface and ground water)
Noise	Associated with spoil handling and haulage and storage
Land Use	Potential for spoil to be transported to a receivable site that doesn't have permission for storage/disposal
Design specifications	Limitations on opportunities to minimize spoil generation
Sustainability	Limited sites for storage, reuse opportunities

Spoil volumes, Characteristics and Minimization

Spoil volume calculations: Estimate the volumes of spoils produced from each of the construction sites.

Characterization of spoil: Based on the type of spoil; characterization is done (sand stone, mix materials, reusable materials

Adopt Spoil Reduce, Reuse Opportunities: An overview of the assessment methodology to be used is mentioned below.

- Consideration of likely spoil characteristics
- Identification of possible reuse sites
- Screening of possible reuse opportunities

Identification of possible safe disposal sites for spoil: Those spoils which can't be reuse shall be properly disposed in designated areas, such disposal areas should be identified in project locations. Such disposal areas should be safe from environmental aspects and there should be any legal and resettlement related issues. Such areas need to be identified and prior cliental approval should be obtained to use it as spoil disposal area. The local administration must be consulted and if required permission should be obtained from them.

Based on the above, the contractor will prepare a SMP as an integral part of EMP and submit it to UNOPS for their review and approval.

SUMMARY OF KEY ISSUES AND REMEDIAL ACTIONS
Section deals with summary of follow up time-bound actions to be taken within a set timeframe.

Appendixes
- Photos
- Summary of consultations
- Copies of environmental clearances and permits
- Sample of environmental site inspection Report
- Others

ANNEX 4: SAMPLE GRIEVANCE REDRESS FORM

(To be available in Nepalese and English)

The_____Project welcomes complaints, suggestions, queries and comments regarding project implementation. We encourage persons with grievance to provide their name and contact information to enables us to get in touch with you for clarification and feedback. Should you choose to includeyourpersonaldetailsbutwantthatinformationremainconfidential,pleaseinformusbywriting/typing*(CONFIDENTIAL)*aboveyourname.Thankyou.

Date	Place of registration			
Contact Information/personal details				
Name	Gender	*Male *Female	Age	
Home Address				
Place				
Phone No.				
E-mail				
Complaint/Suggestion/Comment/Question Please provide the details (who, what, where and how) of your grievance below: If includes as attachment/note/letter, please tick here:				
How do you want us to reach you for feedback or update on your comment/grievance?				

FOR OFFICIAL USE ONLY

Registered by: (Names of official registering grievance)	
Mode of communication: Note/Letter E-mail Verbal/Telephonic	
Reviewed by: (Names/positions of official(s) reviewing grievance)	
Action Taken:	
Whether Action Taken Disclosed:	Yes No
Means of Disclosure:	

ANNEX 5: SAMPLE SEMI-ANNUAL ENVIRONMENTAL MONITORING REPORT TEMPLATE

This template must be included as an appendix in the EIA/IEE that will be prepared for the project. It can be adapted to the specific project as necessary.

INTRODUCTION

- Overall project description and objectives
- Description of sub-projects
- Environmental category of the sub-projects
- Details of site personnel and/or consultants responsible for environmental monitoring
- Overall project and sub-project progress and status

	Sub-Project Name	Status of Sub-Project				List of Works	Progress of Works
		Design	Pre-Construction	Construction	Operational		

COMPLIANCE STATUS WITH NATIONAL/STATE/LOCAL STATUTORY ENVIRONMENTAL REQUIREMENTS

	Sub-Project Name	Statutory Environmental Requirements	Status of Compliance	Action Required

COMPLIANCE STATUS WITH ENVIRONMENTAL LOAN COVENANTS

No. (List schedule and paragraph number of Loan Agreement)	Covenant	Status of Compliance	Action Required

COMPLIANCE STATUS WITH THE ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

- Provide the monitoring results as per the parameters outlined in the EMP. Append supporting documents where applicable, including Environmental Site Inspection Reports.
- There should be Reporting on the following items which can be incorporated in the checklist of routine Environmental Site Inspection Report followed with a summary in the semi-annual Report send to ADB. Visual assessment and review of relevant site documentation during routine site inspection needs to note and record the following:
- What are the dust suppression techniques followed for site and if any dust was noted to escape the site boundaries;
- Adequacy of type of erosion and sediment control measures installed on site, condition of erosion and sediment control measures including if these were intact following heavy rain;
- Are their designated areas for concrete works, and refueling;
- Are their spill kits on site and if there are site procedure for handling emergencies;
- How are the stockpiles being managed;
- How is solid and liquid waste being handled on site;
- Review of the complaint management system;
- Checking if there are any activities being under taken out of working hours and how that is being managed.

Summary Monitoring Table

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Design Phase						
Pre-Construction Phase						
Construction Phase						
Operational Phase						

Overall Compliance with CEMP/EMP

No.	Sub-Project Name	EMP/CEMP Part of Contract Documents (Y/N)	CEMP/EMP Being Implemented (Y/N)	Status of Implementation (Excellent/ Satisfactory/ Partially Satisfactory/ Below Satisfactory)	Action Proposed & Additional Measures Required

APPROACH AND METHODOLOGY FOR ENVIRONMENTAL MONITORING OF THE PROJECT

Brief description on the approach and methodology used for environmental monitoring of each sub- project

MONITORING OF ENVIRONMENTAL IMPACTS ON PROJECT SURROUNDINGS (AMBIENT AIR, WATER QUALITY AND NOISE LEVELS)

- Brief discussion on the basis for monitoring
- Indicate type and location of environmental parameters to be monitored
- Indicate the method of monitoring and equipment to be used
- Provide monitoring results and an analysis of results in relation to baseline data and statutory requirements

As a minimum the results should be presented as per the tables below.

Air Quality Results

Site No.	Date of Testing	Site Location	Parameters (Government Standards)		
			PM10 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)

Site No.	Date of Testing	Site Location	Parameters (Monitoring Results)		
			PM10 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)

Water Quality Results

Site	Date of		Parameters (Government Standards)

No.	Sampli ng	Site Location	pH	Conductivity (µS/cm)	BOD (mg/L)	TSS (mg/L	TN (mg/L)	TP (mg/L)

Site No.	Date of Sampli Ng	Site Location	Parameters (Government Standards)					
			pH	Conductivity (µS/cm)	BOD (mg/L)	TSS (mg/L	TN (mg/L)	TP (mg/L)

Noise Quality Results

Site No.	Date of Testing	Site Location	LA_{eq} (dBA) (Government Standard)	
			Day Time	Night Time

Site No.	Date of Testing	Site Location	LA_{eq} (dBA) (Government Standard)	
			Day Time	Night Time

ANNEX 6: SAMPLE ENVIRONMENTAL SITE INSPECTION REPORT

Project Name Contract Number

NAME: _____
DATE:
TITLE: _____ GROUP:
DMA:
LOCATION: _____
_____

WEATHER CONDITION:
_____
_____

INITIAL SITE CONDITION:
_____

CONCLUDING SITE CONDITION:

Satisfactory _____ Unsatisfactory__Incident_ Unresolved _____ Resolved_____

INCIDENT:
Nature of incident:
_____
_____

Intervention Steps:
_____
_____

Incident Issues

Resolution

Project Activity Stage	Survey	
	Design	
	Implementation	
	Pre-Commissioning	
	Guarantee Period	

Inspection

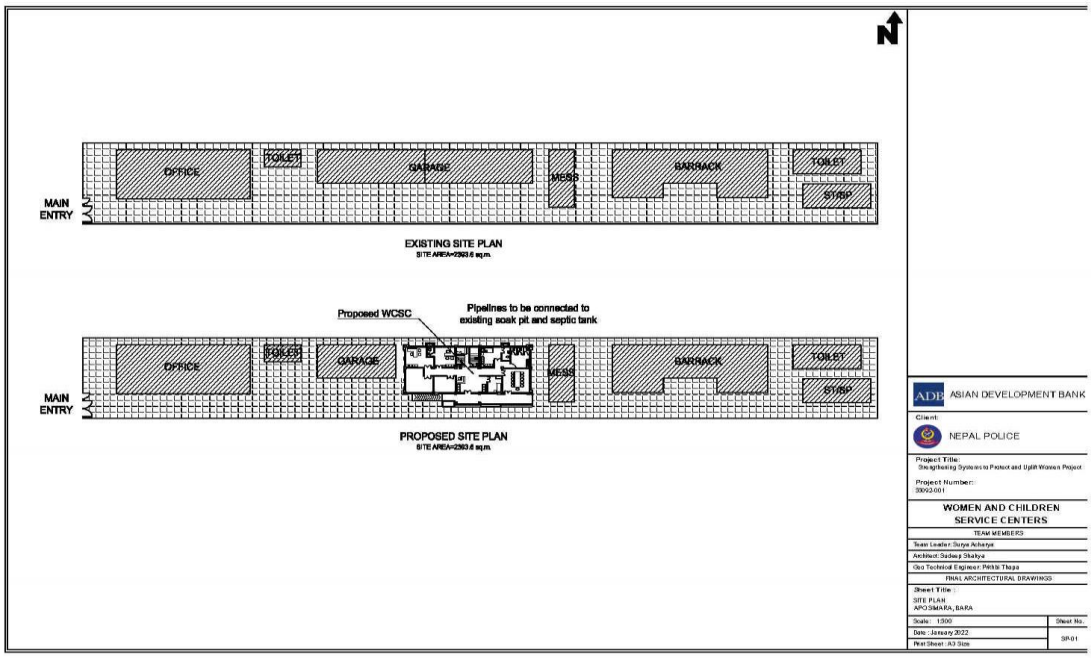
Emissions			Waste Minimization		
Air Quality			Reuse and Recycling		
Noise pollution			Dust and Litter Control		
Hazardous Substances			Trees and Vegetation		
Site Restored to Original Condition	Yes				
	No				

