

Cambodia Solid Waste and Plastic Management Improvement Project

Environmental and Social Management Framework (ESMF)

February 2022

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LIST OF ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
AFD	Agence Française de Développement
AGL	Above Ground Level
AP	Affected Peoples
APSARA	Authority for the Protection of the Site and Management of the Region of Angkor
ASEAN	Association of Southeast Asian Nations
BGL	Below Ground Level
BOD	Biological Oxygen Demand
C/N	Carbon-to-Nitrogen ratio
CDC	Center for Disease Control
CDI	Cambodia Development Institute
CIU	Component Implementation Unit
CMU	Component Management Unit
COBSEA	Coordinating Body on the Seas of East Asia
COD	Chemical Oxygen Demand
COMPED	Cambodian Education and Waste Management Organization
CSWPMIP	Cambodia Solid Waste and Plastic Management Improvement Project
DAC	Disability Action Council
DGH	Directorate General for Health
DRP	Detailed Resettlement Plan
DRRM	Disaster Risk Reduction and Management Council
E&S	Environmental & Social
EHS	Environment, Health, and Safety
EIA	Environmental Impact Assessment
EPC	Environmental Protection Contract
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESHS	Environment, Social, Health, and Safety
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
FEIA	Full Environmental Impact Assessment
GBV	Gender-based Violence
GDP	Gross Domestic Product
GDR	General Department of Resettlement
GIIP	Good International Industry Practice
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
IEIA	Initial Environmental Impact Assessment
ILO	International Labor Organization
IP	Indigenous Peoples
IPPF	Indigenous Peoples Planning Framework
IRC	Inter-ministerial Resettlement Committee

JICA	Japan International Cooperation Agency
LMP	Labor Management Procedure
LRP	Livelihood Restoration Plan
M&E	Monitoring & Evaluation
MAFF	Ministry of Agriculture, Forestry and Fisheries
MEF	Ministry of Economy and Finance
MoLVT	Ministry of Labor and Vocational Training
MOE	Ministry of Environment
MOH	Ministry of Health
MOI	Ministry of Interior
MOP	Ministry of Planning
MoSVY	Ministry of Social Affairs, Veterans and Youth Rehabilitation
MOT	Ministry of Tourism
MoWA	Ministry of Women's Affairs
MoWRAM	Ministry of Water Resources and Meteorology
MPWT	Ministry of Public Works and Transportation
NCDM	National Committee for Disaster Management
NCSD	National Council for Sustainable Development
NGO	Non-government Organization
NIS	National Institute of Statistics
NMBY	Not in My Backyard Syndrome
NSPS	National Social Protection Strategy
OECD	Organisation for Economic Co-operation and Development
OHS	Occupational Health and Safety
PAoI	Project Area of Influence
PAP	Project-affected People
PDO	Project Development Objective
POM	Project Operation Manual
PRSC	Provincial Resettlement Sub-Committees
RF	Results Framework
RGC	Royal Government of Cambodia
ROW	Right-of-Way
SAF	Social Accountability Framework
SC	Steering Committee
SEP	Stakeholders Engagement Plan
SIA	Social Impact Assessment
SNA	Sub-national Administration
SOP	Standard Operating Procedures
SRWSA	Siem Reap Water Supply Authority
SWM	Solid Waste Management
TA	Technical Assistance
TN	Total Nitrogen
TP	Total Phosphorous
TSBR	Tonle Sap Biosphere Reserve
TSS	Total Suspended Solids

UNCRD	United Nations Centre for Regional Development
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
VAC	Violence Against Children
WBG	World Bank Group
WWTP	Wastewater Treatment Plant

សេចក្តីសង្ខេប

ទិដ្ឋភាពទូទៅ នៃក្របខ័ណ្ឌគ្រប់គ្រងបរិស្ថាន និងសង្គម (ESMF)

