Techo International Airport Access Road

Environmental and Social Impact Assessment Supplement

PREPARED FOR

ខេមបូឌា អ៊ែរផត អ៊ុនវេសមិន ប.ក
柬埔寨機場投資有限公司
Cambodia Airport Investment Co., Ltd

Cambodia Airport Investment Co., Ltd.

DATE
22 December 2024

REFERENCE
0730380

DOCUMENT DETAILS

DOCUMENT TITLE	Techo International Airport Access Road
DOCUMENT SUBTITLE	Environmental and Social Impact Assessment Supplement
PROJECT NUMBER	0730380
Date	22 December 2024
Version	01
Author	Athina Wilson
Client name	Cambodia Airport Investment Co., Ltd.

DOCUMENT HISTORY

				ERM APPROVAL TO ISSUE		
VERSION	REVISION	AUTHOR	REVIEWED BY	NAME	DATE	COMMENTS
Draft 01	00	As above	David Blaha	Kamonthip Ma-oon	22.12.2024	Issued to Client

SIGNATURE PAGE

Techo International Airport Access Road

Environmental and Social Impact Assessment Supplement

0730380

Kamonthip Ma-oon
Partner

ERM-Siam Co., Ltd.
179 Bangkok City Tower 24th Floor,
South Sathorn Road, Thungmahamek,
Sathorn, Bangkok 10120, Thailand

CONTENTS

LIST OF TABLES

LIST OF FIGURES

1. INTRODUCTION

The Cambodia Airport Investment Co., Ltd (CAIC) ("the Project Sponsor") is a 90/10 joint venture between the Overseas Cambodia Investment Corporation (OCIC) and the Royal Government of Cambodia represented by the State Secretariat of Civil Aviation (SSCA), which was formed to co-develop the New Phnom Penh International Airport (NPPIA or the "Project"). The NPPIA is located in Kandal Stung, Sa'ang District, Kandal Province and Bati District, approximately 20 km south of Phnom Penh, in Cambodia.

The Project Sponsor has prepared an Environmental Impact Assessment (EIA) for the Project to meet Cambodian regulatory requirements. The Project Sponsor is seeking international financing for the Project from the U.S. Development Finance Corporation (DFC) and has prepared an Environmental and Social Impact Assessment (ESIA) Addendum to fill several gaps and to bring the Project into conformance with DFC's environmental and social policies, including the International Finance Corporation's (IFC) Performance Standards (PS).

1.1 PURPOSE OF THIS DOCUMENT

The Environmental Impact Assessment (EIA), prepared in accordance with Cambodian legal requirements, only considered impacts associated with the construction of the new airport facilities within the defined "project site", which consists of approximately 2600 ha of land (see ***Figure 2-1***), including the airport terminal, runways, and various ancillary facilities.

The EIA did not include the new access road in the Project Description, but does reference it a few times within the document. This access road was approved by the Kandal Provincial Administration and the Ministry of Land Management, Urban Planning and Construction.

Although not proposed for financing by the DFC, it is considered an "associated facility" pursuant to DFC's Environmental and Social Policy and Procedures (DFC, 2020). Associated facilities are defined as "facilities that are not funded as part of the project (funding may be provided separately by the Applicant or by third parties including the government), and whose viability and existence depend exclusively on the project and whose goods and services are essential for the successful operation of the project" (DFC, 2020, Appendix D). The viability and existence of the NPPIA depends on the access road and the access road is essential for the successful operation of the Project.

As such, the impacts of associated facilities must be evaluated and considered as part of DFC's financing decision. Since the EIA conducted by E&A did not evaluate the impacts of the airport access road, this ESIA Supplement has been prepared to address this gap with DFC's policies.

1.2 LIMITATIONS

This report has been prepared by ERM, with all reasonable skill, care, and diligence within the terms of the Contract with the Client and taking account of the resources devoted to it by agreement with the Client. Specific limitations on this assessment are as follows:

- ERM's findings are accurate and complete only to the extent that information provided to ERM was itself accurate and complete.
- The airport access road is already constructed as it provided construction phase access to the airport site. The only remaining work on the access road are repairs and resurfacing after the completion of airport construction, in preparation for airport commissioning.

- Since the airport access road has already been constructed, there were no specific field studies undertaken to document pre-construction conditions. This ESIA Supplement was prepared based on secondary data, such as historic Google Earth imagery; no additional field studies or primary data collection was conducted.
- ERM was not able to meet with government representatives or the Land Committee responsible for determining the compensation amounts, due to the Sponsor's preference.
- ERM was not able to obtain information on how the compensation amount was determined, or the detailed land acquisition process.
- ERM did not conduct any stakeholder consultations due to the sensitive nature of the Project and the community sentiments surrounding it. Only secondary sources were used to assess the impacts and it was not possible to verify/compliment the information through primary data collection.
- ERM has not been able to verify the complaints and concerns from affected communities, however there is a level of consistency in them being brought forward. Although we have not been able to ground truth these concerns, they have been considered within the context of the mitigation strategies moving forwards

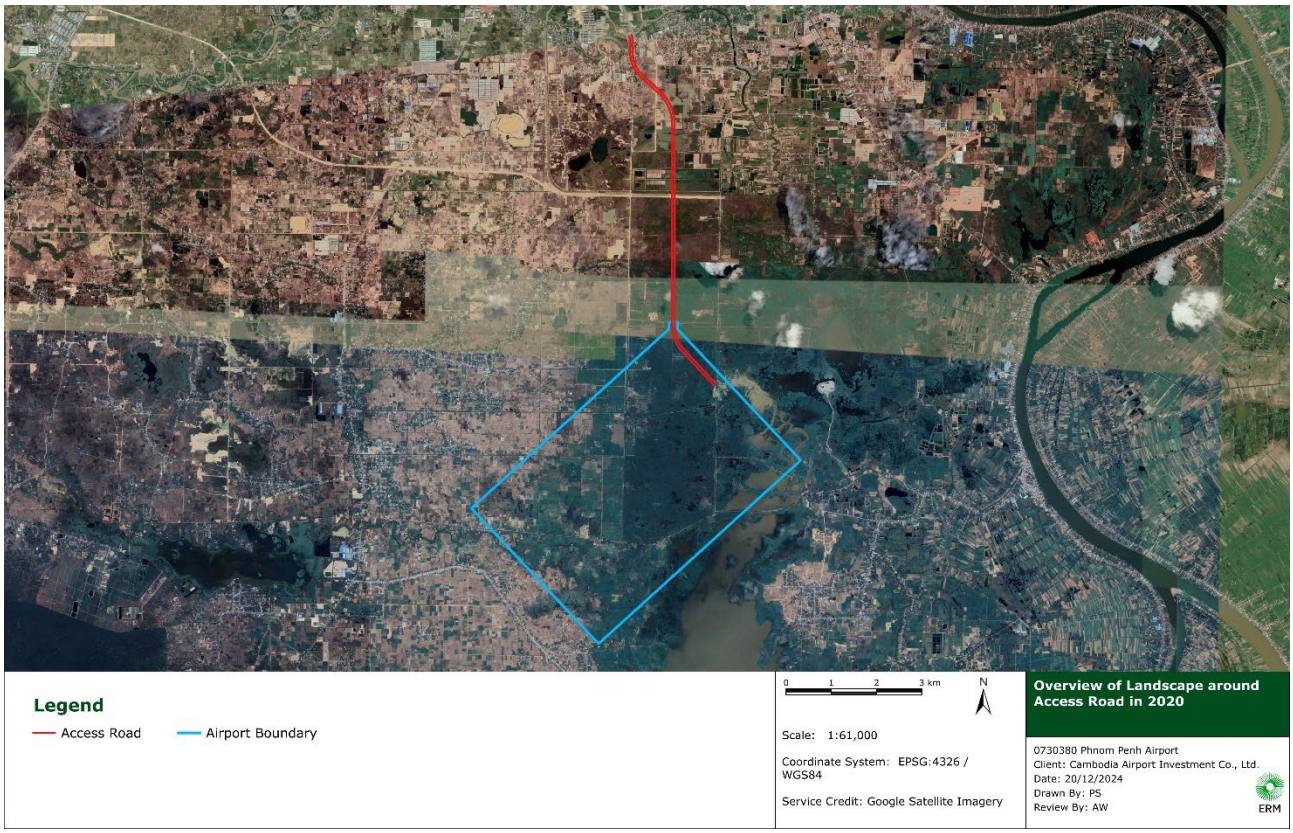
This ESIA Supplement evaluates and discloses the impacts associated with construction of the access road and identifies the mitigation measures that were implemented during construction. However, additional construction phase mitigation measures are only recommended if they would still be viable and effective in addressing any significant residual impacts. Operational phase mitigation measures are included to address significant impacts.

2. PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The Airport Access Road is a new road located on the south side of Phnom Penh and is intended to link the airport to National Route 2 (NR2) (see ***Figure 2-1***).

FIGURE 2-1 PROJECT LOCATION



2.2 PROJECT FACILITY

Construction of the airport access road began in March 2021, and it was essentially completed in March 2024. The only remaining work is minor repairs, resurfacing, and vegetative stabilization of the side slopes after the completion of airport construction, in preparation for airport commissioning.

The Airport Access Road is 6.943 km long as measured from the airport boundary to NR2 with a right of way (ROW) of 60 m (30 m on either side). The width of the Airport Access Road is 54 m with 22.5 m wide travel lanes in each direction plus a 9.0 m wide median.. The road consists of:

- Compacted soil base
- 900 mm thick sand subgrade
- 300 mm thick coarse aggregate base course
- 200 mm thick reinforced concrete

During construction, two minor adjustments to the road alignment were approved by the Kandal Provincial Administration and the Cambodian Ministry of Land Management, Urban Planning and Construction:

- In December 2021, the road alignment was adjusted to avoid electricity poles of Electricite dur Cambodge; and
- In July 2022, the road alignment connecting Samdech Techo Hun Sen Boulevard to the airport access road was adjusted slightly.

2.3 PROJECT OPERATIONS

The Airport Access Road will require regular maintenance of the road surface, the median, shoulders, and drainage facilities. With proper maintenance, the Airport Access Road should continue to function indefinitely.

3. LEGAL FRAMEWORK

The legal framework for the road is the same as for the Techo International Airport EIA conducted by E&A, please refer to Chapter 3 Legal Framework of the EIA (NPPIA, 2020)[1] and Chapter 1.3.3 of the Social Impact Assessment of the Techo International Airport ESIA Addendum.

In terms of the permits for the construction of the access road itself, the following letters were issued by relevant government authorities:

- Letter No. 264 was issued on 03 December 2021 by the Kandal Provincial Administration concerning support and approval for the adjustment of the road alignment connecting Samdech Techo Hun Sen Boulevard to the access road of the Techo International Airport in Takhmao City. The letter stated that the adjustment would minimally impact the land and houses of residents and does not affect the high-voltage electricity poles of Electricite du Cambodge.
- Letter No. 2106 was issued on 20 July 2022 by the Ministry of Land Management, Urban Planning, and Construction, concerning the official approval for CAIC to adjust the road alignment connecting Samdech Techo Hun Sen Boulevard to the access road of the Techo International Airport in Takhmao City. The letter stated that CAIC must coordinate with affected people regarding the impacts and ensure compliance with legal procedures. The resolution process would be led by the same Committee for Land Resolution as the Techo International Airport, which includes representatives from the Ministry of Land Management, Urban Planning and Construction (MoLMUP), Ministry of Environment, Ministry of Water Resources, and Ministry of Planning, ensuring coordinated efforts across sectors.