Signature
_____

Sign off
_____

Name **Name**
Position **Position**

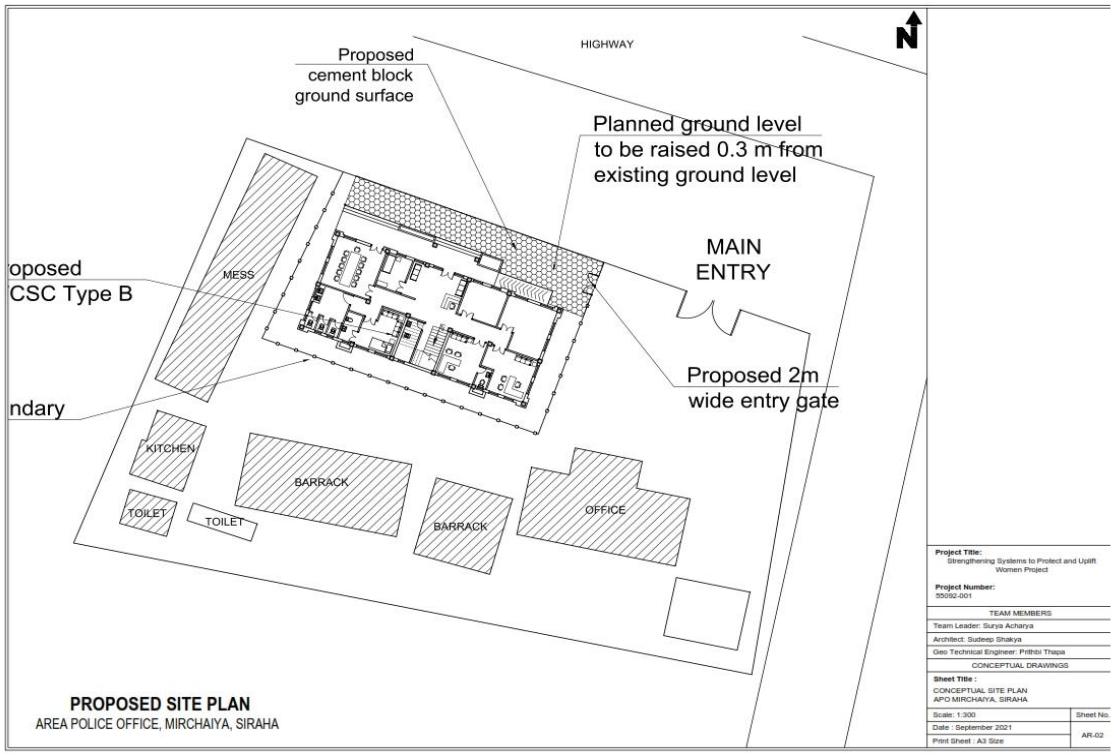
ANNEX 7: SUB PROJECT BUILDING LAYOUT PLAN