ក្របខ័ណ្ឌគ្រប់គ្រងបរិស្ថាន និងសង្គម (ESMF) មានតួនាទីជាយន្តការចម្បងសម្រាប់ការវាយតម្លៃ និងការគ្រប់គ្រងគ្រោះថ្នាក់លើបរិស្ថាន និងសង្គម និងហេតុប៉ះពាល់នៃគម្រោងគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិកនៅកម្ពុជា (គម្រោង)។ ESMF វិភាគលើគ្រោះថ្នាក់ និងហេតុប៉ះពាល់ ហើយមាននូវផែនការគ្រប់គ្រងបឋមដើម្បីកាត់បន្ថយ និងដោះស្រាយហេតុប៉ះពាល់ ហើយ ESMF នឹងនាំមកនូវ (ក) ការរៀបចំការ វាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គមជាក់លាក់ (ESIAs) និងផែនការគ្រប់គ្រងបរិស្ថាន និងសង្គមជាក់លាក់ (ESMPs) សម្រាប់អនុគម្រោងនីមួយៗ នៅពេលដែលទីតាំងត្រូវបានកំណត់ និងរួមជាមួយនឹងការរចនាលម្អិត សម្រាប់ការវិនិយោគហេដ្ឋារចនាសម្ព័ន្ធ និង(ខ) ការរៀបចំឯកសារទាក់ទងនឹងការគ្រប់គ្រងគ្រោះថ្នាក់ចំពោះ សង្គមតាមតម្រូវការសម្រាប់អនុគម្រោងនីមួយៗ ដែលរួមមានឯកសារដូចជា៖ ផែនការលម្អិត នៃការតាំងទីលំនៅដ្ឋានថ្មី និងផែនការជនជាតិដើមភាគតិច ប្រសិនបើអនុវត្តបាន។

ការពិពណ៌នាពីគម្រោង

គម្រោងនេះមានគោលបំណងធ្វើឲ្យប្រសើរឡើងនូវការគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិកនៅកម្ពុជា។ គម្រោងនេះ មានគោលបំណងជ្រើសរើសទីក្រុងនៅទូទាំងប្រទេសកម្ពុជាដែលអាច៖ (i) បង្ហាញពីការកែលម្អ នូវការអនុវត្ត លើការគ្រប់គ្រងសំណល់រឹងដែលអាចសម្របតាម និងធ្វើការពង្រីកបានសម្រាប់ទីក្រុងផ្សេងទៀតនៅក្នុងប្រទេស (ii) គាំទ្រគោលនយោបាយ និងច្បាប់គ្រប់គ្រងសំណល់រឹង និង (iii) គាំទ្រដល់ការអភិវឌ្ឍសមត្ថភាព ទាំងថ្នាក់ជាតិ និងថ្នាក់ក្រុង។ គម្រោងនេះនឹងរួមបញ្ចូលការគាំទ្រសម្រាប់ការធ្វើឲ្យ ប្រសើរឡើងនូវការប្រមូលសំរាម ការដឹកជញ្ជូន និងការស្តារឡើងវិញដូចជា ការធ្វើប្រព្រឹត្តិកម្ម ការកែច្នៃ ការចាក់ចោល និងការស្តារឡើងវិញនូវថ្លៃដើមដោយធ្វើការកែលម្អការប្រមូលថ្លៃសេវាប្រមូលសំរាម។ វានឹងគាំទ្រដល់ការកែលម្អ នូវការត្រួតពិនិត្យ និងការអនុវត្តរបស់ក្រុមហ៊ុនគ្រប់គ្រងកាកសំណល់រឹងឯកជន ភាពងាយស្រួល នៃការទទួលព័ត៌មានដែលអាចរកបាន និងជឿជាក់បាន និងការចូលរួមរបស់ប្រជាពលរដ្ឋ និងព័ត៌មានសាធារណៈ។ គម្រោងនេះ ក៏នឹងគាំទ្រដល់ គោលនយោបាយប្លាស្ទិក និងការកែលម្អដល់ការគ្រប់គ្រងប្លាស្ទិក ដើម្បីកាត់បន្ថយបរិមាណកាកសំណល់រឹងដែលត្រូវប្រមូល ឬចាក់ចោល បង្កើនការកែលម្អ និងការកែច្នៃឡើងវិញ និងរួមចំណែកកាត់បន្ថយការសំណល់ប្លាស្ទិកដែលធ្លាក់ចូលទៅក្នុង ផ្លូវទឹក និងសមុទ្រ។