4. ALTERNATIVES

4.1 ALTERNATIVE TECHNOLOGIES

Two alternative transportation modes were considered for providing access to the NPPIA – a light rail line and a highway. The Project could not rely exclusively on light rail to support construction and operation of the airport, so a highway was clearly needed and initially constructed.

The Cambodian Ministry of Public Works and Transport has indicated that it is still considering building a light rail line, possibly underground, from downtown Phnom Penh to the NPPIA, with a possible station at the AEON Mall Mean Chey. This would be part of a larger underground metro system under consideration by the Cambodian government (Phnom Penh Post, 2023), but for which construction has not yet begun.

[1]Environmental and Social Impact Assessment (ESIA) on the Construction of New Phnom Penh International Airport (NPPIA)

4.2 ALTERNATIVE ROUTES

In linking downtown Phnom Penh to the Techo International Airport, the extent of urban development around Phnom Penh limited viable options. Three alternatives were identified (***Figure 4-1***):

- Alternative A (green route in ***Figure 4-1***) – is the proposed alternative. It is 22.5 km from downtown Phnom Penh, and the proposed route would involve 15.6 km of existing roads and 6.9 km of new road (i.e., the proposed Airport Access Road).
- Alternative B (orange route in ***Figure 4-1***) - follows the same route as Alternative A for the first 6.4 km, but then follows NR2 and NR21 to Xi Jinping Boulevard, where the route turns west for 2.2 km, before following a new route for 4.3 km to reach the Techo International Airport entrance.
- Alternative C (purple route in ***Figure 4-1***) - is a variation of Alternative B. It follows the same route as Alternative A for the first 6.4 miles, then follows Alternative B for an additional 9.9 km, before following a new route for 7.9 km to the Techo International Airport entrance.

Table 4-1 compares the three alternatives. As this table indicates, Alternative A (the proposed route) is the most direct from the center of Phnom Penh and also provides the best access to the urban areas west of the center, where most of the population of Phnom Penh lives. Alternative B is about 19% longer than Alternative A, indicating that it would take longer (47 minutes vs 34 minutes for off peak hours according to Google Maps), but would involve less new road construction (4.3 km vs 6.9 km for Alternative A). Alternative C would also not be as direct and would take longer to reach the airport from downtown Phnom Penh than Alternative A, but would be quicker than Alternative B. Alternative C would require the newest road construction. Overall Alternative A would provide the best access to the airport from Phnom Penh with relatively minor new road construction and physical/economic displacement and is considered the preferred alternative.

FIGURE 4-1 ACCESS ROAD ALTERNATIVES

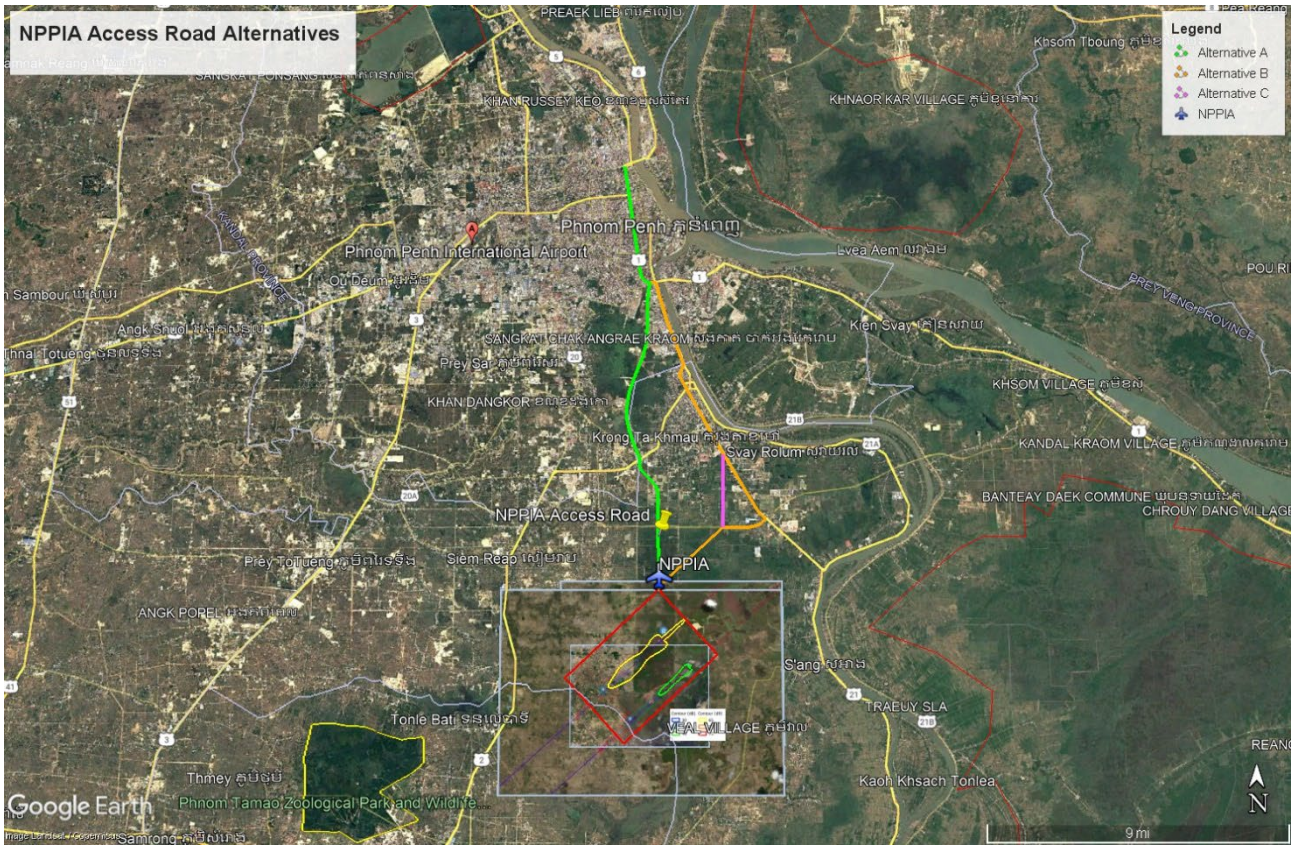


TABLE 4-1 COMPARISON OF ACCESS ROAD ALTERNATIVES

Criteria/Alternatives	Alternative A	Alternative B	Alternative C
Total length	22.5 km	26.7 km	24.1 km
Existing Road	15.6 km	22.4 km	16.2 km
New Road	6.9 km	4.3 km	7.9 km
Travel Time	34 minutes	47 minutes	41 minutes
Convenience to overall urban area	Good	Fair	Fair

5. STAKEHOLDER ENGAGEMENT

The process of stakeholder identification and analysis allows for the formulation of a robust engagement strategy, which in turn provides opportunity for the concerned stakeholders to be involved in the process of identification of areas of concerns as well as formulation of mitigation strategies for the same. This in turn allows for stakeholders to develop an understanding of the project as well as the maintenance of positive relations between stakeholders and the Project Proponent.

A public notification letter (letter No. 1070) was issued by the Kandal Provincial Administration on 09 August 2022. The purpose of the letter was to inform citizens about the construction of an access road to Techo International Airport. The letter stated that the road would be 11.17 km long and 60 m wide and would connect to Samdech Techo Hun Sen Boulevard. The Kandal

Provincial Administration requested people to cooperate with the company in constructing this road.

No stakeholder consultations were conducted since the issuance of the letter.

6. EXISTING ENVIRONMENT

The Existing Environment section of this ESIA Supplement is based primarily on secondary sources of information, such as Google Earth images, which document physical and biological conditions prior to access road construction. ***Figure 6-1*** shows the access road alignment overlain on a Google Earth image dated December 2020 prior to the initiation of road construction.

FIGURE 6-1 TECHO INTERNATIONAL AIRPORT ACCESS ROAD PRE-CONSTRUCTION CONDITIONS

6.1 PHYSICAL RESOURCES

As the Access Road is located in the same district as the Techo International Airport, the physical environment surrounding the Access Road, is the same as the Airport site. A summary of the physical baseline, based on desktop review including the EIA conducted by E&A are presented in ***Table 6-1*** below.

TABLE 6-1 SUMMARY OF ENVIRONMENTAL BASELINE

Receptor	Description
Geology and Soils	By using D. Crocker's 1963 soil type data, the EIA found that in the Project area, there are two types of soil: Alluvial Soils and Cultural Hydromorphics. The characteristics of each soil type are described below: - Alluvial Soils: This is a deep (> 2 m), but relatively shallow, fallow soil. In addition, soil fertility in the Project area was found to be Medium Fertility Soil. - Cultural Hydromorphic: This is an ancient sedimentary rock - an alkaline material on lowlands. An important feature of this soil proton is the presence of the above hippocampus, about the weight of plow that plowed in water for centuries. The sheath layer at a depth of about 15 cm to 20 cm, 5 cm thick making it difficult to pour water, thus important for the production characteristics of the soil. This plume weight can be found in many types of soil and can change the properties of the soil.
Topography	Cambodia is divided into three distinct zones: The Lowlands, the Highlands, and the Mountains. The Lowlands are geographically along the Mekong River and the Tonle Sap Lake, with an altitude of not more than 100 metres above sea level. The highlands are located in the north and northeast, between 50 and 200 metres high, while the plateau is between 8 and 20 metres above sea level (JICA, 2002). The elevation in the Project area is between 2 m and 8 m relative to sea level.
Natural Hazards	The slope in the Project area flows from west to east and the slope (0–0.4 degrees) is weak. Therefore, the area is not vulnerable to landslides, especially during the rainy season. There are no records of earthquakes or tsunamis in Cambodia. All areas in Cambodia are classified as having a depletion density below the Mercalli Scale in the range of "I-V", the lowest level of the earthquake. During the stakeholder consultation process conducted by E&A, during the EIA process it was found that the Project area was affected by flash floods caused by local extreme rainfall, rather than floods from Prek Tnot River and the Mekong River System. The Project area was inundated only once by the flooding from the Prek Thnot River in 1991. But since the headwork and flood control dikes were built in 2001, flood waters from the river did not reach the area. According to the residents, the annual floods in the Project area amount to approximately 1 m depth. The maximum flood level in the proposed Project area is approximately 8.2 m (m.sl), and flood period is 5-10 days. The flooding in the area is mainly caused by flash floods from the upper catchment area west of National Road No 3, and the limited capacity of the drainage system in the Project area. More frequent flooding has been happening in the area due to both global/regional climate change and land use and infrastructure changes in the Project area. The Project area is affected by the Mekong flood event with the maximum flood happening in 2000. The year 2000 flood could happen once in a period of 75 years, according to historical record and hydrological analysis.
Climate and Meteorology	The climate in Cambodia comprises of two distinct seasons: the dry season (November to April) and the rainy season (May to October).