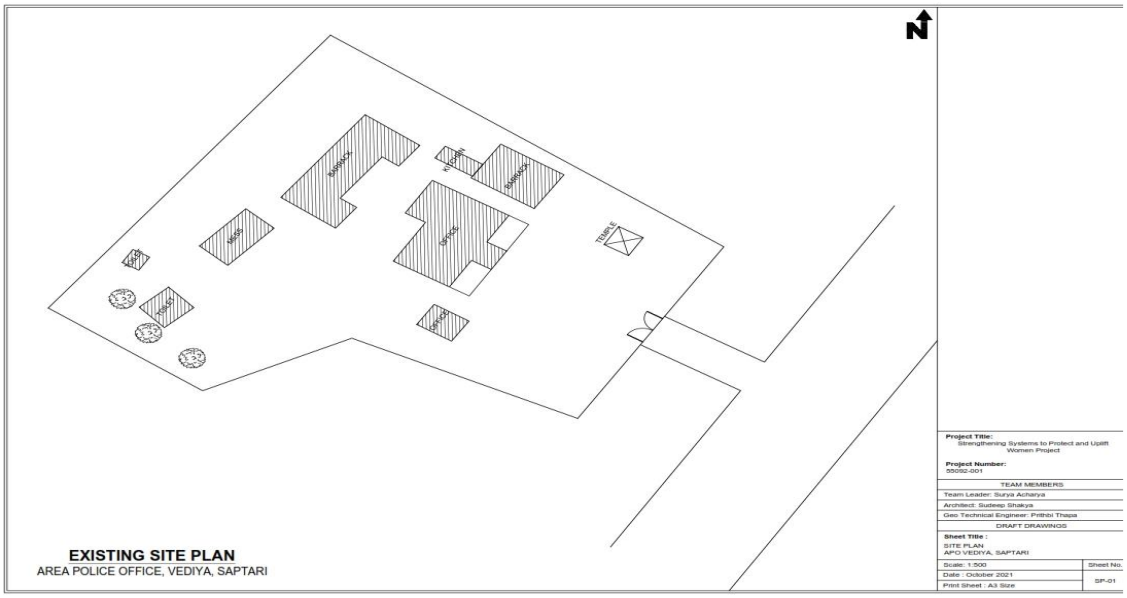
ANNEX-8: MINUTES OF STAKEHOLDER CONSULTATIONS

Subproject: WCSCSC at Bhediya APO, Saptari

1. WCSCSC site APO Bhediya Saptari – Proposed master plan

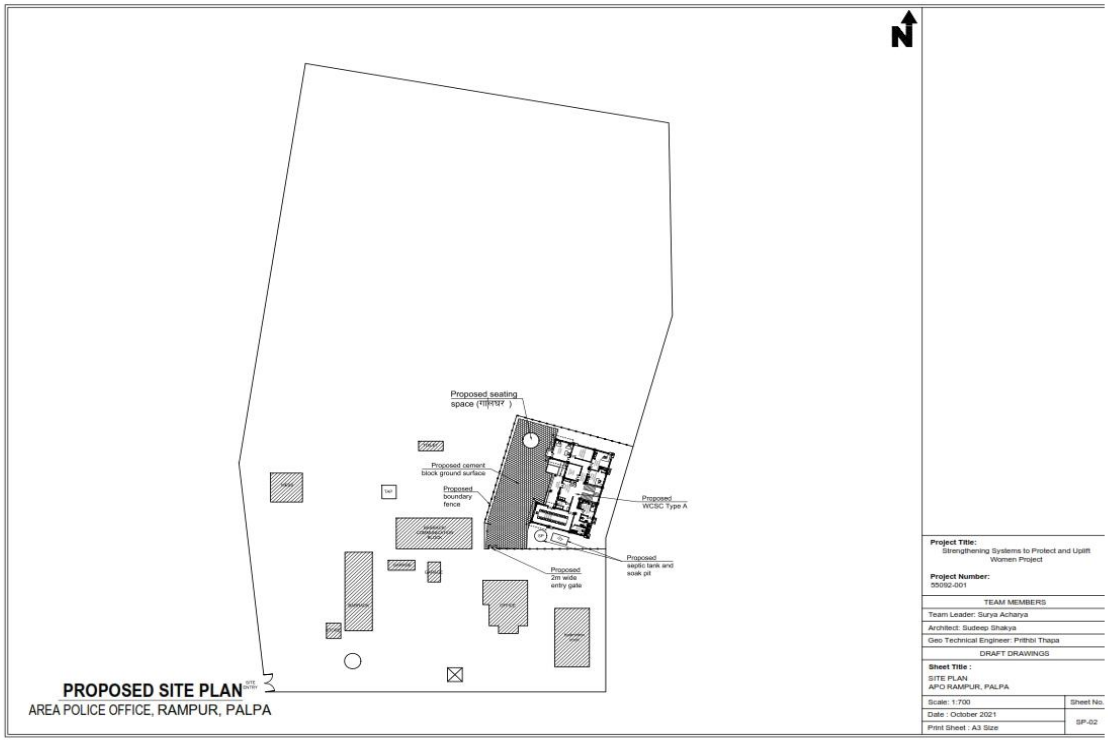


2. WCSCCSC site APO Bhediya Saptari – Existing site plan

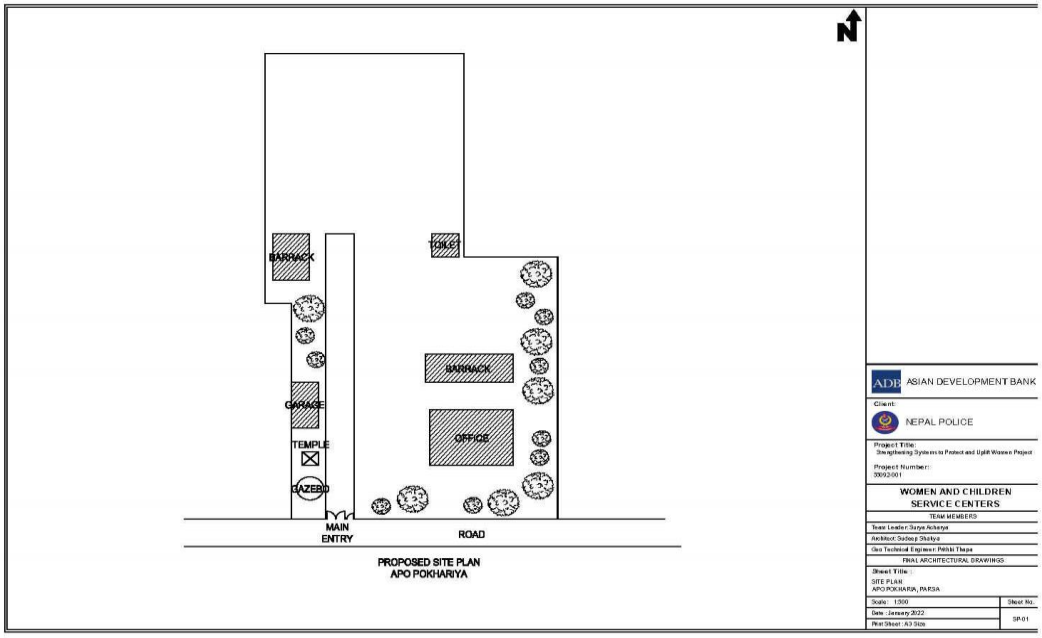


Subproject: WCSCSC at Gaushala APO, Mahottari

1. WCSCSC Site APO Gousala Mohattarai – Proposed Master Plan

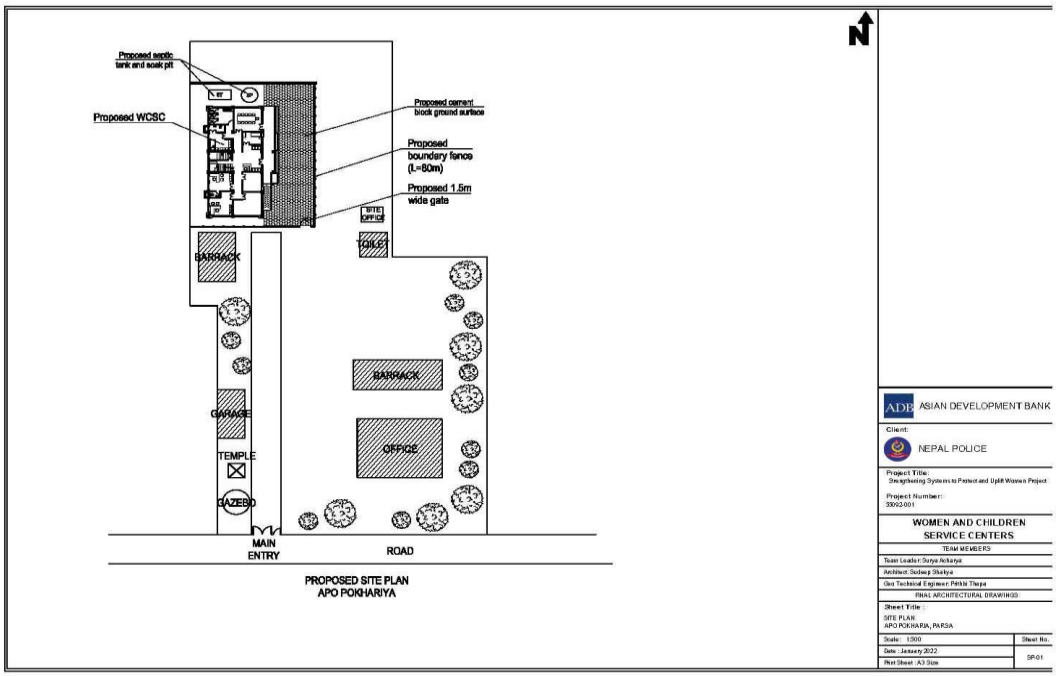


2. WCSCSC site APO Gousala Mohattarai- Existing site plan

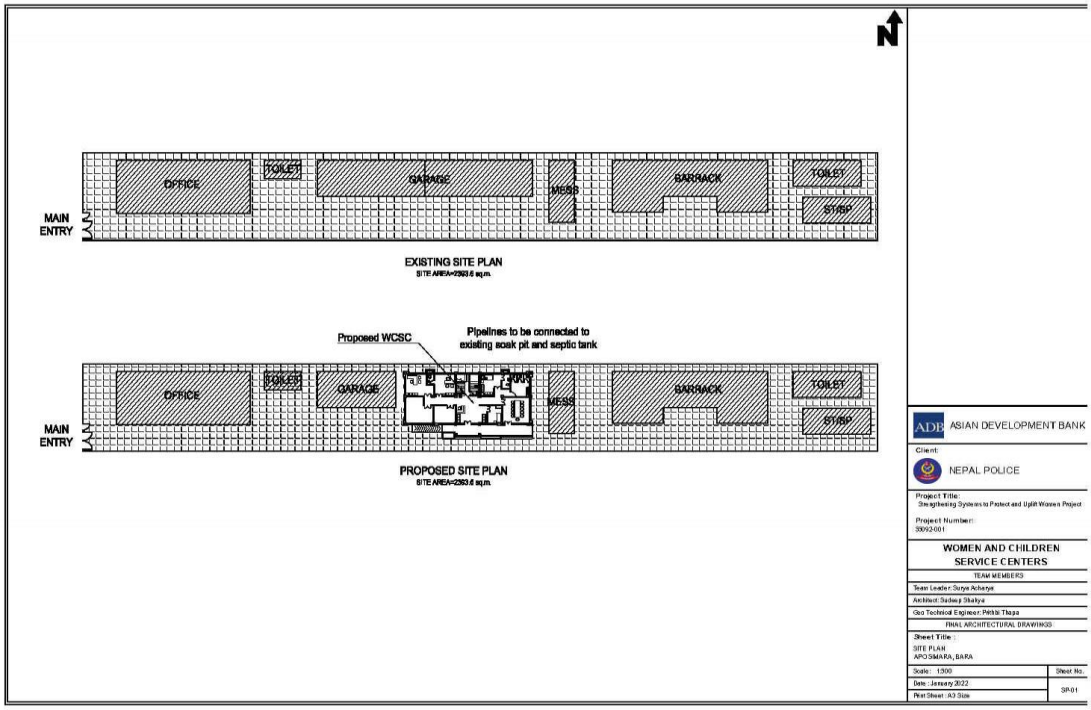


Subproject: WCSCSC at Pokhariya APO, Parsa

1. Proposed master plan of Pokhariya WCSCSC



2. Subproject at Jeetpursimara APO



Sub Project: Suryavinayak Rehabilitation Center at Bhaktapur

Sub Project: WCSCSC at Bhediya APO, Saptari

Still to get from technical team……..

MINUTES OF STAKEHOLDER

आज मिति २०६८।०६।१७ गतेका दिन यस डुँवाको प्रहरी कार्यालय ओडिया दुपटीमा यस कार्यालयको कम्पाउण्ड भित्र प्रस्तावित महिला तथा बालबालिका सेवा केन्द्र निर्माणको सन्दर्भमा एशियाली विकास बैंकबाट आउनु भएका विज्ञ टोली देहाय बमोजिमको उपस्थितिमा निम्न विषय वस्तु उपमा छलफल गरियो।

उपस्थित

नि जल्ली दुलङगा नं.पा. वा.नं. १ का वडा अध्यक्ष विष्णु बहादुर थापा ९८४२८४३९२१

नि जल्ली दुलङगा नं.पा. वा.नं. ७ टीटीया वडे वडा २१ उपेन्द्र प्रसाद चौधरी ९८१४६१९३९१६

डुँवाका प्रहरी कार्यालय ओडिया दुपटी प्रनाउनि मोहन राई शर्मा ९८५२८१०५०६

डुँवाका प्रहरी कार्यालय ओडिया जल्ली प्रना डुँवरा लिम्बु ९८१६३८२०६३

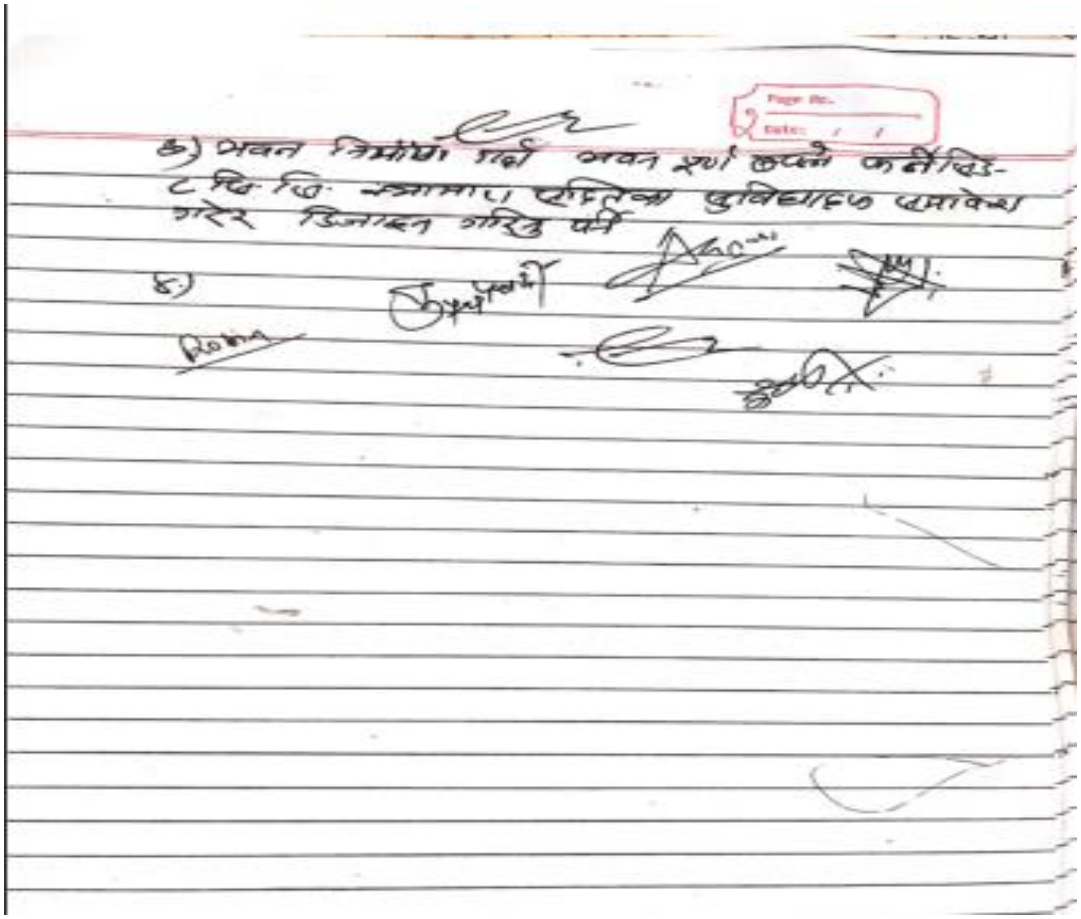
एशियाली विकास बैंकका परामर्शदाता रविन अधिकारी ९८५१२०१२५०

हे.रु. खिलाधर खेती ९८५१०२२६८८

छलफल तथा निर्णयहरु

१.) प्रस्तावित भवन निर्माण क्रममा न्यूनतम सामाजिक र वातावरणीय प्रभाव पर्ने देखिएको तापनि भवन निर्माणको क्रममा त्यसलाई अझ न्यूनिकरण गर्दै निर्माण कार्य अघि बढाउने।

२.) प्रस्तावित भवन स्थलमा एउटा पुरानो छानो भएको प्रयोगमा नभइ रहेको भवन रहेको हुँदा त्यसलाई हटाउनु पर्ने निर्णय गरियो।



A. English Translation of Consultation Meeting

1. The following discussion was held on 26 September 2021 in the presence of ADB consultants at Area Police Office, Bhediya regarding the construction of Women, Children and Senior Citizen Service Center.