នៅថ្នាក់មូលដ្ឋាននឹងគាំទ្រដល់ការអនុវត្តអនុក្រឹត្យលេខ ១១៣ របស់កម្ពុជា ដែលមានចែងក្នុងមាត្រាទី៩ “វាជាតួនាទីរបស់រដ្ឋបាលក្រុង/ស្រុកក្នុងការគ្រប់គ្រងសំណល់រឹងទីក្រុងនៅក្នុងដែនសមត្ថកិច្ចរបស់ខ្លួន”។ គម្រោងនេះនឹងផ្តោតលើការគាំទ្រការធ្វើឲ្យប្រសើរឡើងនូវសេវាប្រមូលសំរាម ការកែលម្អការប្រមូលថ្លៃសេវាប្រមូលសំរាម និងការស្តារថ្លៃដើមមកវិញ ក៏ដូចជាការបង្កើនការយល់ដឹងជាសាធារណៈ និងការចូលរួមរបស់ប្រជាពលរដ្ឋតាមរយៈជំនួយបច្ចេកទេសមុននឹងធ្វើការវិនិយោគលើហេដ្ឋារចនាសម្ព័ន្ធ។ ការកសាងសមត្ថភាព និងជំនួយបច្ចេកទេសនឹងផ្តោតលើការធ្វើឲ្យប្រសើរឡើងនូវការអនុវត្តរបស់វិស័យឯកជនតាមរយៈការផ្តល់សេវាប្រឹក្សាសម្រាប់ប្រតិបត្តិការ។ នេះ គឺស្របទៅនឹងការអនុវត្តជាអន្តរជាតិ ដ៏ល្អនៃសំណល់រឹងដែលត្រូវ

បានគ្រប់គ្រង សេវាកម្មដោយរដ្ឋាភិបាលក្នុងតំបន់ ដើម្បីធានាថាប្រជាពលរដ្ឋ អាចផ្តល់មតិកែលម្អដោយផ្ទាល់ ទៅលើសេវាកម្ម។

គម្រោងនេះមានសមាសភាគសំខាន់ៗ ចំនួនបី និងសមាសភាគសង្គ្រោះបន្ទាន់ដែលនឹងត្រូវបានអនុវត្តក្នុង រយៈពេលប្រាំមួយ (៦) ឆ្នាំ មានដូចជា៖

សមាសភាគទី១៖ ការអភិវឌ្ឍ និងការពង្រឹងច្បាប់ជាតិ បទប្បញ្ញត្តិ គោលនយោបាយ និងក្របខ័ណ្ឌ ស្ថាប័ន សម្រាប់ការគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិក

សមាសភាគទី ២៖ ការគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិករួមបញ្ចូលគ្នា ការធ្វើផែនការ ការត្រួតពិនិត្យ និងការ កសាងសមត្ថភាពសម្រាប់ក្រុងដែលបានចូលរួម

សមាសភាគទី ៣៖ ហេដ្ឋារចនាសម្ព័ន្ធ នៃការគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិក

សមាសភាគទី ៤៖ ការឆ្លើយតបបន្ទាន់ចំពោះហេតុការណ៍ណាមួយដែលអាចកើតឡើង

សមាសភាគទី១៖ ការអភិវឌ្ឍ និងការពង្រឹងច្បាប់ជាតិ បទប្បញ្ញត្តិ គោលនយោបាយ និងក្របខ័ណ្ឌ ស្ថាប័ន សម្រាប់ការគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិក

អនុវត្តកម្មវិធីនៃសកម្មភាពក្នុងគោលបំណងអភិវឌ្ឍ និងពង្រឹងច្បាប់ បទប្បញ្ញត្តិ គោលនយោបាយ និង ក្របខ័ណ្ឌស្ថាប័នដែលពាក់ព័ន្ធនឹងការគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិក រួមមាន៖ (ក) ការអភិវឌ្ឍ និងការពង្រឹង ច្បាប់ បទប្បញ្ញត្តិ អនុក្រឹត្យ គោលនយោបាយ និងគោលការណ៍ណែនាំដែលទាក់ទង នឹងការគ្រប់គ្រង សំណល់រឹង គោលការណ៍ទាំងនោះរួមមាន (i) ចំណាត់ថ្នាក់សំណល់រឹង ការធ្វើផែនការ ការធ្វើរបាយ ការណ៍ ការត្រួតពិនិត្យ ការអនុវត្ត ការប្រមូលសំណល់តាមជនបទ និងសហគមន៍ និងការគ្រប់គ្រងទិន្នន័យ និង (ii) ការគណនាថ្លៃសំណល់ និងប្រព័ន្ធគណនេយ្យកាកសំណល់ និងហិរញ្ញវត្ថុ (ខ) ការអភិវឌ្ឍ និងការពង្រឹង ច្បាប់ បទប្បញ្ញត្តិ អនុក្រឹត្យ គោលនយោបាយ និងគោលការណ៍ណែនាំ ដែលពាក់ព័ន្ធទៅនឹងការគ្រប់គ្រងប្លាស្ទិក ដើម្បីបង្កើនការកាត់បន្ថយ ការប្រើប្រាស់ឡើងវិញ និងការកែច្នៃប្លាស្ទិក និង(គ) ការកសាងសមត្ថភាព នៃ ស្ថាប័នពាក់ព័ន្ធរួមមាន ក្រសួងបរិស្ថាន (MOE) ក្រសួងមហាផ្ទៃ (MOI) និងក្រសួងសាធារណការ និងដឹក ជញ្ជូន (MPWT)។

សមាសភាគទី ២៖ ការគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិករួមបញ្ចូលគ្នា ការធ្វើផែនការ ការត្រួតពិនិត្យ និងការក សាងសមត្ថភាពសម្រាប់ក្រុងដែលបានចូលរួម

អនុវត្តកម្មវិធីនៃសកម្មភាពក្នុងគោលបំណងកសាងសមត្ថភាពរបស់ក្រុងដែលចូលរួមសម្រាប់ការគ្រប់គ្រង សំណល់រឹង និងប្លាស្ទិក រួមទាំងការគាំទ្រជាមួយ៖ (ក) ការធ្វើផែនការគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិក សេវា ប្រឹក្សាប្រតិបត្តិការ និងការសិក្សាស្វែងរកអនុវត្តសម្រាប់កិច្ចសន្យាគ្រប់គ្រងសំណល់រឹង (ខ) ការអភិវឌ្ឍ ព័ត៌មានសំណល់រឹង ហិរញ្ញវត្ថុ និងប្រព័ន្ធកូមិសាស្ត្រសម្រាប់ការប្រមូលថ្លៃសេវា (កាកសំណល់) ដើម្បីបង្កើន ការស្តារឡើងវិញនូវការចំណាយ និង (គ) ការគ្រប់គ្រងប្រតិបត្តិការ និងការផ្សព្វផ្សាយ ជាសាធារណៈ ការ យល់ដឹង ការអប់រំ និងសកម្មភាពចូលរួមរបស់ប្រជាពលរដ្ឋ។

សមាសភាគទី ២ គឺសម្រាប់ក្រុង/ស្រុក ដែលបំពេញតាមលក្ខណៈវិនិច្ឆ័យសិទ្ធិដែលបានព្រមព្រៀងគ្នា ដើម្បី (ក) កំណែទម្រង់វិស័យគ្រប់គ្រងសំណល់រឹង (SWM) ស្របតាមអនុក្រឹត្យលេខ ១១៣របស់កម្ពុជាស្តីពី