Receptor	Description
	The month with the lowest average temperature recorded during the last 10 years was December (18.7 °C on average). The highest average temperature was recorded in May and October (24.4 °C on average). During this period, the average annual precipitation was 1,302.15 mm. The lowest average annual precipitation was recorded in 2020 (970 mm), and the highest average annual precipitation was recorded in 2021 (1,654 mm). Wind direction and wind speed over the last 10 years from 2013 to 2023, was obtained from the Pochentong Station of the Ministry of Water Resources and Meteorology. Over the past 10 years, wind mostly blew from the north, with an average wind speed of 9.635 m/s over the past 10 years.
Air Quality	Almost all parameters were within the local regulatory limits and in accordance with World Bank Group Environmental, Health and Safety (WBG EHS) Guidelines. Specifically, the O_3 parameter in the airport boundary (AN1) (230 µg/m3) exceeded national standard, while PM10 at Peam Sala village (AN3) (68 µg/m^3) and Cherng Prey village (94 µg/m^3) and PM2.5 in Peam Sala village (AN3) (28 µg/m3) and Cherng Prey village (37 µg/m^3) exceeded both national and international standards. According to the EIA conducted by E&A (November 2020), demining activities (clearing vegetation by explosive disposal experts) occurred during the air quality monitoring period. As a result, these activities elevated levels of some air pollutants.
Noise	The noise level results were compared separately due to differences in the time periods defined by the national and international standards. The national standard defines daytime as 06:00 to 18.00, evening as 18:00 to 22:00, and nighttime as 22:00 to 06:00. While the international standard defines daytime as 07:00 to 22:00 and nighttime as 22:00 to 7:00. **International Standard** The results indicated that all average noise levels (L_{Aeq}) in daytime were within WBG EHS Guidelines. While some average noise levels in nighttime at Peam Sala Village (AN3) and Cherng Prey Village (AN4) exceeded standard. **National Standard** The results in the airport boundary (AN1) were compared with the maximum noise standard allowed in commercial, service, and mixed areas as stipulated in the sub-decree on air pollution control and noise disturbance (2000) and report on the implementation of the working conditions model for Project development, infrastructure, and tourism of Ministry of Environment (2018). The results showed that the average noise levels for daytime, evening, and nighttime were all within national standard. The results at Potsor village (AN2), Peam Sala Village (AN3), and Cherng Prey Village (AN4) were compared with the maximum noise standard allowed in hotels, administration areas, villas, and flats as stipulated in the sub-decree on air pollution control and noise disturbance (2000) and report on the implementation of the working conditions model for Project development, infrastructure, and tourism of Ministry of Environment (2018).

Receptor	Description
	Regarding the average noise levels (L_{Aeq}) that exceeded the standards, the following summary can be provided: ▪ Potsor village (AN2): average noise levels between 18:00 and 20:00 hrs ▪ Peam Sala Village (AN3): an average noise levels at 8:00 - 9:00 hrs, 18:00 - 22:00 hrs, and 01:00 – 06:00 hrs ▪ Cherng Prey Village (AN4): average noise levels between 18:00 - 02:00 hrs and 03:00 – 06:00 hrs However, there are no standards for Maximum Sound Pressure Level, L_{max}) and Minimum sound pressure level, L_{min}).
Hydrology	The Project area is located in the flooded area, the water is stored in Beoung Sa'ang Phnom reservoir. Drainage lines are connected to the Tonle Bassac River (Outlets) from the reservoir. The outlets are situated along National Road 21 seen by the bridges and culverts, which are linked to Tonle Bassac River. The Tonle Bassac River is connected to the junction of the Mekong River and Tonle Sap Lake, where the flow comes from the upper part of Cambodia, while the Tonle Sap Lake gathers flow from the tributaries of surrounding sub- basins. Preak Ta ThokHor stream is located approximately 1 km east of the Access Road and connects Stoeng Prek Thnot River and Boueng Cheung Loung Lake. The drainage systems around the Airport site are open earth channels, trapezoidal with non-uniform dimensions. The main inflow to the Project area comes from Stung Prek Tnot River, which originates in Kampong Speu Province. Prek Tnot flow diverts to Prek Tahor canal and flows directly towards the Project area. Another inflow comes from Tonle Bati in the west, located in Takeo province. All the inflow gathers in Sa'ang Phnum Reservoir. The reservoir connects to the Bassac River through 10 tertiary canals.
Groundwater	The results of groundwater sampling at both stations indicated that most parameters met the standards set by the National drinking water quality standard of Ministry of Industry and Handicraft (2004), Prakas on the adoption of terms of references for infrastructure and tourism sectors of MoE (2018), and World Health Organization (WHO) Drinking Water Standards. One parameter did not meet the standards, which was arsenic in Preak Khmer Village (GW-01), Potsor Village (GW-02) exceeded both national and international standards. According to the EIA conducted by E&A (November 2020), Kandal Province is known for having high levels of arsenic in groundwater compared to other provinces in Cambodia and groundwater is mainly used for cooking, bathing, and cleaning.

6.2 BIOLOGICAL RESOURCES

6.2.1 HABITAT DESCRIPTION AND SPECIES PRESENT

Habitat is defined as a terrestrial, freshwater, or marine geographical unit or airway that supports assemblages of living organisms and their interactions with the non-living

environment.[2] According to the definition of the International Finance Corporation (IFC) Performance Standards, habitats are divided into modified, natural, and critical. Critical habitats are a subset of modified or natural habitats.

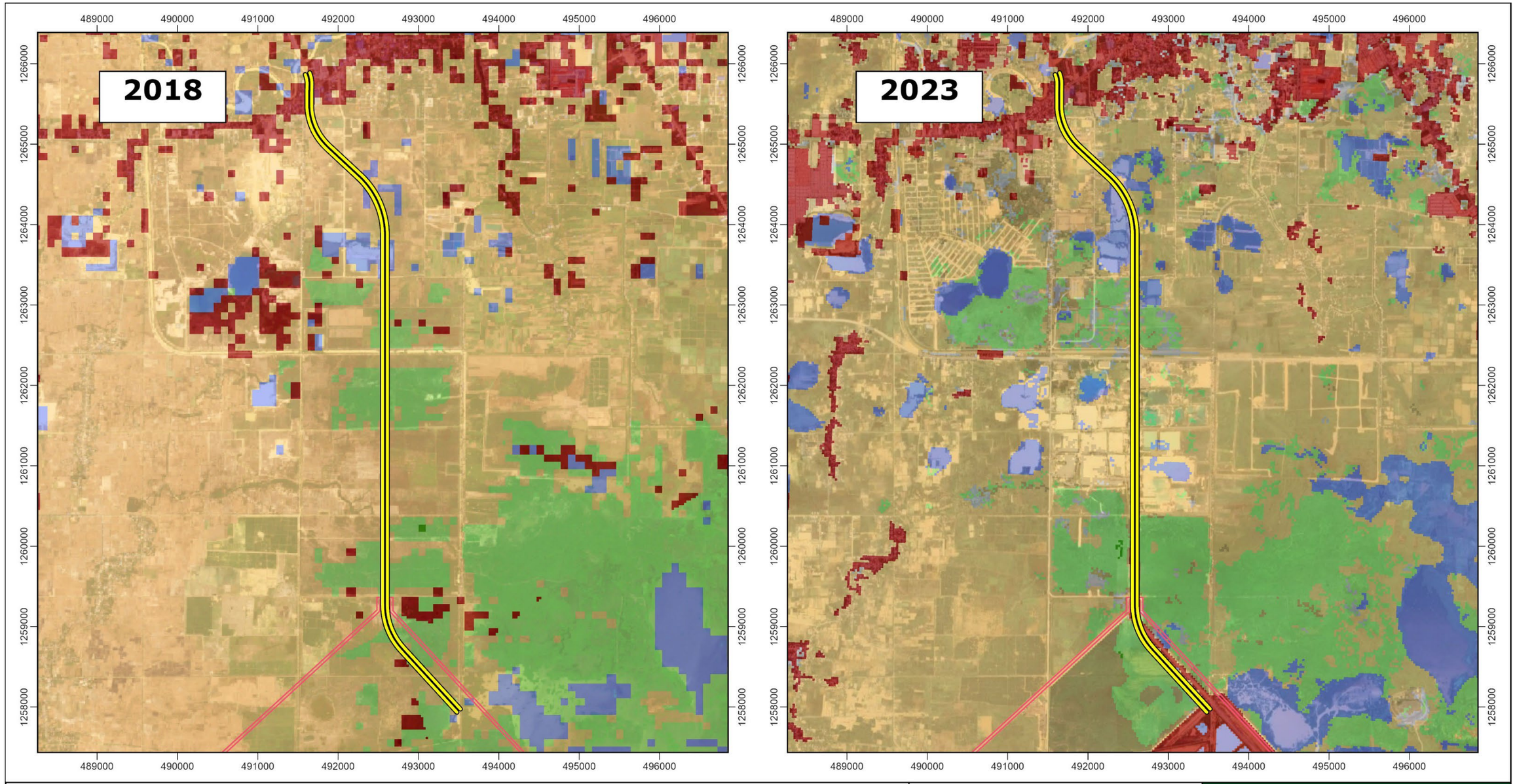
IFC Performance Standard 6 (PS6) provides the following definition of Natural and Modified Habitat:

- **Natural Habitat**: Natural habitats are areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition.[3]
- **Modified Habitat**: Modified habitats are areas that may contain a large proportion of plant and/or animal species of non-native origin, and/or where human activity has substantially modified an area's primary ecological functions and species composition. Modified habitats may include areas managed for agriculture, forest plantations, reclaimed coastal zones, and reclaimed wetlands.[4]

Based on the presence of habitats classified by land cover, the area surrounding the access road is predominantly categorized as agricultural land or modified habitat, with small fractions of wetland, as shown in ***Figure 6-2***. Comparing land cover data from 2018 to 2023, the wetland patches around the access road have been converted to agricultural use, with only small areas of wetland remaining in the vicinity of the road. As a result, the species likely to occur within this area are those that can adapt to modified habitat. These species are not expected to be sensitive to habitat changes or disturbances

[2] Paragraph 9. IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources (2012)
[3] Paragraph 13. IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources (2012)
[4] Paragraph 11. IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources (2012)

FIGURE 6-2 LAND COVER CHANGE BETWEEN 2016 – 2023 WITHIN 3 KM RADIUS BUFFER



Legend

- BO Main Road
- Airport Boundary

Land Cover Type

- Forest
- Agriculture
- Grass/Shrub Land
- Wetland
- Others
- Water
- Built up Area

0 2 4 km

N

Scale: 1:50,000

Coordinate System: WGS 1984 UTM Zone 48N

Service Credit: © OpenStreetMap (and) contributors, CC-BY-SA

Data Source(s):
1. Land Cover (2018 and 2023) from OpenDevelopment Cambodia and Modified by ERM

Land Cover Change, 2018 - 2023

0730380 Phnom Penh Airport
Client: Cambodia Airport Investment Co., Ltd.
Date: 20/12/2024
Drawn By: NS
Review By: AW

ERM

6.2.2 LEGALLY PROTECTED AREA AND AREAS OF BIODIVERSITY SIGNIFICANCE

Protected Areas (PAs) are defined by the International Union for the Conservation of Nature (IUCN) as clearly defined geographical space, recognized dedicated and managed through legal or other effective means to achieve the long-term conservation of nature, with associated ecosystem services and cultural values.[5]

Key Biodiversity Areas (KBA) are defined by the Key Biodiversity Areas Partnership as sites that contribute significantly to the global persistence of biodiversity, applicable to terrestrial, freshwater, and marine ecosystems.[6,7] Sites qualify as global KBAs if they meet one or more of 11 criteria as defined by the Partnership, grouped into the following five categories: threatened biodiversity, geographically restricted biodiversity, ecological integrity, biological processes and irreplaceability.

KBAs can include Important Bird and Biodiversity Areas (IBA), Alliance for Zero Extinction (AZE), Important Plant Areas (IPA) and Important Sites for Freshwater Biodiversity. An Important Bird and Biodiversity Area (IBA) is an area that is globally important for the conservation of birds and other biodiversity.