XII. Discussion and Decisions

(i) It is expected that this project will have inn significant social and environmental impact. Attention will be taken to minimize social and environmental impact during construction.

(ii) It is decided and agreed to demolish an old non-used structure from the construction area bbefore construction work

(iii) The building should be fully equipped and have other facilities like CC camera etc.

आज मिति २०६८/०६/०६ गतेका दिन यस इलाका प्रहरी कार्यालय गौशाला महोत्तरीमा यस कार्यालयको कम्पाउण्ड भित्र प्रस्तावित महिला तथा बालबालिका सेवा केन्द्र निर्माणको सन्दर्भमा एशियाली विकास बैंकबाट आउनु भएका मिशन टोली संग देहाय बमोजिमको उपस्थितिमा निम्न विषयवस्तुहरुमा छल-फल गरियो ।

उपस्थिति :-

श्री महोत्तरी गौशाला न.पा. वडा नं. ५ का वडाध्यक्ष धर्मेन्द्र राय

इलाका प्रहरी कार्यालय गौशालाका प्रमुख प्र.नि. विष्णु प्रदिप बस्याल

ऐ. गौशाला न.पा. वडा नं. ५ बस्ने वर्ष ५३ का नन्दलाल चौधरी

इ.प्र.का. गौशालामा कार्यरत प्र.स.नि. शुभसिंह कार्की

एशियाली विकास बैंकका परामर्शदाता रबिन भण्डारी ।

ऐ. बैंकका परामर्शदाता शिवराज कडेल ।

ऐ. बैंकका परामर्शदाता पृथ्वीमान थापा ।

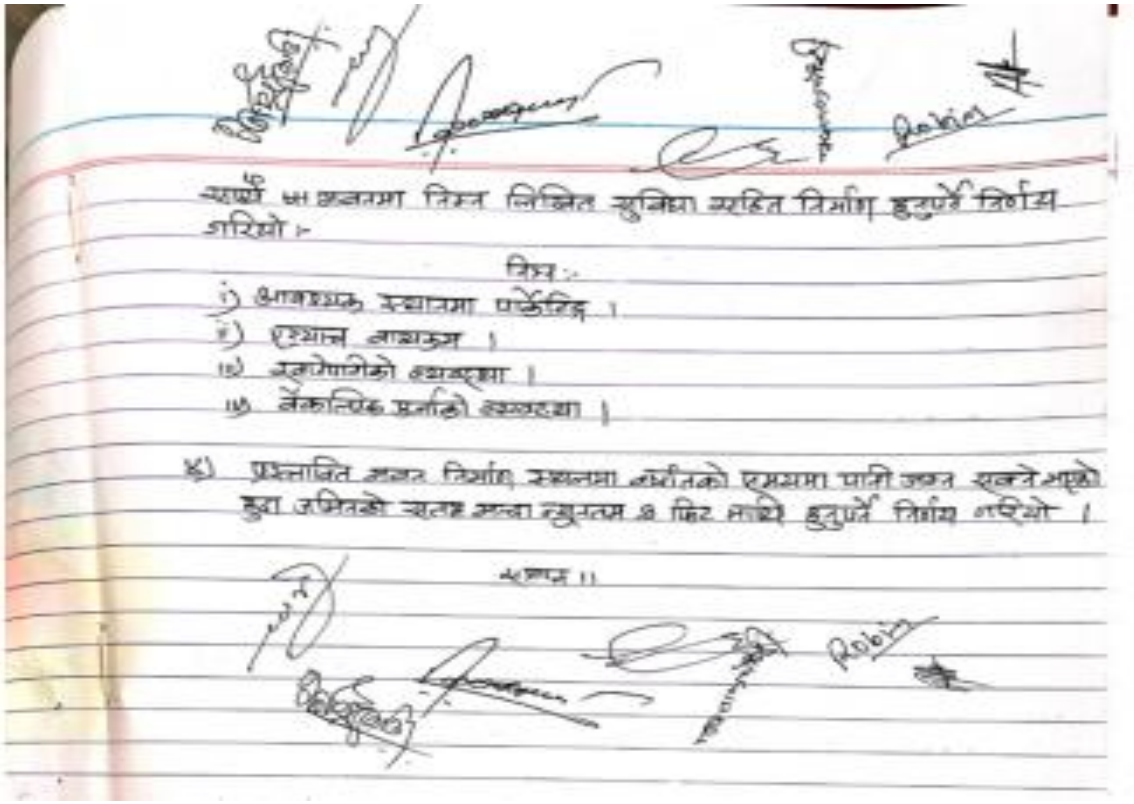
छलफल तथा निर्णयहरु :-

१) प्रस्तावित भवन निर्माण स्थलमा ग्यारेज बनेको भन्ने सबै भाग खाली रहेकोले कुनैपनि प्रकारको सामाजिक र वातावरणीय प्रभाव पर्ने नदेखिएको हुँदा उक्त भवन निर्माण गर्न उपयुक्त रहेको निर्णय गरियो ।

२) प्रस्तावित भवनको दक्षिण तर्फ मोटर ग्यारेज रहेकोले डिजाइन गर्दा सकभर यो ग्यारेज जोगाउने र डिजाइनमा उक्त ग्यारेज जोगाउन नसकिएमा यो ग्यारेज अन्यत्र स्थानान्तरण गर्ने निर्णय गरियो ।

३) प्रस्तावित भवनमा सुरक्षाका सबै उपायहरु अवलम्बन गरी डिजाइन गर्नुपर्ने

Robin



2. English Translation of Consultation Meeting

2. The following discussion was held on 25 September 2021 in the presence of ADB Consultants at Area Police Office, Gaushala regarding the construction of Women and Child Service Center.

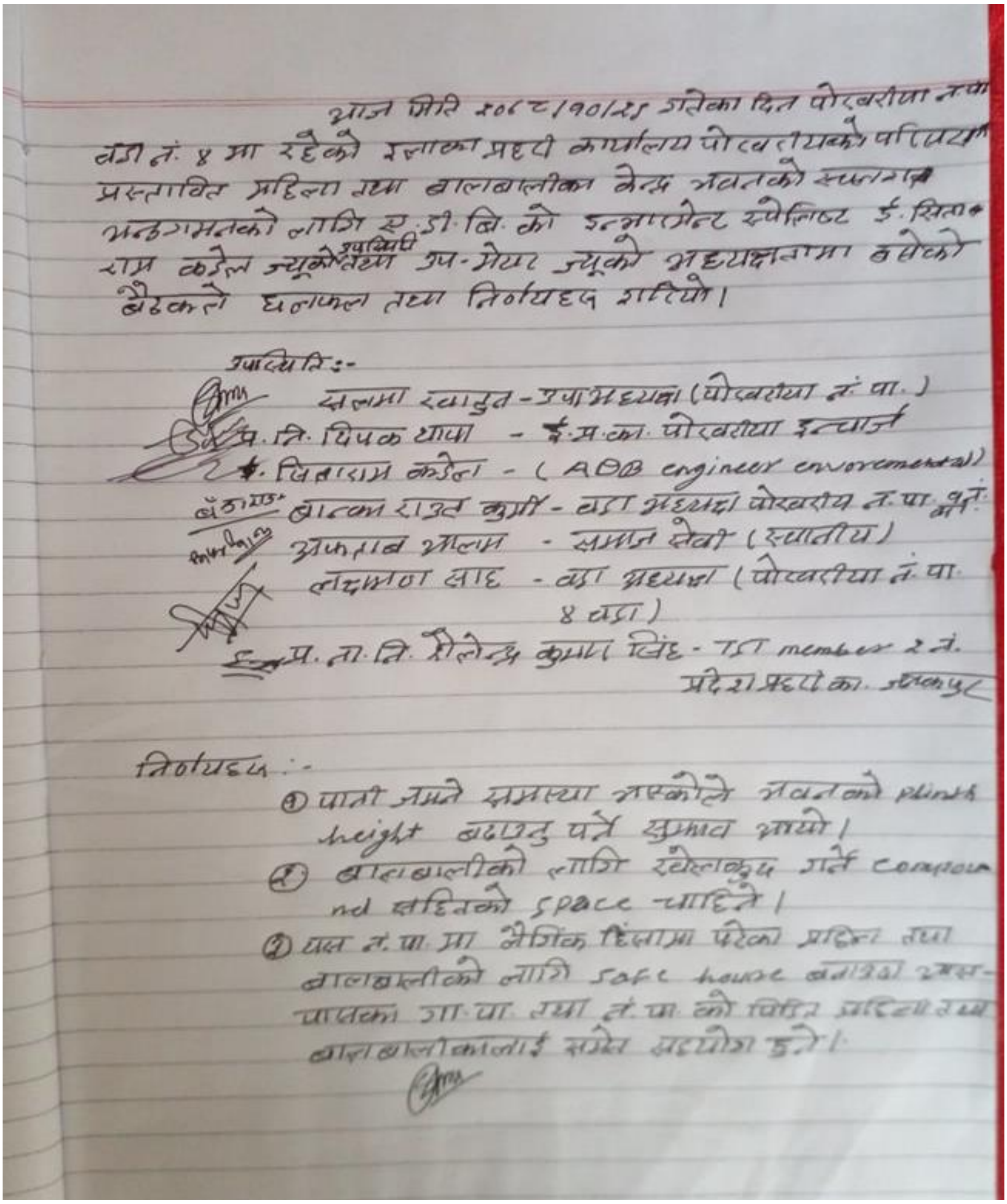
XIII. Discussion and Decisions

(i) Except a motor garage other construction area is empty, so there will be no social and environmental impact due this project.