ការគ្រប់គ្រងសំណល់រឹងក្នុងទីក្រុង ដែលសាលាក្រុងបានទទួលខុសត្រូវលើការគ្រប់គ្រងសំណល់រឹង (ខ) កែទម្រង់ ប្រតិបត្តិការសំណល់រឹង ជាពិសេសពិនិត្យឡើងវិញនូវកិច្ចសន្យាជាមួយក្រុមហ៊ុនប្រមូលសំណល់រឹងផ្នែកឯកជន ដើម្បីរួមបញ្ចូលសូចនាករ សំខាន់ៗសម្រាប់អនុវត្ត ផែនការប្រតិបត្តិការ និងតម្រូវការការធ្វើរបាយការណ៍នៅក្នុង កិច្ចសន្យា រួមជាមួយនឹងការ បង្កើតនូវខ្លាំងចំណាយផ្សេងៗដែលពាក់ព័ន្ធសម្រាប់សេវាកម្មទាំងនេះទៅតាម កិច្ចសន្យា (គ) យល់ព្រមឱ្យ សាលាក្រុងត្រួតពិនិត្យវិស័យសំណល់រឹងឯកជន ហើយរដ្ឋាភិបាលជាអ្នកទទួល ខុសត្រូវលើការប្រមូលថ្លៃសេវាប្រមូលសំណល់រឹង ចំពោះលំនៅដ្ឋាន និងអាជីវកម្ម ដែលនឹងត្រូវប្រើប្រាស់ដើម្បីបង់ថ្លៃឱ្យ ក្រុមហ៊ុនឯកជន សម្រាប់ការប្រមូលសំណល់រឹង ការដឹកជញ្ជូន ការធ្វើប្រព្រឹត្តិកម្ម និងប្រព័ន្ធទុកដាក់ និង (ឃ) បង្កើតផែនការស្តារថ្លៃដើម (ប្រតិបត្តិការ) សម្រាប់សេវាកម្មសំណល់រឹង។

សមាសភាគទី ៣៖ ហេដ្ឋារចនាសម្ព័ន្ធគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិក

អនុវត្តកម្មវិធីនៃសកម្មភាពសម្រាប់ក្រុងដែលចូលរួម និងស្រុកដែលជ្រើសរើស រួមមាន៖ (ក) ការរៀបចំ និងសាងសង់ហេដ្ឋារចនាសម្ព័ន្ធគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិក សម្រាប់ការប្រមូល ការផ្ទេរ ប្រព្រឹត្តិកម្ម/កែច្នៃឡើងវិញ និងការចោលសំណល់រឹង និងប្លាស្ទិក រួមទាំងទីលានចាក់សំណល់ ស្ថានីយ៍ផ្ទេរសំណល់ និងកន្លែងប្រព្រឹត្តិកម្មសំណល់កម្រិតមធ្យម ដូចជាកន្លែងកែច្នៃសំណល់ និងកន្លែងធ្វើ ជីកំប៉ុស្តរួមទាំងផ្លូវចូល មានសក្តានុពល ក៏ដូចជាការដោះស្រាយការបំពុលនៅកន្លែងចាក់សំណល់ដែល មានស្រាប់ និង(ខ) ការអភិវឌ្ឍ ឯកសារណែនាំដែលពាក់ព័ន្ធ ដូចជាបទប្បញ្ញត្តិទាក់ទងទៅនឹងការចាក់សំណល់ ការរចនាលើទីលានចាក់សំណល់ និងប្រតិបត្តិការដែលមានស្តង់ដារ និងគំរូកិច្ចសន្យា និងសៀវភៅណែនាំ សម្រាប់ការគ្រប់គ្រង និងប្រតិបត្តិការ ទីលានចាក់សំណល់។

លក្ខណៈវិនិច្ឆ័យនៃសិទ្ធិចូលរួមសម្រាប់សមាសភាគទី៣ គឺផ្អែកលើ៖ (i) តម្រូវការចំណាយនៃប្រព្រឹត្តិកម្មសំណល់រឹងប្រកបដោយប្រសិទ្ធភាព និងហេដ្ឋារចនាសម្ព័ន្ធទុកដាក់សំណល់ ដែលមានអ្នកបញ្ចេញសំណល់រឹងច្រើនជាង ១០០.០០០នាក់ ពិតជាចាំបាច់ (ii) ឆន្ទៈក្នុងការស្តារថ្លៃដើមឡើងវិញយ៉ាងហោចណាស់ ក៏បានសម្រាប់ចំណាយថ្លៃប្រតិបត្តិការ នៃទីលានទុកដាក់សំណល់ និងកិច្ចសន្យាគ្រប់គ្រងទីលាន រួមជាមួយនឹង សូចនាករ សម្រាប់ ការអនុវត្ត និងការចំណាយសម្រាប់ប្រតិបត្តិការ និងការគ្រប់គ្រងការចោលសំណល់ និង(iii) ដីដែលអាចរកបាន សម្រាប់ទីលានសំណល់រឹង និងហេដ្ឋារចនាសម្ព័ន្ធប្រព្រឹត្តិកម្មផ្សេងៗ ទៀតស្របតាម តម្រូវការរបស់ WB ESF ។