As the access road is intended to attach the airport in Kandal province, Cambodia, the road has been designed to avoid any legally protected areas or internationally recognized areas such as Key Biodiversity Areas (KBAs). Within a 50 km buffer of the Project, three (3) KBAs have been identified, with the nearest is located approximately 10 km to the east. The name list of KBAs and distance to the areas are given in ***Table 6-2***.

TABLE 6-2 SUMMARY OF KEY BIODIVERSITY AREAS WITHIN 50 KM RADIUS BUFFER

No.	KBA Name	Distance from the Project
1.	Bassac Marsh	10 km
2.	Basset Marsh	33 km
3.	Boeung Veal Samnap	24 km

6.3 SOCIAL RESOURCES

6.3.1 SOCIO-ECONOMIC

As the Access Road is located in the same district as the Techo International Airport, the socio-economic characteristics of the communities surrounding the Access Road, are the same as the Airport site. The socio-economic baseline is outlined under Chapter 5.3 of the EIA conducted by E&A (NPPIA, 2020)[8].

[5] IUCN (2008), Guideline for applying protected area management categories.

[6] Key Biodiversity Partnership comprises a consortium of 12 conservation NGOs including BirdLife International, IUCN, Amphibian Survival Alliance, Conservation International, Critical Ecosystem Partnership Fund, Global Environment Facility, Global Wildlife Conservation, NatureServe, Rainforest Trust, Royal Society of the Protection of Birds, WWF and Wildlife Conservation Society.

[7] BirdLife International (2018) What are KBAs and how are they identified? Retrieved from http://www.keybiodiversityareas.org/what-are-kbas

[8]Environmental and Social Impact Assessment (ESIA) on the Construction of New Phnom Penh International Airport (NPPIA)

Livelihoods

The main types of occupation in the Project area are farmers, poultry farmers, vendors, repairers, factory-workers, civil servants, transportation workers, construction workers, fishermen, NGO staff and agricultural labourers. Majority of the people in the Project area are farmers (25%) and vendors (19%). Although households in the study area have other main occupations, many of them still undertake farming as their secondary occupation[9].

The stakeholder consultations conducted by E&A validated the data collected from secondary sources and confirmed that the main forms of livelihood are farming, fishing and running small businesses. Majority of the interviewees (both community members and local authorities) expressed hope that the Project would offer opportunities for local people to work in the airport and provide additional or necessary training.

The average annual income of households in the Project area is 2,381,024 riels ($595.25 USD) per month while the average monthly expenditure is 1,379,160 riels ($344.75 USD).

Irrigation sources are important for agriculture. The rice production in the wet season uses rain water, while in dry season water for irrigation is sourced from the Tonle Bati and Stung Prek Tnot rivers for farmers in Kandal Steung District, while farmers in Potsor Commune use water from the Hun Sen Potsar irrigation system, which originates from the Tonle Bati River.

6.3.2 LAND ACQUISION

Displacement is defined by the IFC as:

"Displaced persons may be classified as persons (i) who have formal legal rights to the land or assets they occupy or use; (ii) who do not have formal legal rights to land or assets, but have a claim to land that is recognized or recognizable under national law; 19 or (iii) who have no recognizable legal right or claim to the land or assets they occupy or use. The census will establish the status of the displaced persons."

Economic displacement and impact on livelihoods are inextricably linked concepts. Economic displacement is defined by the IFC as, *"…loss of assets or access to assets that leads to loss of income sources or other means of livelihood."* (IFC, 2012).

The land acquisition for the Access Road has resulted in both physical and economic displacement. Based on secondary data collected, the process has led to concerns over unfair compensation for the surrounding communities.[10]

The Access Road was developed on primarily agricultural and residential land consisting of 79.15 hectares (ha).

At least 26 households were impacted by land acquisition for the Access Road. The affected households fall under 6 categories:

1) Physically and Economically Displaced (With No Land Titles)

2) Physically Displaced (With Hard Land Titles)

3) Economically Displaced (With Hard Land Titles)

[9] Commune data, 2018

[10] Stiftung Asienhaus Study. 2024. A Kingdom for an Airport. Stiftung_Asienhaus_Study_A_Kingdom_for_an_airport_web.pdf

4) Economically Displaced (With Soft Land Titles)

5) Informal Land Users

The land acquisition process utilized differed based on the categories listed above. The breakdown of number of households, compensation provided and the process which was followed is outlined below.

Physically and Economically Displaced (With No Land Titles)

TABLE 6.3 PHYSICALLY AND ECONOMICALLY DISPLACED HOUSEHOLDS (WITH NO LAND TITLES)

No. of Households	Area (ha)	Status	Compensation
18	Unavailable	Acquired	**Option 1:** 1) A plot of land equivalent to 0.01 ha (5 m x 20 m) in a compound located in Kampong Talong Village, Boueng Khyang Commune, Kandal Stung District, Kandal Province. a. Hard land title for the land plot. 2) A 5 m x 8 m single story house with a tin roof. a. The compound has been connected to the electricity grid and water supply. b. Drainage and roads constructed. c. Kindergarten for children built. **Option 2:** Lump sum payment of $2000 USD.

Land Acquisition Process

CAIC established a committee to gather data and identify the houses. CAIC then informed the households they would be displaced as a result of the Project. Of the 18 households, 17 households chose the plot of land (Option 1), while 1 household chose the cash compensation (Option 2). According to CAIC, since the households were living on Public State Land they were not entitled to compensation.

Physically Displaced (With Hard Land Titles)

TABLE 6.4 PHYSICALLY DISPLACED HOUSEHOLDS (WITH HARD LAND TITLES)

No. of Households	Area (ha)	Status	Compensation
5	0.39 ha	Acquired	• Land for land exchange - a plot of land the same size as the existing land was offered. • Compensation for other assets provided based on valuation.

Land Acquisition Process

CAIC identified the houses using satellite imagery, then started discussions with the households. A team from CAIC and the Village Chief went to each house and conducted an assessment to determine the value of the house and any other assets on the property. The engineering team from CAIC identified each asset including the type and quantity of crops and trees. They then determined the unit value of each asset based on their professional judgement and estimated the total compensation. All documents including the total proposed compensation was brought to a committee at the Ministry of Land Management, Urban Planning and Construction (MoLMUP) for approval. The committee included representatives from the MoLMUP, the Provincial Land Department and local authorities. Once the approval on the proposed compensation was approved by the committee, CAIC approached each household with an offer. A negotiation process was then undertaken between CAIC and the households - with oversight from the local authorities - until an agreement was reached. All of the households agreed to the compensation.

Economically Displaced (With Hard Land Titles)

TABLE 6.5 ECONOMICALLY DISPLACED HOUSEHOLDS (WITH HARD LAND TITLES)

No. of Households	Area (ha)	Status	Compensation
3 (Tailor Shop, Motorcycle Repair Shop, Cafe)	Approximately 0.09 ha	Acquired	• Tailor shop: cash compensation of USD 146,294.28 and 392m^2 plot of land located east of Samdech Techo Hun Sen Boulevard (60m Road). • Motorcycle repair shop: cash compensation of USD 75,140.12 and 390m^2 plot of land located sast of Samdech Techo Hun Sen Boulevard (60m Road). • Cafe: cash compensation of USD 25,184.12 and 114m^2 plot of land located east of Samdech Techo Hun Sen Boulevard (60m Road).

Three households were economically displaced due to having to relocate their businesses; a tailor shop, a motorcycle repair shop and a café. A team from CAIC and the Village Chief went to each house and conducted an assessment to determine the value of the business and any

other assets on the property. The engineering team from CAIC identified each asset. They then determined the unit value of each asset based on their professional judgement and estimated the total compensation. All documents including the total proposed compensation was brought to a committee at the Ministry of Land Management, Urban Planning and Construction (MoLMUP) for approval. The committee included representatives from the MoLMUP, the Provincial Land Department and local authorities. Once the approval on the proposed compensation was approved by the committee, CAIC approached each household with an offer. A negotiation process was then undertaken between CAIC and the households - with oversight from the local authorities - until an agreement was reached. All of the households agreed to the compensation.

Economically Displaced (With Soft Land Titles) and Informal Land Users

There is no information available on economically displaced people with soft land titles or informal users who may have been economically displaced.

6.3.3 INDIGENOUS PEOPLES

As per the ESIA Addendum for the Techo International Airport, there are no Indigenous Peoples (IPs) located within Kandal or Phnom Penh Provinces, with the closest Indigenous People located in Kampong Speu Province, approximately 84 km from the Project site. As a result, the Project is not expected to impact Indigenous Peoples and therefore does not trigger IFC PS 7. The only identified ethnic minority in Kandal Province is the Cham. While they are a distinct group with their own language and cultural practices, they are not considered Indigenous Peoples under IFC PS 7. However, due to their vulnerability and historical persecution, they should be treated as a vulnerable/disadvantaged group and receive additional support in the resettlement and livelihood restoration plans.

6.3.4 CULTURAL HERITAGE

As per the ESIA Addendum for the Techo International Airport, no significant intangible or tangible cultural heritage was identified in the Project area. This is due to the predominantly agricultural nature of the land, its proximity to the capital, and the absence of Indigenous Peoples in the area. Stakeholder consultations during the Environmental Impact Assessment (EIA) process also did not identify any intangible cultural heritage.

7. IMPACT ASSESSMENT AND PROPOSED MITIGATION MEASURES

This section assesses the manner in which the Project will interact with elements of the physical, ecological or social environment to produce impacts to resources/ receptors. It has been organized as per the construction and operational phases of the project life cycle to understand the risks and impacts associated with each phase.

7.1 CONSTRUCTION PHASE

Construction phase impacts have already occurred. The key impacts are described below.

7.1.1 PHYSICAL RESOURCES

This section presents the physical impact assessment for the construction phase of the Access Road. ***Table 7-2*** provides a summary of the residual impact significance.

TABLE 7-1 PHYSICAL RESIDUAL IMPACT SIGNIFICANCE IN CONSTRUCTION PHASE

Impact Type	Residual Impact Significance
Impacts on Soil	**Minor**, construction activities such as excavation, grading, and vegetation clearing can disturb soil structure, cause erosion, and result in localized changes in landform. Soil compaction and contamination from construction activities may occur. However, as the site was mainly agricultural and residential, with the implementation of erosion control measures, proper site management, and rehabilitation of disturbed areas, the residual impacts on geology and soils should be minor.
Impacts on Air Quality	**Moderate,** dust generation from construction activities, vehicle emissions, and machinery operations degrade air quality temporarily, particularly during the dry season. While mitigation measures like dust suppression and vehicle maintenance can reduce impacts, the proximity of construction to sensitive receptors such as houses and small businesses may still result in moderate residual impacts.
Impacts on Noise	**Moderate**, construction equipment including the use of heavy machinery, vehicle movement, and material handling and increased traffic result in elevated noise levels, particularly during site preparation and paving. These impacts are expected to extend beyond the immediate construction zone and may affect nearby communities and sensitive receptors such as schools or residences. Although mitigation measures—such as restricting work to daytime hours and maintaining equipment can reduce the intensity of noise, the cumulative effect of prolonged construction activities warrants a moderate residual significance.
Impact on Surface Water Quality	**Minor**, construction activities near water bodies can lead to sediment runoff and contamination from fuel or chemicals. Proper water management, and spill prevention protocols can minimize impacts, resulting in minor residual significance.
Impacts on Groundwater Quality	**Minor,** potential contamination from spills or leaks of fuel, oil, or chemicals during construction may pose risks to groundwater quality. Mitigation measures such as proper storage and handling of hazardous materials will minimize these risks, leading to minor residual impacts.