(ii) Efforts should be made to protect the garage in engineering design and if this is not possible it will be relocated.

(iii) Strong security measures should apply in design and following facilities should be included: parketing, attached bathroom, management of drinking water, alternative energy

(iv) It is possible for the construction area to be flooded during the rainy season, so the height of the structure should be at least 3 feet above the ground level.


आज मिति २०७८/१०/२९ गतेका दिन पोखरीया न.पा. वडा नं. ४ मा रहेको इलाका प्रहरी कार्यालय पोखरीयाको परिसरमा प्रस्तावित महिला तथा बालबालीका केन्द्र भवनको स्थलगत अनुगमनको लागि ए.डी.बि. को इन्भाइरोमेन्ट स्पेशलिष्ट ई. सिताराम कडेल ज्यूको उपस्थिति उप-मेयर ज्यूको अध्यक्षतामा बसेको बैठकले छलफल तथा निर्णयहरु गरियो।

उपस्थिति:-

सलमा खातुन - उपाध्यक्ष (पोखरीया न.पा.)
प्र.नि. दिपक थापा - ई.प्र.का. पोखरीया इन्चार्ज
ई. सिताराम कडेल - (ADB engineer environmental)
बालकृष्ण राउत कुर्मी - वडा अध्यक्ष पोखरीया न.पा. ७ नं.
अफताब आलम - समाज सेवी (स्थानीय)
लक्ष्मण साह - वडा अध्यक्ष (पोखरीया न.पा. ४ वडा)
प्र.ना.नि. शैलेन्द्र कुमार सिंह - TST member २ नं. प्रदेश प्रहरी का. जनकपुर

निर्णयहरु:-

① पानी जम्ने समस्या भएकोले भवनको plinth height बढाउनु पर्ने सुझाव आयो।
② बालबालीको लागि खेलकुद गर्ने compound सहितको space चाहिने।
③ यस न.पा. मा लैंगिक हिंसामा परेका महिला तथा बालबालीको लागि safe house बनाइदा आस-पासका गा.पा. तथा न.पा. को पिडित महिला तथा बालबालीकालाई समेत सहयोग हुने।

3. English Translation of Consultation Meeting

3. The following discussion was held on 12 February 2022 in the presence of ADB Consultants at Area Police Office, Gaushala regarding the construction of Women and Child Service Center.

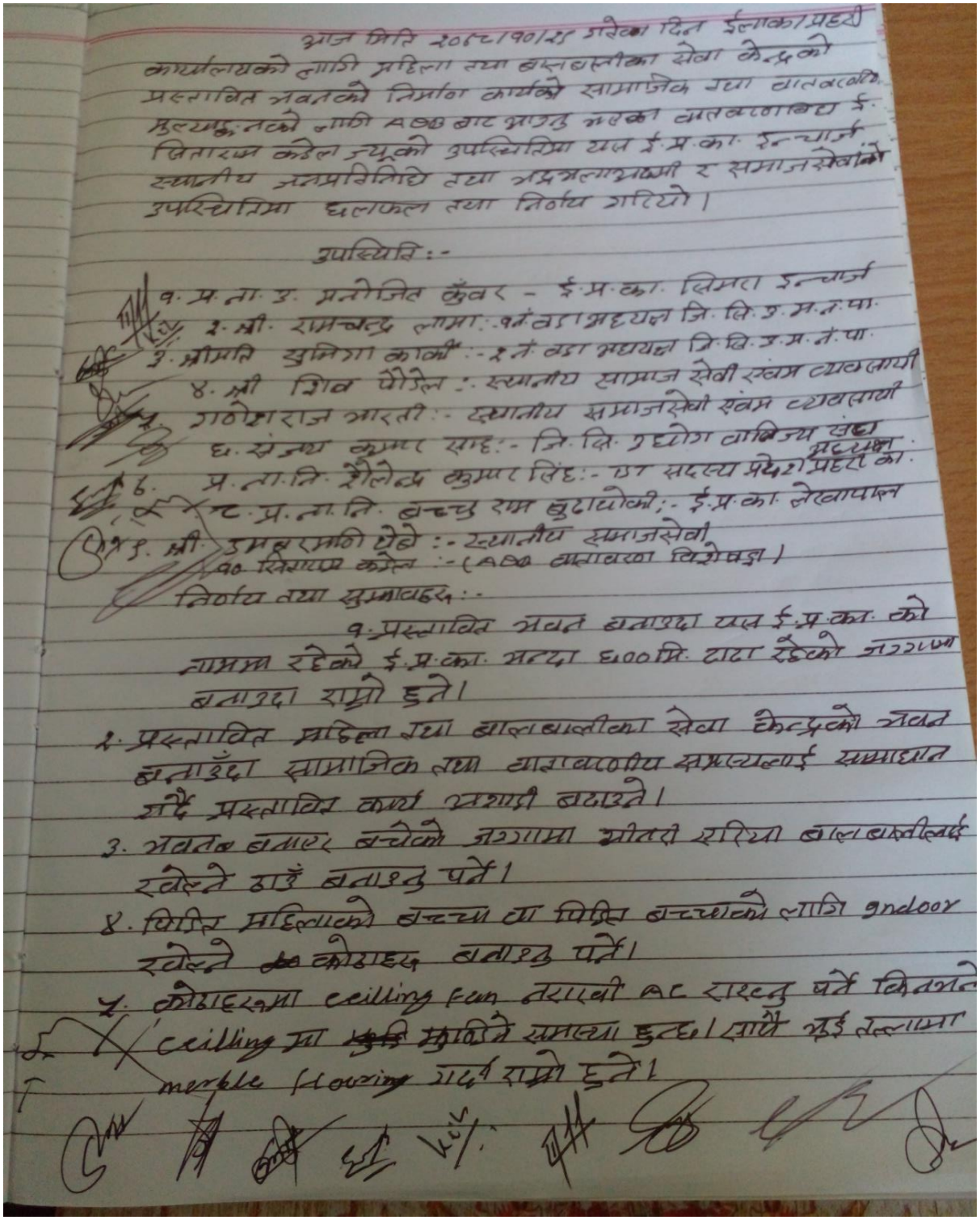
XIV. Discussion and Decisions

(i) Except a motor garage other construction area is empty, so there will be no social and environmental impact due this project.

(ii) Efforts should be made to protect the garage in engineering design and if this is not possible it will be relocated.

(iii) Strong security measures should apply in design and following facilities should be included: parketing, attached bathroom, management of drinking water, alternative energy

(iv) It is possible for the construction area to be flooded during the rainy season, so the height of the structure should be at least 3 feet above the ground level.



4. English Translation of Consultation Meeting

4. The following discussion was held on 12th February 2022 in the presence of ADB Consultants at Area Police Office, Gaushala regarding the construction of Women and Child Service Center.

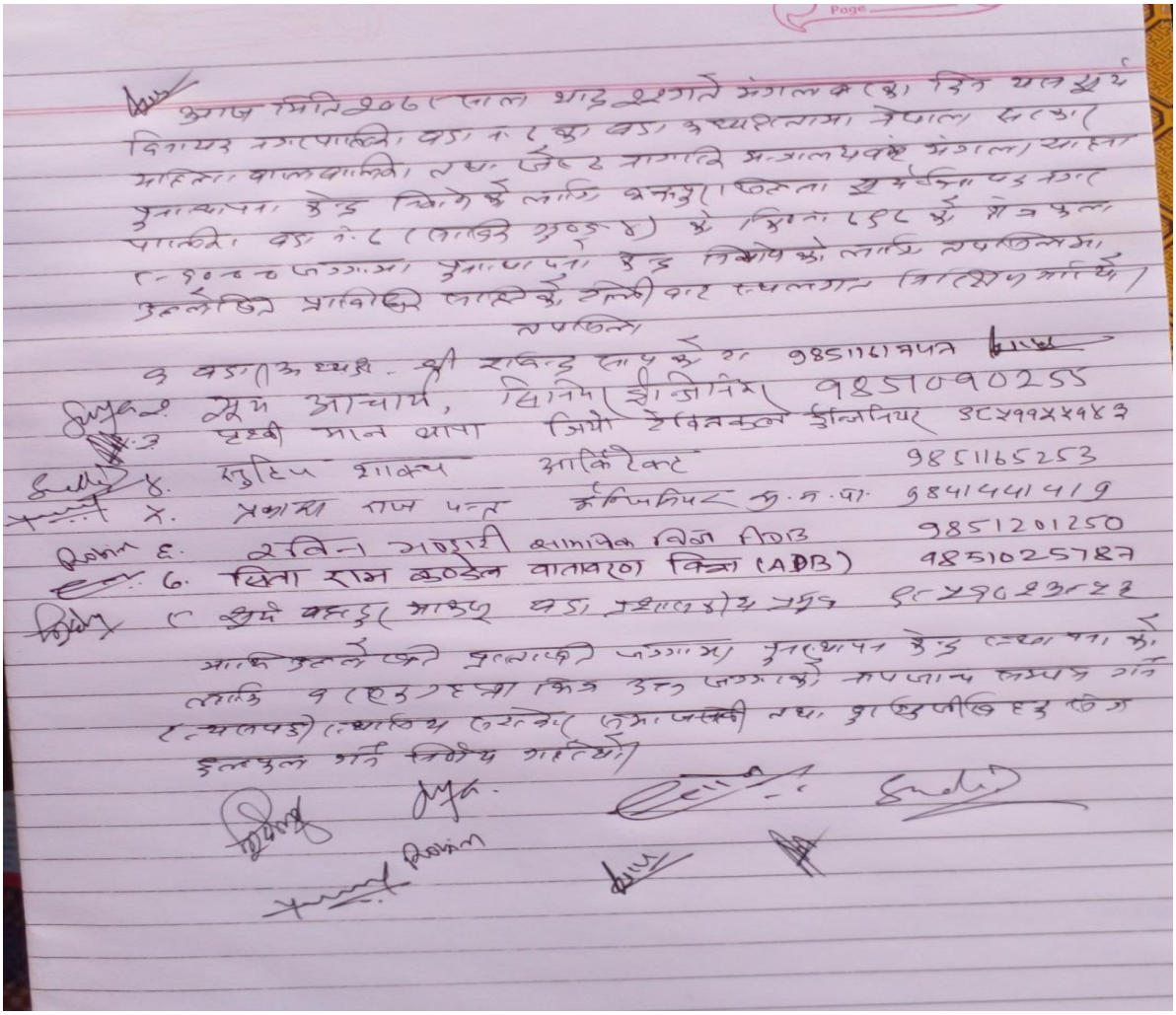
XV. Discussion and Decisions

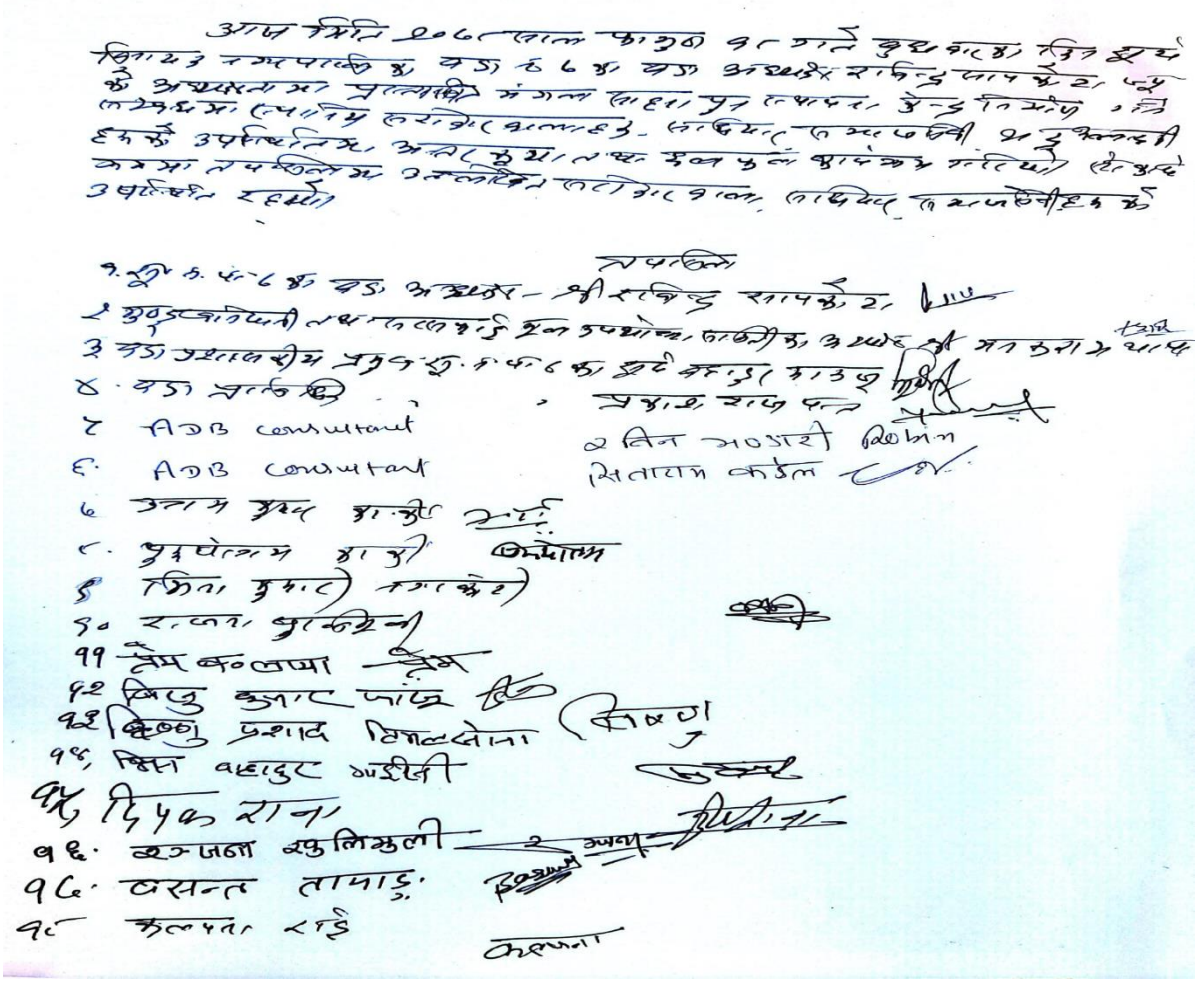
(i) Except a motor garage other construction area is empty, so there will be no social and environmental impact due this project.

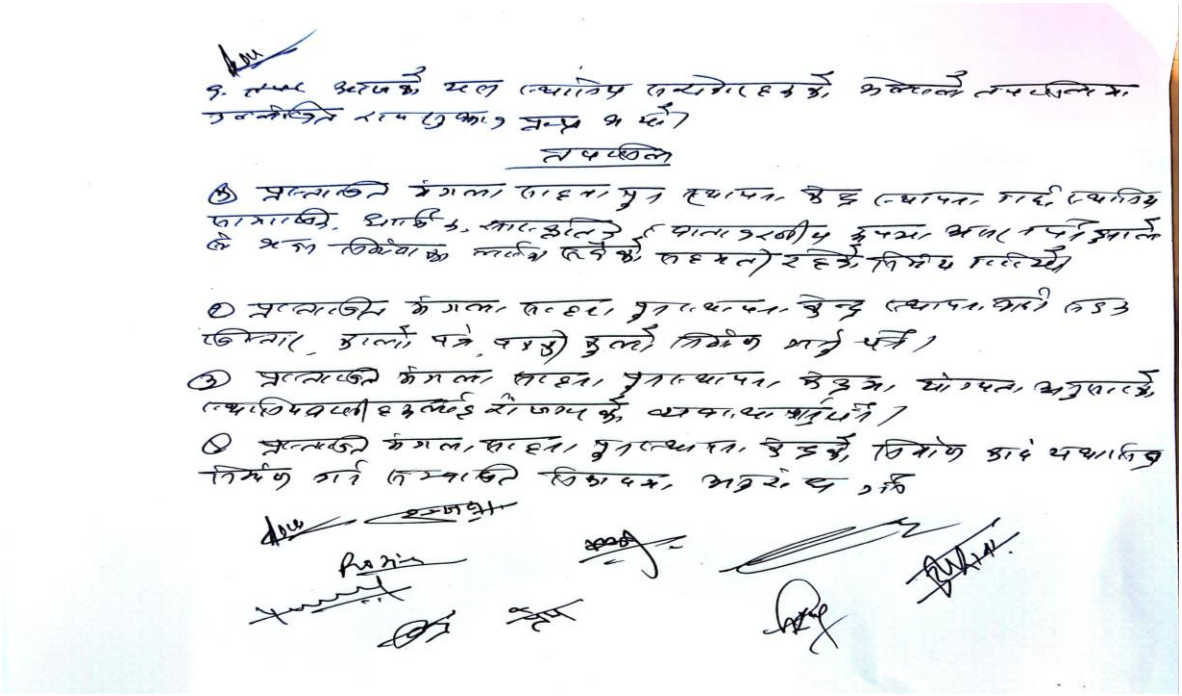
(ii) Efforts should be made to protect the garage in engineering design and if this is not possible it will be relocated.

(iii) Strong security measures should apply in design and following facilities should be included: parketing, attached bathroom, management of drinking water, alternative energy

(iv) It is possible for the construction area to be flooded during the rainy season, so the height of the structure should be at least 3 feet above the ground level.







5. English Translation of Consultation Meeting

5. A consultation meeting was held on 7th September 2021 and 2nd March 2022 about construction of Rehabilitation center for gender based violence victims. The participants of the consultation meeting were; Chair of ward no-7, Suryavinayak, local level representatives and ADB Consultants. The agenda of discussion were as follows:

XVI. Discussion and Decisions

(i) Ward chairperson agreed to demarcation of proposed area and have consultation with local for their view collectoion.
(ii) As the construction activities will not cause any such significant impact on environment, local people are agreed to give consent for constructing the center.
(iii) Locl people requested for local employment and blacktop of the access road the propsed center.
(iv) The locals were enthusiastic about this service center and demanded to start the Rehabilitation center as soon as possible.