7.1.2 BIOLOGICAL RESOURCES

This section presents the biological impact assessment for the construction phase of the Access Road. ***Table 7-2*** provides a summary of the residual impact significance.

TABLE 7-2 BIOLOGICAL RESIDUAL IMPACT SIGNIFICANCE IN CONSTRUCTION PHASE

Impact Type	Residual Impact Significance
Impacts on the Legally Protected Area and Internationally Recognized Areas	**Not applicable**, as the access road is not located within any legally protected areas and KBAs.
Impacts on Terrestrial and Aquatic Habitat Loss and Degradation	**Negligible**, as the area of disturbance is limited to small area that will be converted to the access road, which is surrounded by modified areas categorized as cropland, aquaculture and built-up areas.
Impacts on Critical Habitat Triggered Species Disturbance	**Negligible**, as the habitat loss caused by the Project is not high and occurs in an already modified area. Therefore, it is unlikely to contain critical habitat for species, based on IFC PS6 criteria.
Impacts on Terrestrial and Aquatic Species Disturbance and Displacement	**Negligible**, as the disturbance and displacement of resident species are considered indirect impacts caused using machinery and equipment during road construction. These impacts are not expected to extend across multiple breeding seasons, and noise and light are likely to remain within limited area, which is surrounded by modified habitat.
Impacts on Terrestrial Species Direct Mortality Caused by Vehicle Strike, Hunting and Poaching	**Negligible**, as the surrounding habitat is mostly classified as modified habitat, and road construction may mainly affect to less mobile species, such as snakes. While construction could potentially increase hunting or poaching pressure due to the presence of the workforce, the presence of modified habitat supports few species that would be target for hunting.

7.1.3 SOCIAL RESOURCES

The assessment of potential social impacts associated with the Project is outlined in the following sections.

7.1.3.1 ASSESSMENT APPROACH AND CRITERIA

To further contextualize the definitions of *magnitude* and *sensitivity* as used in the assessment of potential social impacts, refer to ***Table 7.3*** and ***Table 7.4*** below.

TABLE 7.3 DEFINITION OF MAGNITUDE CRITERIA

Magnitude	Definition
Negligible	▪ Change remains within the range commonly experienced within the household or community.
Small	▪ Perceptible difference from baseline conditions. Tendency is that the impact is local, rare and affects a small proportion of receptors and is of a short duration.

Magnitude	Definition
Medium	▪ Clearly evident difference from baseline conditions. Tendency is that the impact affects a substantial area or number of people and/or is of medium duration. Frequency may be occasional, and the impact may potentially be regional in scale.
Large	▪ Change dominates over baseline conditions. Affects the majority of the area or population in the Project area and/or persists over many years. The impact may be experienced over a regional or national area.
Positive	▪ In the case of positive impacts, it is generally recommended that no magnitude be assigned, unless there is ample data to support a more robust characterisation. It is usually sufficient to indicate that there will be a positive impact, without characterising the exact degree of positive change likely to occur.

TABLE 7.4 DEFINITION OF SENSITIVITY CRITERIA

Sensitivity	Definition
Low	• Minimal vulnerability; consequently with a high ability to adapt to changes brought by the Project and opportunities associated with it.
Medium	• Some but few areas of vulnerability; but still retaining an ability to at least in part adapt to change brought by the Project.
High	• Profound or multiple levels of vulnerability that undermine the ability to adapt to changes brought by the Project.

Media Review

A media review was conducted to understand stakeholder perceptions regarding the Project and to identify any concerns or complaints which have been raised through a public platform. The following articles were reviewed:

- Mega airport project leaves hundreds of affected families struggling livelihood | CamboJA News;
- Hundreds of people block road as airport project damages rice crops | CamboJA News;
- Despite lack of resolution in dispute, authorities block roads, let OCIC begin clearing residents' farmland for mega airport project | CamboJA News;
- New airport developer begins clearing farmland, though compensation hasn't been finalized | CamboJA News;
- Techo Airport Dispute, Gun Fire and Land Clearings Fuel Electoral Discontent (vodenglish.news);
- Residents Near New Phnom Penh Airport Site Protest Land Settlement | CamboJA News;
- Ampov Prey Residents Protest Against New Phnom Penh Airport Project For Erecting Poles Again | CamboJA News;
- Canal 94 Residents Fear Flooding From Sand Filling, Four Villages Submit Petition | CamboJA News; and
- Some 200 Canal 94 Residents Submit Petition to Land Management Ministry, Seek Own Land Titles | CamboJA News.

Table 7.5 provides a summary of the complaints/concerns raised by various stakeholders related to land acquisition and livelihoods.

TABLE 7.5 MEDIA REVIEW SUMMARY

Stakeholder Allegations and Concerns	PS 5 Requirements
Forced eviction	Forced evictions will not be carried out except in accordance with law and the requirements of this Performance Standard.
Assets seized	The Performance Standard requires that non-land assets be retained, compensated for, or replaced for people who do not have rights over the land they occupy. Relocation to take place with security of tenure. Lost livelihoods to be restored.
Clearing of land prior to the land acquisition process being resolved	Forced evictions will not be carried out except in accordance with law and the requirements of this Performance Standard.
Loss of livelihoods	In cases where land acquisition or restrictions on land use affect commercial structures, affected business owners will be compensated for the cost of reestablishing commercial activities elsewhere, for lost net income during the period of transition, and for the costs of the transfer and reinstallation of the plant, machinery, or other equipment. For persons whose livelihoods are land-based, replacement land that has a combination of productive potential, locational advantages, and other factors at least equivalent to that being lost should be offered as a matter of priority.
Loss of income	When displacement cannot be avoided, the client will offer displaced communities and individuals' compensation for loss of assets at full replacement costs and other assistance to help them improve or restore their standards of living or livelihoods, as provided in this PS. Compensation standards will be transparent and applied consistently to all communities affected by the displacement.
Inadequate land compensation/inability to purchase land nearby	In cases affecting persons with legal rights or claims to land which are recognized or recognizable under national law (see paragraph 17 (i) and (ii)), replacement property (e.g., agricultural or commercial sites) of equal or greater value will be provided, or, where appropriate, cash compensation at full replacement cost. If circumstances prevent the client from providing land or similar resources as described above, alternative income earning opportunities may be provided, such as credit facilities, training, cash, or employment opportunities. Cash compensation alone, however, is frequently insufficient to restore livelihoods.
Do not want to relocate	Forced evictions will not be carried out except in accordance with law and the requirements of this Performance Standard.
Clearing of structures with no compensation	The Performance Standard requires that non-land assets be retained, compensated for, or replaced for people who do not have rights over the land they occupy. Relocation to take place with security of tenure. Lost livelihoods to be restored.

Stakeholder Allegations and Concerns	PS 5 Requirements
Loss of access to water resources	For persons whose livelihoods are natural resource-based and where project-related restrictions on access envisaged in paragraph 5 apply, implementation of measures will be made to either allow continued access to affected resources or provide access to alternative resources with equivalent livelihood-earning potential and accessibility. Where appropriate, benefits and compensation associated with natural resource usage may be collective in nature rather than directly oriented towards individuals or households.
Lack of consultations with affected groups	The client will engage with Affected Communities through the process of stakeholder engagement described in PS1. IFC PS1 states that when affected communities are identified as being at risk and having adverse impacts from a Project, the client will go through a process of consultation to provide those affected with opportunities to express their views on Project impacts, risks, and mitigation measures. Effective consultation is a two-way process that should be based on prior disclosure and dissemination of transparent, relevant, objective, meaningful and easily accessible information; it also should enable meaningful participation.
Lack of adequate information	Disclosure of relevant information and participation of the affected communities and people are to be done throughout the planning, implementation, monitoring, and evaluation of compensation payments, resettlement, and livelihood restoration activities to produce results that align with the objectives of PS5.
Loss of housing	When displacement cannot be avoided, the client will offer displaced communities and individuals' compensation for loss of assets at full replacement costs and other assistance to help them improve or restore their standards of living or livelihoods, as provided in this PS. Compensation standards will be transparent and applied consistently to all communities affected by the displacement.
Concerned about flooding	Not specific to PS5 - gaps fall under PS3
Request land titles	In cases where affected persons reject compensation offers that meet the requirements of this Performance Standard and, as a result, expropriation or other legal procedures are initiated, the client will explore opportunities to collaborate with the responsible government agency, and, if permitted by the agency, play an active role in resettlement planning, implementation, and monitoring (see paragraphs 30–32).

Gap Assessment

Based on the media review and the information provided by CAIC, a detailed gap assessment was conducted against Cambodian regulations and IFC PS 5.

TABLE 7.6 GAP ASSESSMENT AGAINST PS 5

Category	Cambodian Regulations	IFC PS 5	Gap
Project Design	Cambodian regulations do not explicitly mandate considering alternative Project designs to avoid or minimize physical and/or economic displacement.	The client will consider feasible alternative Project designs to avoid or minimize physical and/or economic displacement, while balancing environmental, social, and financial costs and benefits.	No alternative Project designs were considered to avoid or minimize physical and/or economic displacement or to minimize risk and impact related to land acquisition and resettlement.
Census	Article 16 (Expropriation Law) states that "Prior to making any expropriation Project proposal, the Expropriation Committee shall conduct a public survey by recording of a detailed description of all entitlements of the owners of and/or of the holder of real right to immovable property and other properties subject to compensation as well as recording of all relevant issues;… the Expropriation Committee shall produce a report with recommendations and submit it to the Royal Government for approval."	A census is to be carried out when involuntary resettlement is unavoidable to collect socio-economic baseline data to identify the displaced people, determine who is eligible for assistance and compensation, and discourage those ineligibles, from claiming any benefits.	No census was carried out to collect socio-economic baseline data or to identify the displaced people and determine who is eligible for compensation.
Eligibility	The 2007 CIRCULAR No. 02 S.R related to illegal occupation of State land states that persons who have no recognizable legal right or claim to the land are ineligible for compensation. Article 23 (Expropriation Law) clarifies that the owner of and/or holder of real right to the immovable property shall be entitled to compensation for any actual damage to the immovable property incurred from the date of the issuance of the declaration on the expropriation Project, which is the cut-off date for being entitled to the fair and just compensation.	Displaced persons may be classified as persons (i) who have formal legal rights to the land or assets they occupy or use; (ii) who do not have formal legal rights to land or assets but have a claim to land that is recognized or recognizable under national law; or (iii) who have no recognizable legal right or claim to the land or assets they occupy or use.	Informal land users were not identified or provided with any form of compensation.

Category	Cambodian Regulations	IFC PS 5	Gap
Compensation and Benefits for Displaced Persons	Article 23 (Expropriation Law) clarifies that the owner of and/or holder of real right to the immovable property shall be entitled to compensation for any actual damage to the immovable property incurred from the date of the issuance of the declaration on the expropriation Project, which is the cut-off date for being entitled to the fair and just compensation. Article 22: The amount of compensation shall depend on the market price or replacement cost as of the date of the issuance of the declaration on the expropriation Project. The market price or the replacement cost shall be determined by an independent committee or agent appointed by the Expropriation Committee. There is no clear requirement for providing assistance to help the affected people to restore their standards of living or livelihoods.	When displacement cannot be avoided, the client will offer displaced communities and individuals' compensation for loss of assets at full replacement costs and other assistance to help them improve or restore their standards of living or livelihoods, as provided in this PS. Compensation standards will be transparent and applied consistently to all communities affected by the displacement.	Physically and economically displaced households with no land titles were not provided with compensation for loss of assets at full replacement costs or any other assistance to help them improve their standards of living. Physically displaced households with land titles were provided with compensation but the valuation of their assets was conducted by CAIC instead of by a third party and the method for the valuation is unclear. Compensation for loss of assets was not provided at replacement cost. It is unclear how the government determined the compensation per square meter for economically displaced households with hard and soft land titles.
Compensation for non-title holders	The 2007 CIRCULAR No. 02 S.R related to illegal occupation of State land states that persons who have no recognizable legal right or claim to the land are ineligible for compensation. There is no clear requirement for providing assistance to help the affected people to restore their standards of living or livelihoods.	The Performance Standard requires that non-land assets be retained, compensated for, or replaced for people who do not have rights over the land they occupy. Relocation to take place with security of tenure. Lost livelihoods to be restored.	Non-land assets were not compensated for, or replaced for people who do not have rights over the land they occupy. Lost livelihoods were not restored. No compensation for crops was provided.

Category	Cambodian Regulations	IFC PS 5	Gap
Cut-Off date	Article 17 (Expropriation Law) states that "… the Expropriation Committee shall issue a Declaration on the expropriation Project [cut-off date] informing clearly the owner of and/or holder of real right to the immovable property about the immovable property subject to expropriation…" Article 30 (Expropriation Law) states that "From the date of the declaration of the expropriation Project [cut-off date], the owner of and/or holder of real right to the immovable property shall not sell or transfer the immovable property to other persons. Any document and procedure contradictory to this provision are deemed to be null and void; … there shall not be any additional construction on the land. For any activity contradictory to this provision, the owner of and/or holder of real right to the immovable property shall not be entitled to any compensation for such additional construction."	Where the host country lacks the procedures, the client will establish a cut-off date for eligibility. The information should be well documented and disseminated throughout the Project area. It is not a requirement to compensate or assist those who have occupied the area after the cult-off date once the date has been clearly established and made public.	No cut-off date was established.
Community Engagement	Article 16 of the Expropriation Law requires the Expropriation Committee to organize public consultations at the Capital, Municipal, Provincial, and District authority levels with Commune/ Sangkat councils and village or community representatives to be affected by the expropriation to provide specific and concise information and collect inputs from all stakeholders regarding the proposed basic public infrastructure Project.	The client will engage with Affected Communities through the process of stakeholder engagement described in PS1. IFC PS1 states that when affected communities are identified as being at risk and having adverse impacts from a Project, the client will go through a process of consultation to provide those affected with opportunities to express their views on Project impacts, risks, and mitigation measures. Effective consultation is a two-way process that should be based on prior disclosure and dissemination of transparent, relevant, objective, meaningful and easily accessible information; it also should enable meaningful participation.	No minutes of meeting available. Unclear how many rounds of stakeholder consultations were conducted. No Stakeholder Engagement Plan was developed.

Category	Cambodian Regulations	IFC PS 5	Gap
Information Disclosure	There is no clear requirement for information disclosure.	Disclosure of relevant information and participation of the affected communities and people are to be done throughout the planning, implementation, monitoring, and evaluation of compensation payments, resettlement, and livelihood restoration activities to produce results that align with the objectives of PS5.	It is unclear how information was disclosed and disseminated to affected communities.
Grievance Mechanism	Article 14 (Expropriation Law) states that a Grievance Redress Committee shall be established and led by a representative from the Ministry of Land Management, Urban Planning and Construction, and composed of representatives from relevant ministries/institutions. The owner and/or the rightful owner who do not agree with a decision by the Expropriation Committee can bring their complaints to the Grievance Redress Committee (GRC) (Article 33 of Expropriation Law). If the decision of the GRC is not accepted by the complainants, they can bring their complaint to the competent court (Article 34 of Expropriation Law). Article 32 (Expropriation Law) states that the Expropriation Committee and the Grievance Redress Committee shall have the competence to review and resolve the complaint.	A grievance mechanism consistent with PS1 is to be established by the Project owner as early as possible in the Project development phase. This is to ensure that specific concerns about compensation and relocation are addressed in a timely fashion. A recourse mechanism design is included to resolve disputes in an impartial manner.	An informal grievance mechanism was developed which entails affected individuals submitting their complaints to the local authorities. No formal grievance mechanism was established. According to CAIC no grievances have been filed.

Category	Cambodian Regulations	IFC PS 5	Gap
Resettlement and Livelihood Restoration planning and Implementation	Article 16 (Expropriation Law) states that "Prior to making any expropriation Project proposal, the Expropriation Committee shall conduct a public survey by recording of a detailed description of all entitlements of the owners of and/or of the holder of real right to immovable property and other properties subject to compensation as well as recording of all relevant issues;… the Expropriation Committee shall produce a report with recommendations and submit it to the Royal Government for approval."	Where involuntary resettlement is unavoidable, a census will be carried out to collect appropriate socio-economic baseline data to identify the persons who will be displaced by the Project, determine who will be eligible for compensation and assistance.	No census was conducted to collect appropriate socio-economic baseline data, or to identify the persons who will be displaced by the Project.
	There is no clear requirement for monitoring and assessing resettlement outcomes.	The client will establish procedures to monitor and evaluate the implementation of a Resettlement Action plan or Livelihood Restoration Plan and take corrective action as necessary.	No Resettlement Action Plan or Livelihood Restoration Plan was developed.
Displacement	No definition of displaced persons in the Cambodian regulations.	Displaced persons can be identified as follows 1. who have formal legal rights to the land or assets they occupy or use. 2. who do not have formal legal rights to land or assets but have a claim to land that is recognized or recognizable under national law. 3. who have no recognizable legal right or claim to the land or assets they occupy or use. The census will establish the status of the displaced persons. Project-related land acquisition and/or restrictions on land use may result in the physical displacement of people as well as their economic displacement.	Both physical and economic displacement occurred as a result of the Project.

Category	Cambodian Regulations	IFC PS 5	Gap
Forced Eviction	Not stipulated in Cambodian regulations.	Forced evictions will not be carried out except in accordance with law and the requirements of this Performance Standard.	Property of affected people was destroyed prior to the land acquisition process being completed.
Monitoring and evaluation	There is no clear requirement for monitoring and assessing resettlement outcomes.	Procedures to monitor and evaluate implementation of the LARAP or Livelihood Restoration Plan (LRP) will be established by the Project owner. The extent of monitoring activities will be commensurate with the Project's impacts and risks. Once the agreed monitoring period is concluded, the completion audit can be taken place by competent resettlement professionals. Project owners will play an active role in monitoring.	No LARAP or LRP was developed.
Private Sector Responsibilities.	Not stipulated in Cambodian regulations.	The Project will collaborate with the responsible government agency, to the extent permitted by the agency where land acquisition and resettlement are the responsibility of the government. In the case of acquisition of land rights or access to land through compulsory means or negotiated settlements involving physical displacement, the client will identify and describe government resettlement measures. In case there is economic displacement involved, the Project compensates affected stakeholders.	There was no information provided on how the government determined the compensation amounts for each category of people affected by land acquisition.

7.1.3.2 IMPACT OVERVIEW

The social impacts resulting from the Airport Access Road are the same as the impacts from the Airport, outlined in the Social Impact Assessment of the ESIA Addendum. This section presents the social impact assessment for the construction phase of the Access Road. ***Table 7-2*** provides a summary of the residual impact significance.

TABLE 7-7 SOCIAL RESIDUAL IMPACT SIGNIFICANCE IN CONSTRUCTION PHASE

Impact Type	Residual Impact Significance
Impacts on Land Acquisition and Livelihoods	**Major**, the development of the Airport Access Road resulted in physical and economic displacement. Land acquisition disrupts agricultural activities, the primary livelihood for many, and forces affected households to transition to other forms of employment, often without the necessary skills, education, or resources. This transition, coupled with rising land prices, creates financial instability and forces families to migrate, fracturing social networks and diminishing cultural cohesion. Without effective mitigation, these impacts are likely to have long-term and permanent consequences on the affected communities' well-being and sense of place. At this point in time, a full land acquisition screening to identify impacts to landowners and land users who are affected by land acquisition for the Project has not yet been completed. Current understanding on the nature of impact, impacted groups, was used to conduct the impact assessment. This data will be further validated with additional studies which will be developed and implemented after the disclosure of the ESIA.
Impacts on Traffic and Transport	**Moderate**, the construction phase of the Access Road affects local communities along transportation routes. Construction activities contribute to congestion and raising the likelihood of accidents, particularly involving school children and motorcyclists. Given the country context, limited road infrastructure, and the presence of children as young as 13 driving motorcycles, the potential for traffic-related safety incidents is high. Even with mitigation measures such as traffic management plans, safety training, and scheduling adjustments will be implemented, residual impacts are anticipated

Impact Type	Residual Impact Significance
	to remain moderate due to the ongoing risks and disturbances to community members' daily activities.
Impacts on Community Health, Safety and Security	**Minor**, activities such as workforce mobilization, heavy machinery operation, and material transportation increase the risk of accidents and injuries to nearby residents. Dust, noise, and vibration generated during construction can lead to respiratory health issues, sleep disturbances, and structural damage to nearby buildings. The presence of construction workers may raise concerns about community safety, particularly if proper security measures and codes of conduct are not enforced. Additionally, improper waste disposal and potential spillages of chemicals or hydrocarbons could contaminate local water sources and soil, impacting community health. While these impacts are significant, they can be mitigated through strict adherence to health and safety protocols, community engagement, and effective waste and traffic management plans, reducing the residual impact to minor.

7.2 OPERATIONS PHASE

7.2.1 PHYSICAL RESOURCES

7.2.1.1 IMPACTS ON GROUNDWATER QUALITY

Source of Impact

The groundwater quality would be potentially affected by fuel and hazardous materials spills and leaks.

Significance of Impacts

Criteria for Assessing Impact Significance

The impact magnitude and receptor sensitivity criteria for groundwater quality has been provided in ***Table 7-8*** and ***Table 7-9***, respectively.

TABLE 7-8 CRITERIA FOR IMPACT MAGNITUDE FOR ASSESSMENT OF IMPACT TO WATER

	Extent / Duration / Scale / Frequency
Negligible	Immeasurable, undetectable or within the range of normal natural variation.
Small	Slight change in water quality expected over a limited area with water quality returning to background levels within a few metres and/or discharges are well within benchmark effluent discharge limits.
Medium	Temporary or localized change in water quality with water quality returning to background levels thereafter and/or occasional exceedance of benchmark effluent discharge limits.
Large	Change in water quality over a large area that lasts over the course of several months with quality likely to cause secondary impacts on marine ecology; and/or routine exceedance of benchmark effluent discharge limits.

TABLE 7-9 CRITERIA FOR WATER RECEPTOR SENSITIVITY

Category	**Designation / Importance / Vulnerability**
Low	Existing water quality is good and the ecological resources that it supports are not sensitive to a change in water quality.
Medium	Existing water quality already shows some signs of stress and/ or supports ecological resources that could be sensitive to change in water quality.
High	Existing water quality is already under stress and/ or the ecological resources it supports are very sensitive to change (secondary ecological or health impacts are likely).

Receptor Sensitivity and Impact Magnitude

The receptor sensitivity is considered **Medium** due to existing groundwater contamination by heavy metal (Arsenic), this makes the area particularly sensitive to changes in water quality, as nearby villages primarily rely on groundwater for cooking, bathing, and cleaning.