ANNEX 9: SURVEY CHECKLISTS

A. Physical Environment

Parameter	Description
Topography	
Geology (Rock and Soil Types)	
Erosion and Sedimentation	
Quarry Sites	
Sites for Labour Camp	
Site for Storage and Stockpiling	
Access and Diversion if necessary	
River Training Works	
Land Use	
Air Quality	
Water Quality	
Noise Level	
Spoil disposal sites	
Drainage Network and Ground Water	
Status of Channel Shifting	

B. Vegetation and Wildlife

Vegetation in the project area

SN	Local Name	Botanical Name	Location	Vegetation Type	Local Status	Local Use	Protection Status		
							GoN	IUCN	CITES

Mammals in the project area

SN	Common Name	Scientific Name	Habitat	Local Status	Crop/Livestock Raider	Local Use	Protection Status		
							GoN	IUCN	CITES

Birds Sighted in the project area

SN	Common Name	Scientific Name	Type	Habitat	Local Status	Protection Status		
						IUCN	CITES	GoN

Herpeto-fauna in the Project Area

S.N.	Local Name	Scientific Name	Habitat	Local Status	Status Code			Local Use
					CITIES	IUCN	GoN	

Fish in the Project Area

S.N.	Local Name	Scientific Name	Status of Occurrence	Migratory Status/Season	Observed Location

C. Socio-Economic and Cultural Environment

Parameter	Description
Demography a) Population (Male, Female) b) Caste Ethnicity c) Language d) Religion and Culture e) Literacy	
Occupation	
Migration Patten	
Public Health and Sanitation	
Drinking Water Supply	
Education Facilities	
Communication	
Fuel and Energy	
Road and Transportation	
Land Holding	
Food Sufficiency	
Irrigation	
Health Care System	
Market	
Business and Industries	
Religious and Cultural Sites	
Non-governmental activities	
Development Potential	
Detail of Project Affected Structures	

D. Soil Erosion Prone Areas

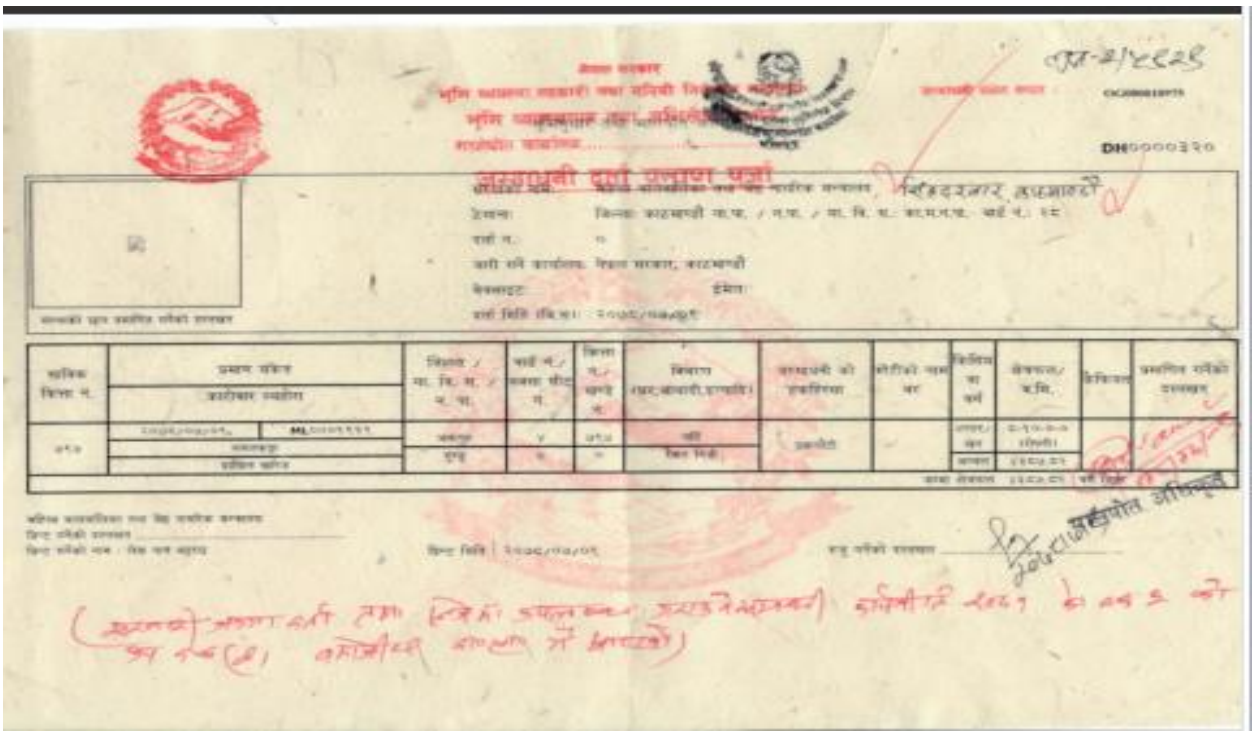
SN	Locations or (Left/Right)	Nature of erosion	Cause of erosion	Protection Structure

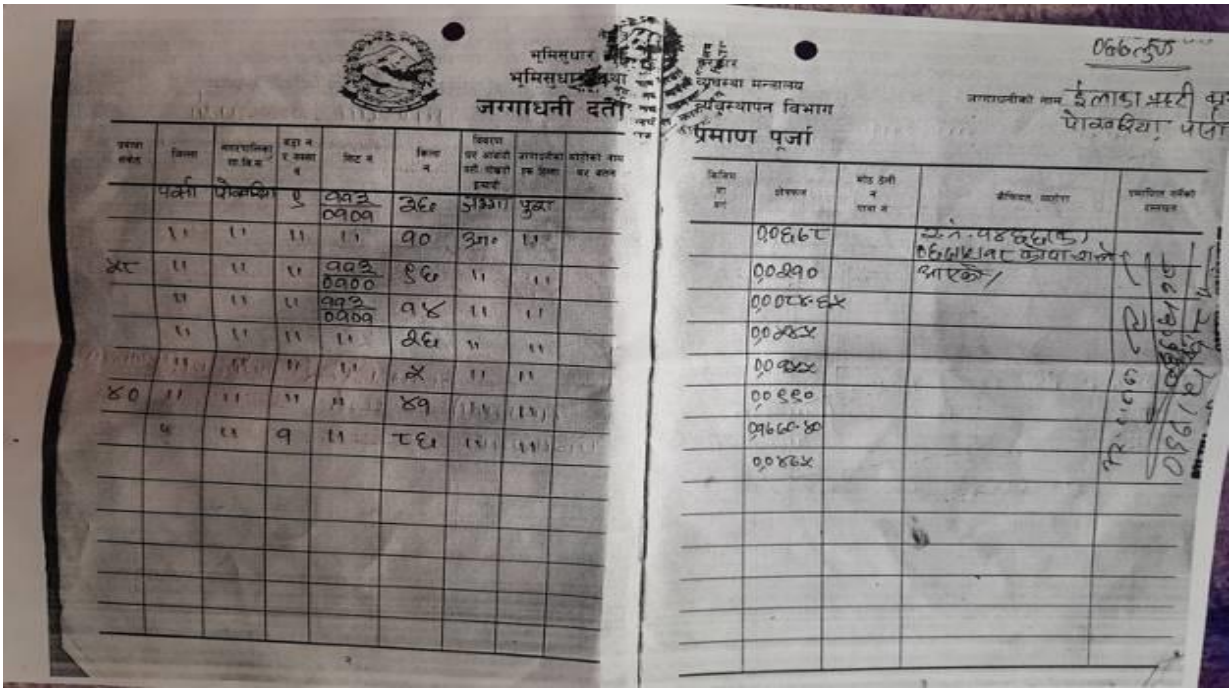
Settlements and Population

SN	Settlement	Ward	HH	Population			Caste/Ethnicity
				Male	Female	Total	

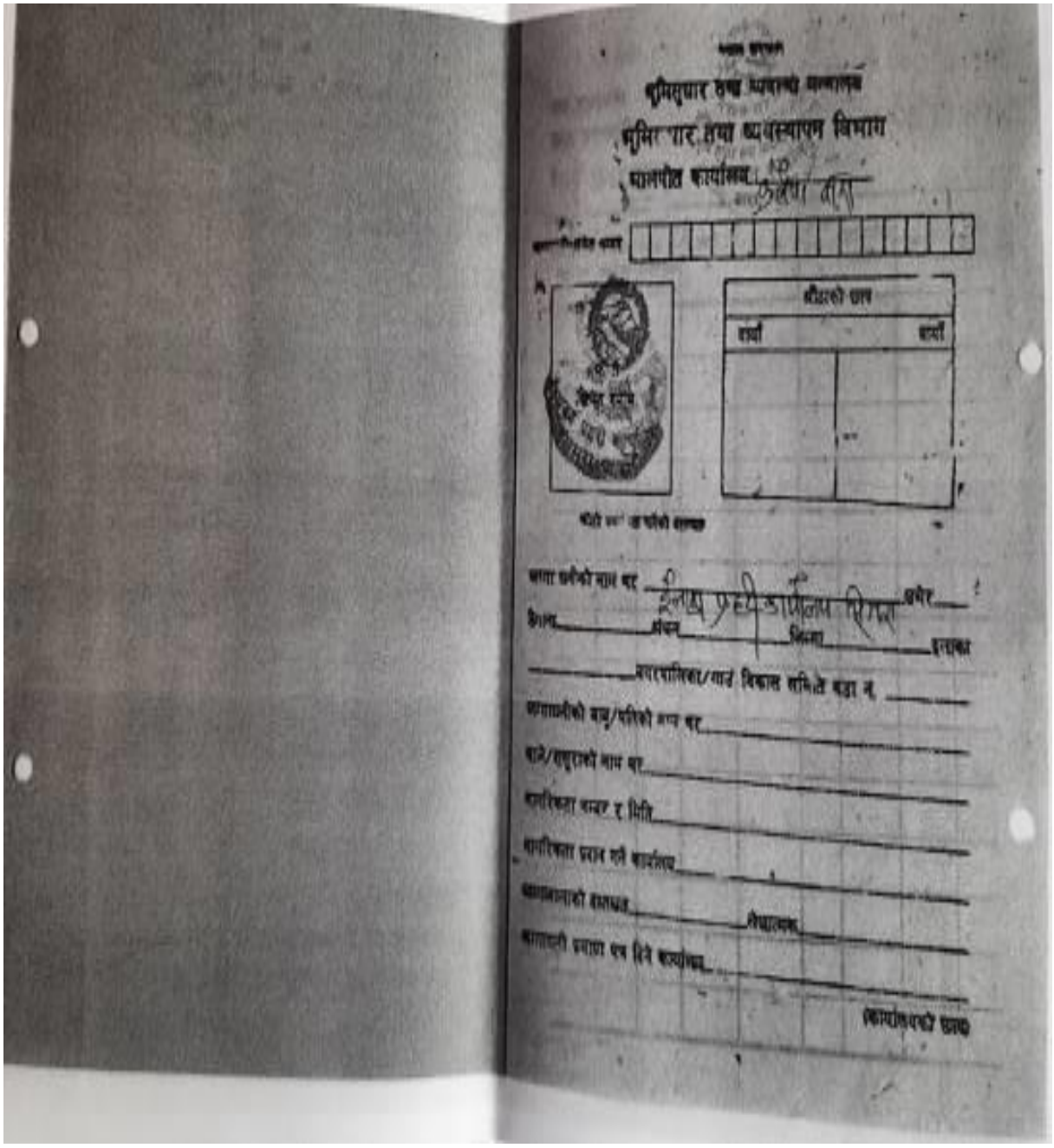
ANNEX 10: LAND OWNERSHIP AND OTHER DOCUMENTS