The EIA conducted by E&A stated that iron levels exceeded the standards in the monitoring results, however, this was mis-identified and Iron levels are below the stipulated parameters. The impacts on groundwater quality during operation is considered as **Medium** magnitude given that the airport's operation will require significant amounts of aviation and vehicular fuel and a variety of hazardous materials such as oils and degreasers to be transported. The impact will be localized and long-term.

Impact Significance

The impact significance for groundwater quality has been assessed as **Moderate**.

Additional Mitigation, Management, and Monitoring Procedures

The following mitigation and management measures are recommended:

- Develop and implement a groundwater monitoring program for the operation phase, to ensure groundwater quality is within the stipulated parameters;
- Transport all fuel oil in sealed and covered containers to prevent leakage;
- Implement regular inspections, repairs, and maintenance of equipment related to fuel storage and handling to prevent damage or fuel leakage;
- Develop and implement Emergency Preparedness and Response Plan;
- Develop and implement Hazardous Materials Management Plan;
- Prepare a spill kits/equipment and post spill procedure; and
- Clean up spills or leaks immediately,

Residual Impacts

Based on the above additional measures, the residual impact significance is expected to reduce to **Minor** for operation (***Table 7-10***).

Impacts Overview

The below table presents an overview of the impacts as described in this section:

TABLE 7-10 IMPACT ASSESSMENT FOR GROUNDWATER QUALITY: OPERATIONAL PHASE

Impact Significance					
Impact Nature	**Negative**	Positive	Neutral		
	Groundwater quality impact from fuel or hazardous materials leaks and spills during transportation is negative.				
Impact Type	**Direct**	Indirect	Induced		
Impact Duration	Temporary	Short-term	**Long-term**	Permanent	
Impact Extent	**Local**	Regional	International		
Impact Scale	Localized around the Project.				
Frequency	Impacts will arise intermittently from operation related activities.				
Impact Magnitude	Positive	Negligible	Small	**Medium**	Large

Impact Significance				
Resource Sensitivity	Low	**Medium**		High
Impact Significance	Negligible	Minor	**Moderate**	Major
Residual Magnitude	Negligible	**Small**	Medium	Large
Residual Impact significance	Negligible	**Minor**	Moderate	Major

7.2.1.2 IMPACTS ON SOIL QUALITY

Source of Impact

Soil quality would be potentially affected by fuel or hazardous materials leaks and spills.

Significance of Impacts

Criteria for Assessing Impact Significance

The impact magnitude and receptor sensitivity criteria for soil has been provided in ***Table 7-11*** and ***Table 7-12***, respectively.

TABLE 7-11 CRITERIA FOR IMPACT MAGNITUDE FOR ASSESSMENT OF IMPACT TO SOIL

Category	Extent / Duration / Scale / Frequency
Negligible	Soil quality changes correspond to the expected range. Change remains within the range commonly experienced within the household or community.
Small	The change in soil quality exceeds the expected. Perceptible difference from baseline conditions. Tendency is that impact is local, rare and affects a small proportion of receptors and is of a short duration.
Medium	Clearly evident difference from baseline conditions. Tendency is that impact affects a substantial area, ecosystem, or number of people and/or is of medium duration. Frequency may be occasional, and impact may potentially be regional in scale.
Large	Change in soil quality over a large area that lasts over the course of several months with quality likely to cause secondary impacts on ecosystems and nearest household or community. Affects the majority of the area or population in the area of influence and/or persists over many years. The impact may be experienced over a regional or national area.

TABLE 7-12 CRITERIA FOR SOIL RECEPTOR SENSITIVITY

Category	Designation / Importance / Vulnerability
Low	Existing soil quality is good and the ecological resources that it supports are not sensitive to a change in soil quality.
Medium	Existing soil quality already shows some signs of stress and/ or supports ecological resources that could be sensitive to change in soil quality.
High	Existing soil quality is already under stress and/ or the ecological resources it supports are very sensitive to change (secondary ecological or health impacts are likely).

Receptor Sensitivity and Impact Magnitude

The receptor sensitivity is considered **Low** as these sources are not unique or especially productive, and not sensitive to changes in soil conditions. Additionally, the airport surfaces are generally concrete. Concrete is impermeable, making soil contamination less likely and oil or fuel spills easier to manage compared to spills on soil. As such, the soil will be considered as **Small** magnitude.

Impact Significance

The impact significance for soil quality has been assessed as **Negligible**.

Additional Mitigation, Management, and Monitoring Procedures

The same measures as recommended for groundwater also apply to this section.

Residual Impacts

Based on the above additional measures, the residual impact significance is expected to remain at **Negligible** for operation (***Table 7-13***).

Impacts Overview

The below table presents an overview of the impacts as described in this section:

TABLE 7-13 IMPACT ASSESSMENT FOR SOIL QUALITY: OPERATIONAL PHASE

Impact Significance			
Impact Nature	**Negative**	Positive	Neutral
	Soil quality impact from fuel or hazardous materials leaks and spills during transportation is negative.		
Impact Type	**Direct**	Indirect	Induced

Impact Significance					
Impact Duration	Temporary	Short-term	**Long-term**	Permanent	
Impact Extent	**Local**	Regional	International		
Impact Scale	Localized around the Project.				
Frequency	Impacts will arise continuously from operation related activities.				
Impact Magnitude	Positive	Negligible	**Small**	Medium	Large
Resource Sensitivity	**Low**	Medium	High		
Impact Significance	**Negligible**	Minor	Moderate	Major	
Residual Magnitude	**Negligible**	Small	Medium	Large	
Residual Impact significance	**Negligible**	Minor	Moderate	Major	

7.2.2 BIOLOGICAL RESOURCES

7.2.2.1 IMPACT ASSESSMENT CRITERIA

The criteria for assessing both impact magnitude and receptor sensitivity for biodiversity are categorized and described in ***Table 7-14*** and ***Table 7-15***, respectively.

TABLE 7-14 CRITERIA FOR IMPACT MAGNITUDE FOR ASSESSMENT OF IMPACT TO BIODIVERSITY

Magnitude	Extent/ Duration/ Scale/ Frequency	
	Habitats	**Species**
Negligible	Immeasurable, undetectable or within the range of normal natural variation.	Immeasurable, undetectable or within the range of normal natural variation.
Small	May cause some minor impacts of limited extent, or to some elements of the area, are evident but easy to recover through natural regeneration.	May affect specific group of localized individuals within a population over a short time period (one generation or less) but does not affect other trophic levels or the population itself.
Medium	May affect some, if not all, of the area's ecological features, structures and functions in the short or medium term. The area or region may be able to recover through natural regeneration and restoration.	May affect a portion of a population and may bring about a change in abundance and/ or distribution over one or more generations but does not threaten the integrity of that population or any population dependent on it.
Large	May affect the integrity of an area or region, by substantially changing, in the long term, its ecological features, structures and functions, across its whole area, that enable it to sustain the habitat, complex of habitats and/or population levels of species that makes it important.	May affect an entire population or species in sufficient magnitude to cause a decline in abundance and/ or change in distribution beyond which natural recruitment (reproduction, immigration from unaffected areas) would not return that population or species, or any population or species dependent upon it, to its former level within several generations.

TABLE 7-15 CRITERIA FOR BIODIVERSITY RECEPTOR SENSITIVITY

Sensitivity	Designation / Importance / Vulnerability	
	Habitats	**Species**
Low	A habitat not protected by law nor has a national or international designated conservation status.	A species not protected by law and/or not considered threatened by the IUCN red list (i.e., not designated as VU, EN, or CR)

Sensitivity	Designation / Importance / Vulnerability	
	Habitats	**Species**
	Areas that may contain a large proportion of plant and/or animal species of non-native origin, and/or where human activity has substantially modified an area's primary ecological functions and species composition.	Not critical to other ecosystem functions (e.g. as prey to other species or as predator to potential pest species) or common / abundant locally.
Medium	A habitat that has designated conservation status at a national or regional scale. Areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition.	A species population that has designated conservation status at a national or regional scale. A species common globally but rare locally. Important to ecosystem functions or under threat or population in decline.
High	A habitat that has designated conservation status at an international scale (e.g. IUCN). Areas of particular biodiversity importance that may support populations of restricted range, endemic or endangered species, or is in itself unique or threatened.	A species population that has designated conservation status at an international scale (e.g. IUCN). A species that is globally rare. A keystone species fundamental to the functioning of the ecosystem.

7.2.2.2 TERRESTRIAL SPECIES DIRECT MORTALITY BY VEHICLE STRIKE

Receptor Sensitivity

The sensitivity of the species is **Medium** because the threatened species found (i.e., several snake species and the fishing cat) are only classified as vulnerable and are already acclimated to risks associated with modified habitats.

Impact Magnitude

The operation phase of access road may lead to increased wildlife mortality due to vehicle strikes. The road will be used to access airport, which may intersect either natural habitat or modified habitat. Vehicles moving at high speeds pose a significant risk to animals crossing these roads, leading to frequent collisions. These vehicle strikes not only result in the immediate death of individual animals but can also have broader ecological impacts, such as reducing local wildlife populations, and disrupting breeding cycles.

The magnitude of effect is considered **Negligible** given the predominance of modified habitat, the conversion of most of the habitat within the area of disturbance to develop the road may limit wildlife access to areas where they can be susceptible to vehicle strikes.

Impact Significance

A **Medium** receptor sensitivity combined with a **Negligible** impact magnitude result in an overall **Negligible** significance.

Additional Mitigation Measures

As the impact significance is assessed as **Negligible**, no additional mitigation measures are proposed.

Residual Impact Significance

The residual impact significance remains **Negligible** for fauna disturbance (***Table 7-16***)

TABLE 7-16 IMPACT ASSESSMENT FOR TERRESTRIAL SPECIES MORTALITY BY VEHICLE STRIKE

Impact Significance					
Impact Nature	**Negative**	Positive	Neutral		
	Potential impact to the rare and restricted-range species.				
Impact Type	**Direct**	Indirect	Induced		
Impact Duration	Temporary	Short-term	**Long-term**	Permanent	
Impact Extent	**Local**	Regional	International		
Impact Scale	The scale of the impact is likely to be local				
Frequency	Impacts will arise intermittently from the transportation of the passengers, materials and waste during the operation phase.				
Pre-mitigation impact Magnitude	Positive	**Negligible**	Small	Medium	Large
Resource Sensitivity	Low	**Medium**	High		
Pre-mitigation impact Significance	**Negligible**	Minor	Moderate	Major	
Residual Magnitude	**Negligible**	Small	Medium	Large	
Residual Impact significance	**Negligible**	Minor	Moderate	Major	

7.2.2.3 FAUNA DISTURBANCE FROM NOISE AND LIGHT DURING OPERATION

Receptor Sensitivity

The sensitivity of the species is **Medium** because the threatened species found (i.e., several snake species and the fishing cat) are only classified as vulnerable and are already acclimated to risks associated with modified habitats.

Impact Magnitude

The operation of the access road to the airport may disturb wildlife due to noise and lighting generated by transportation activities. Increased vehicle traffic can produce continuous noise, which may disrupt the natural behaviours of nearby wildlife, such as feeding, breeding, or movement patterns. Additionally, artificial lighting along the road can interfere with nocturnal species, impacting their foraging habits and increasing their vulnerability to predators. However, as the surrounding habitat has already been modified into cropland and aquaculture areas, the number of species present in the area is likely to be low and not sensitive to these impacts.

The magnitude of effect is considered **Negligible** given that the species present are already acclimated to modified habitat, several of the threatened species are not especially sensitive to noise impacts (e.g., several species of snakes).

Impact Significance

A **Medium** receptor sensitivity combined with a **Negligible** impact magnitude result in an overall **Negligible** significance.

Additional Mitigation Measures

As the impact significance is assessed as **Negligible**, no additional mitigation measures are proposed.

Residual Impact Significance

The residual impact significance remains **Negligible** for fauna disturbance (***Table 7-17***).

TABLE 7-17 IMPACT ASSESSMENT FOR FAUNA DISTURBANCE

Impact Significance				
Impact Nature	**Negative**	Positive	Neutral	
	Potential disturbance to the rare and restricted range species.			
Impact Type	**Direct**	Indirect	Induced	
Impact Duration	Temporary	Short-term	**Long-term**	Permanent
Impact Extent	**Local**	Regional	International	

Impact Significance					
Impact Scale	The scale of the impact is likely to be local within the airport boundary.				
Frequency	Impacts will arise intermittently from the operation of artificial lights at the airport facilities.				
Pre-mitigation impact Magnitude	Positive	**Negligible**	Small	Medium	Large
Resource Sensitivity	Low	**Medium**	High		
Pre-mitigation impact Significance	**Negligible**	Minor	Moderate	Major	
Residual Magnitude	**Negligible**	Small	Medium	Large	
Residual Impact significance	**Negligible**	Minor	Moderate	Major	

7.2.3 SOCIAL RESOURCES

7.2.3.1 LAND ACQUISITION AND LIVELIHHOODS

Significance of Impacts

Losing land and housing often results in families losing their livelihoods and income, which in turn impacts their physical and mental health. Displacement is widely acknowledged to be an incredibly stressful and traumatic event, which significantly impacts the mental health of those affected. The loss of income resulting from eviction, leads to urban poor families placing themselves in precarious situations for money, including migration for work or taking out loans with money lenders. When displacement occurs, social networks are scattered and close-knit communities which used to derive emotional and physical support from their neighbors, become disrupted. Communities and individuals may experience diminished social cohesion and cultural identity due to displacement. Resettlement has the potential to disturb currently cohesive communities. Additionally, through the process of resettlement, relocated people are separated, either temporarily or permanently, from spaces that hold community and cultural significance. These separations can diminish social cohesiveness as well as connection to cultural identity. With changes in community membership that result from resettlement activities, existing social safety nets may be weakened or lost. Social safety nets include informal but established patterns of caring for elders, impoverished or otherwise socioeconomically vulnerable individuals who may not have the means to meet their basic needs independent of community support. Vulnerable households without land ownership often rely on someone else's land for livelihood (land users). Losing land access will potentially result in increased vulnerability for such households. The "sense of place" concept is interactional and psychological, which makes it very difficult to move away from a place that one consider home. Land acquisition resulting in physical displacement is one of the most critical impacts to communities' sense of place. In addition, given the limited availability of replacement land and

the increased prices of land in the area, the likelihood of having to move to a different community is higher which adds to the impact.

Livelihoods

Infrastructure development often impact a multitude of place related values including land, traditional forms of livelihood and access to water bodies amongst others, which will be impacted by the Project. Numerous stakeholders, both community members and government representatives raised concerns related to loss of agricultural land and livelihoods during the consultations conducted as part of the EIA conducted by E&A. The concerns ranged from direct impacts such as losing their farmland to indirect impacts such as losing access to water bodies which the community depend on to irrigate their paddy fields.

Since the Project has been announced the land prices in the surrounding areas have increases drastically. Numerous private companies have already started to purchase or acquire farmland to establish businesses. Land prices are expected to continue to increase when the airport becomes operational, pricing out community members who have lost their land and making it unaffordable for them to purchase land in the surrounding areas. Majority of the people impacted will need to transition out of agriculture-based livelihoods into labor jobs or move to different provinces where agricultural land is more affordable. This comes with impacts on their "sense of place" - a concept which is an interactional and psychological which makes it very difficult to move away from a place that one consider home. Affected people will likely transition into labor jobs, however, this transition poses several challenges. Many farmers have limited education and skills suited to other sectors. Transitioning to jobs in urban centers or different industries may require training and education, which can be time-consuming and costly. The available jobs for unskilled laborers are often low-paying and precarious. These positions may not offer the same level of financial stability or job security as farming, leading to a decrease in the overall quality of life for these individuals. In search of employment, many might migrate to urban areas or other provinces. This migration can disrupt family structures and community ties, leading to social fragmentation and loss of cultural heritage. The migration of some men to urban centers and abroad will increase the number of women in agriculture, as well as contribute to an increase in female-headed households. However, women are more unlikely to have land registered in their name or obtain documentation to prove entitlement – which further magnifies the impact of land acquisition from future development Projects.

As the Project has resulted in public scrutiny, and there is not widespread public consent, social tensions may arise between Project opponents and proponents. These divisions may occur along the lines of stakeholders or community members who perceive themselves to be beneficiaries of Project development (employment opportunities, supply opportunities, or other economic benefits or compensation for losses which are considered fair and advantageous), and those who do not. Differences in lifestyle and levels of development present within the Project area may increase as certain members of communities secure work or supply opportunities with the Project, while others do not; this can also contribute to tension and intra-community divisions.

Based on the above, receptor sensitivity is considered *High*. The magnitude of impacts is expected to be local, but to affect a large proportion of receptors. In addition, there are expected to be additional impacts associated with the access road, reservoir/drainage and other

ancillary/associated facilities. The magnitude is considered to be *High*. The impact significance is therefore designated as **Major**.

Mitigation Management, and Monitoring Procedures

Due to expected physical and economic displacement, the Project triggers IFC Performance Standard 5 on Land Acquisition and Resettlement. CAIC has committed to **ceasing all land acquisition related to the Project until adequate measures are developed to fill the existing gaps and comply with international lenders' requirements.** The mitigation measures outlined in the Land Acquisition and Livelihoods Section of the ESIA Addendum Social Impact Assessment should include the households affected by the Airport Access Road such as:

- Develop and Implement a Stakeholder Engagement Plan
- Develop and Implement a Grievance Redress Mechanism
- Develop and implement a Resettlement Action Plan (RAP)
- Develop and implement a Livelihood Restoration Plan (LRP)
- Develop and implement a Compensation Policy

Residual Impacts

After implementation of the mitigation measures, receptor sensitivity will remain *high,* whilst magnitude of the impact will be reduced to *medium*. The impact significance will remain **Major** until monitoring of the mitigation measures determines that allegations surrounding land acquisition have been adequately resolved.

Impacts Overview

The below table presents an overview of the impacts as described in this section:

TABLE 7.18 IMPACTS ON LAND USE AND LIVELIHOOD

Impact Significance				
Project Phase	**Pre-Construction**	**Construction**	**Operation**	
	Land acquisition will occur during pre-construction and construction with other impacts likely to occur during operation.			
Impact Nature	**Negative**	Positive	Neutral	
	The change in land use will result in physical and economic displacement and impact on livelihoods.			
Impact Type	**Direct**	Indirect	Induced	
	The impact results from a direct interaction between the Project and receptors as the impacts on population within the SAoI are through resettlement, impacts on their use of land, economic displacement and/or change of livelihood they may experience, due to occupation of land plots by the Project.			
Impact Duration	Temporary	Short-term	Long-term	**Permanent**
	Impact is expected to be permanent. The removal of houses, businesses and agricultural land has permanent implications.			
	Local	Regional	International	

Impact Significance					
Impact Extent	Impact will be limited to the population within the Project Area.				
Frequency	The impact will occur once (i.e. Permanent acquisition of land will only occur once for the area required).				
Impact Magnitude	Positive	Negligible	Small	**Medium**	Large
	Based on current estimates, the impact is local and expected to affect a small number of people (i.e. those connected to the land to be acquired).				
Receptor Sensitivity	Low	Medium	**High**		
	High is selected as the vulnerability of receptors has been considered as part of their 'sensitivity'.				
Impact Significance	Negligible	Minor	Moderate	**Major**	
	Impact significance is **major**, however this may change if all mitigation measures proposed are implemented and monitoring of the mitigation measures determines that allegations surrounding land acquisition have been adequately resolved.				

7.3 CUMULATIVE IMPACTS

The Airport Access Road was considered in the Techo International Airport Cumulative Impact Assessment (CIA) and its contribution to potential cumulative impacts identified and included in the proposed monitoring and mitigation plan.

8. OPERATIONS PHASE MONITORING AND MANAGEMENT PLAN

The environmental and social risks and impacts, which may potentially result from the construction and operation phases of the Project can be managed and mitigated through the range of measures. These measures and actions have been outlined in the Environmental and Social Management Plan (ESMP) of the ESIA Addendum.

9. CONCLUSIONS AND RECOMMENDATIONS

The proposed Airport Access Road is considered an associated facility for the Techo International Airport and was not fully evaluated in the EIA conducted by E&A for the Airport. This ESIA Supplement provides a post-construction evaluation of the environmental and social impacts associated with the proposed road.

Table 9-1 below summarizes the residual significance of the identified environmental and social impacts. As the table indicates, the physical, biodiversity, and social impacts associated with the Airport Access Road construction and operation are generally minor. An evaluation of reasonable alternatives concluded that the proposed route was the preferred alternative.

TABLE 9-1 SUMMARY OF IMPACTS

Resource or Receptor	Construction Phase	Operation Phase
Soil	**Minor**	**Negligible**
Air Quality	**Moderate**	**Not Applicable**
Noise	**Moderate**	**Not Applicable**
Surface Water Quality	**Minor**	**Not Applicable**
Groundwater Quality	**Minor**	**Minor**
Legally Protected Area and Internationally Recognized Areas	**Not Applicable**	**Not Applicable**
Terrestrial and Aquatic Habitat Loss and Degradation	**Negligible**	**Not Applicable**
Critical Habitat Triggered Species Disturbance	**Negligible**	**Not Applicable**
Terrestrial and Aquatic Species Disturbance and Displacement	**Negligible**	**Not Applicable**
Terrestrial Species Direct Mortality Caused by Vehicle Strike, Hunting and Poaching	**Negligible**	**Negligible**

Resource or Receptor	Construction Phase	Operation Phase
Fauna Disturbance from Noise and Light During Operation	**Not Applicable**	**Negligible**
Traffic and Transport	**Moderate**	**Not Applicable**
Impacts on Land Acquisition and Livelihoods	**Major**	**Major**
Community Health, Safety and Security	**Minor**	**Not Applicable**

The key construction phase risk related to land acquisition and physical and economic displacement. The key operational phase risks are impacts on soil and groundwater resulting from hazardous material spills, as the access road will be used for transporting a variety of hazardous materials required for airport operations. Overall, the conclusion of this assessment is that the Airport Access Road is an associated facility to the Techo International Airport, which is essential for its operations, and its environmental and social impacts, are relatively minor if appropriately managed.

ERM HAS OVER 160 OFFICES ACROSS THE FOLLOWING COUNTRIES AND TERRITORIES WORLDWIDE

Argentina
Australia
Belgium
Brazil
Canada
China
Colombia
France
Germany
Ghana
Guyana
Hong Kong
India
Indonesia
Ireland
Italy
Japan
Kazakhstan
Kenya
Malaysia
Mexico
Mozambique
The Netherlands
New Zealand
Peru
Poland
Portugal
Romania
Senegal
Singapore
South Africa
South Korea
Spain
Switzerland
Taiwan
Tanzania
Thailand
UAE
UK
US
Vietnam

ERM-Siam Co., Ltd.
179 Bangkok City Tower,
24th Floor,
South Sathorn Road,
Thungmahamek, Sathorn,
Bangkok, 10120, Thailand

T: (662) 074 3050

www.erm.com