6. Land Certificate of Suryavinayak Rehabilitation Center

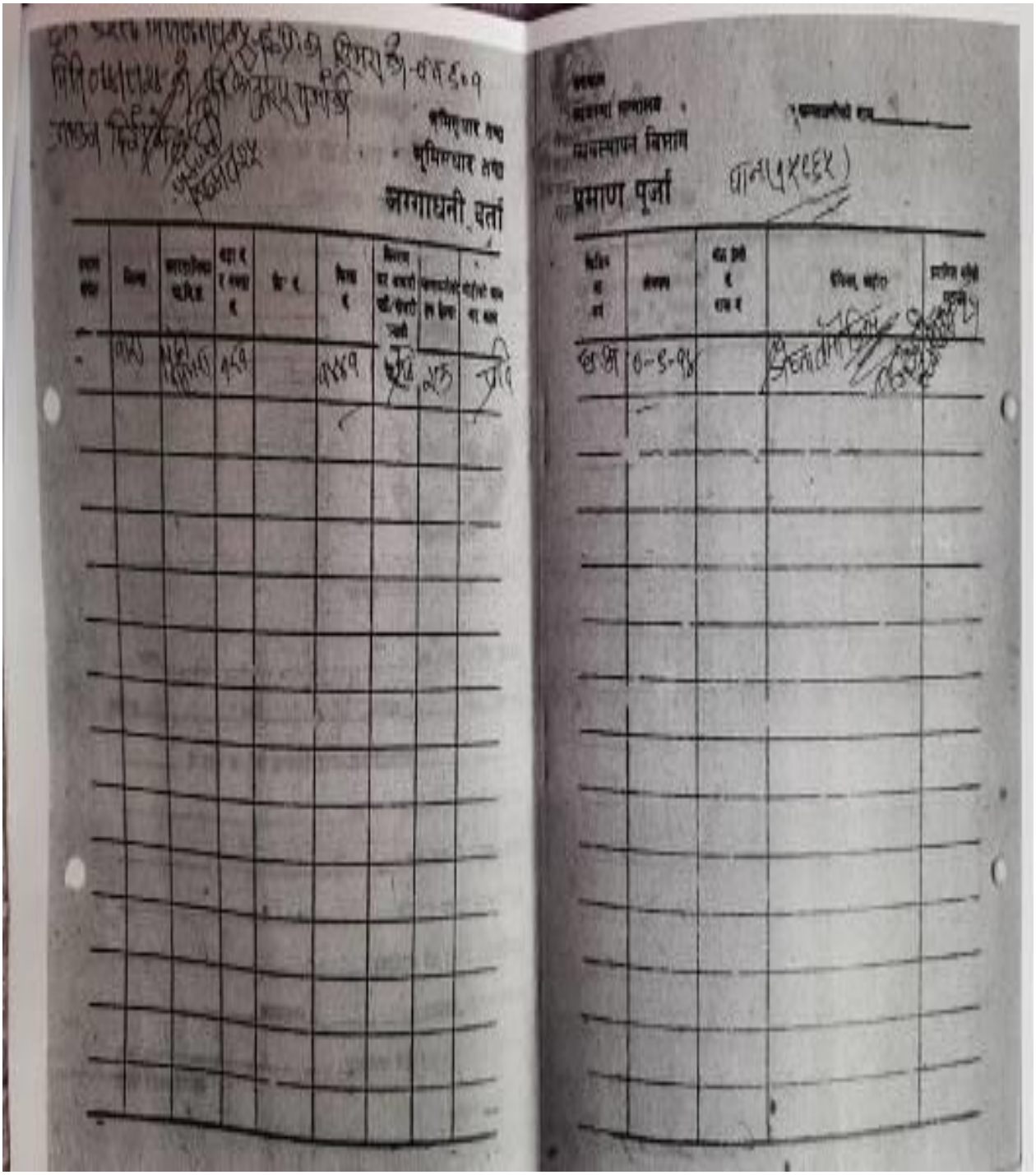




7. Land Certificate of Pokhariya APO

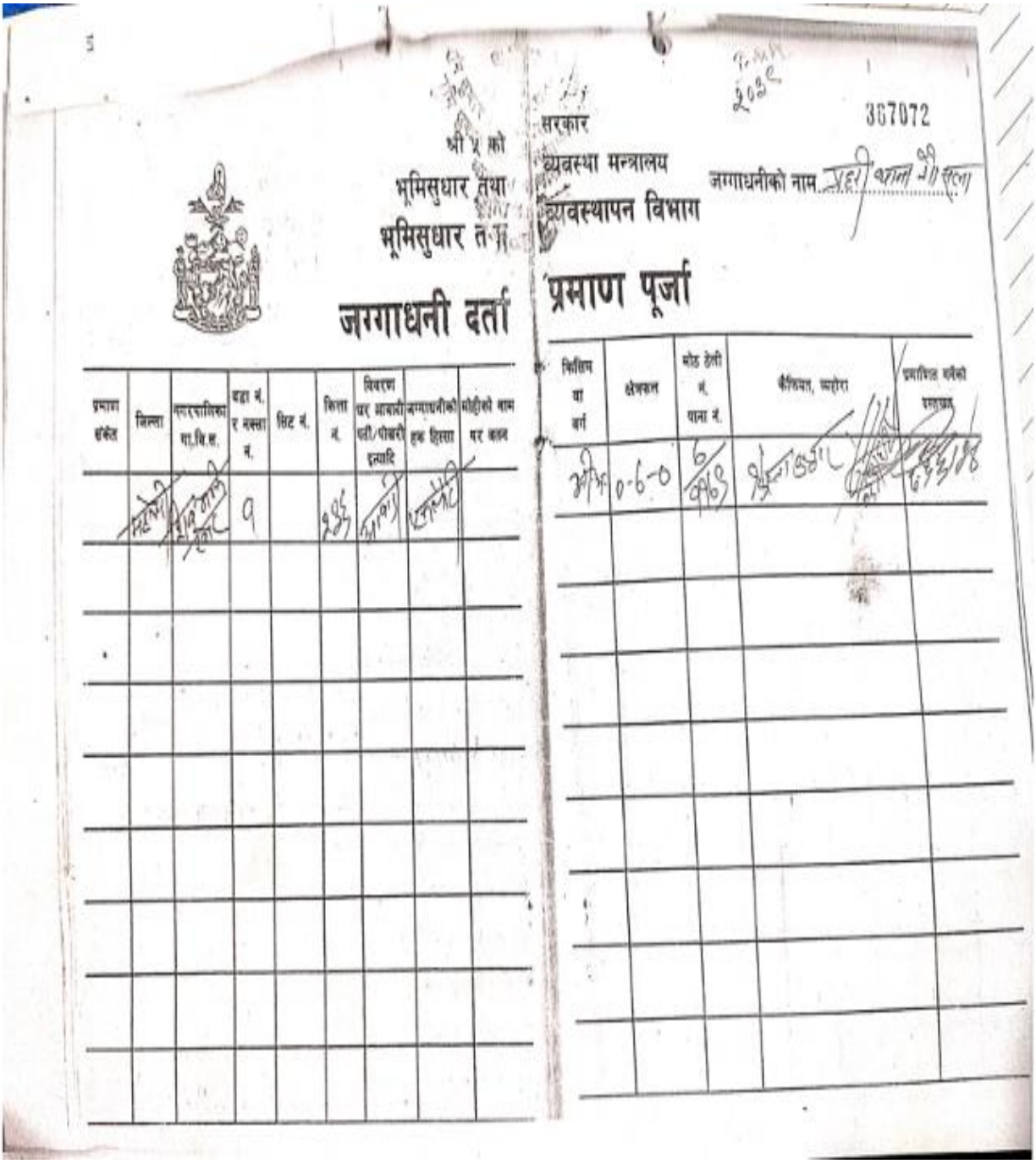


8. Land Certificate of Simara APO



9. Pokhariya APO Bhediya APO

10. Land Certificate Gaushala APO



सरकार
व्यवस्था मन्त्रालय
व्यवस्थापन विभाग

367072

श्री ५ को
भूमिसुधार तथा
भूमिसुधार त.प्र.

जग्गाधनीको नाम

जग्गाधनी दर्ता

प्रमाण संकेत	जिल्ला	नगरपालिका गा.वि.स.	वडा नं. र सडक नं.	सिट नं.	किता नं.	विवरण घर आबादी पर्ती/पोखरी इत्यादि	जग्गाधनीको हक हिस्सा	मोहीको नाम घर काम
			9					

प्रमाण पूर्जा

किसिम वा वर्ग	क्षेत्रफल	मोठ ठेली नं. थाना नं.	कैफियत, ब्यहोरा	प्रमाणित गर्नेको दस्तखत
	0-6-0			

ANNEX 11: SOME PHOTOGRAPHS

Photo 1: Proposed Simara area under APO location

Photo 2: Simara WCSCSC construction

Photo 3: Interaction with APO officials at Simara APO

Photo 4: Badminton court inside Pokhariya APO

Photo 5: Study team with APO officials at Pokhariya APO

Photo 6: FGD/Meeting at Bhediya APO

Photo 7: Proposed Rehabilitation center location at Suryavinayak-7, Subbapakha

Photo 8: Proposed Rehabilitation center location with existing road and forest area

Photo 9: Field Observtion along with government and local people at prosed rehabilitation center location

Photo 10: FGD/Meeting with officials and local people at proposed rehabilitation construction sites

Photo 11: An old building need to be removed from construction site in Bhediya APO

Photo 12: Proposed construction site at Gaushala APO

Photo 12: An old building need to be removed from construction site in Bhediya APO

Photo 13: A Car garage need to be relocated from construction site of Gaushala APO