ការវិនិយោគទីលានទុកដាក់សំណល់ដែលមានអនាម័យ គឺផ្អែកលើទីលានទុកដាក់សំណល់ទំនើប រួមទាំងហេដ្ឋារចនាសម្ព័ន្ធ ដែលអាចអនុវត្តបានទាំងអស់ដូចជា (i) រណ្តៅចាក់សំណល់ និងទីតាំងដែលអាចពង្រីកបន្ថែមជាមួយសមត្ថភាពគ្រប់គ្រាន់សម្រាប់អាយុកាលចាប់ពី ១០ឆ្នាំទៅ ២០ឆ្នាំ ដែលផ្តល់ការពង្រីកដែលមានសក្តានុពល (ii) ប្រព័ន្ធការពារជំរាបបាត (iii) បណ្តាញផ្លូវផ្នែកខាងក្នុង (iv) ប្រព័ន្ធប្រមូលទឹកស្អុយ និងការយកទឹកស្អុយដែលបានសំអាតមកស្រោចលើសំណល់វិញ និងប្រព័ន្ធប្រព្រឹត្តិកម្ម (v) ប្រព័ន្ធទាញយកឧស្ម័ននៅទីលានទុកដាក់សំណល់ (vi) ច្រកចូល និងអាគាររដ្ឋបាល (vii) ស្ថានជញ្ជីងថ្លឹងទម្ងន់ និង (viii) យានដ្ឋាន និងរោងជាង។

ទីតាំងទាញយក/កែច្នៃសម្ភារៈប្រើប្រាស់ឡើងវិញ (MRF) ស្ថានីយ៍ផ្ទេរ និងកន្លែងធ្វើជីកំប៉ុស្តត្រូវបានគ្រោងទុកសម្រាប់ គោលបំណង ដូចខាងក្រោម៖

ក. ការទាញយក និងការប្រើប្រាស់ឡើងវិញនូវសម្ភារៈ (សំរាម) ដែលអាចកែច្នៃឡើងវិញបាន។

ខ. ការបង្កើត និងការបន្តកំរិតជីវភាពរបស់អ្នកដែលអាស្រ័យលើសំណល់

គ. ការកាត់បន្ថយបរិមាណសំណល់ដែលត្រូវចាក់ចោលក្នុងទីលានទុកដាក់សំរាម

ឃ. ការកាត់បន្ថយការបង្កើតឧស្ម័នផ្ទះកញ្ចក់ (GHG)

វត្ថុដែលអាចកែច្នៃឡើងវិញបានត្រូវបានញែកនៅឯស្ថានីយ៍ផ្ទេរ ដែលវត្ថុទាំងនេះអាចត្រូវបានផ្ទេរទៅឱ្យអ្នកទទួលទិញ ដូច្នេះទីលានទុកដាក់សំរាមនឹងទទួលបានសំរាមណាដែលមិនអាចកែច្នៃបាន។ អ្នករើសអេកចាយនឹងត្រូវ បានដាក់បញ្ចូលទៅក្នុងកន្លែងទាញយក/ញែកសំរាមដែលអាចកែច្នៃបាន ដើម្បីទទួលវត្ថុដែលអាចកែច្នៃបាន តាមរយៈការសាងសង់កន្លែងទាញយកវត្ថុដែលអាចកែច្នៃបានប្រកបដោយសុវត្ថិភាព (MRF) ដែលនឹងផ្តល់ ឱ្យអ្នករើស អេកចាយនូវលក្ខខណ្ឌការងារដែលមានសុវត្ថិភាពជាងមុន ហើយនឹងការពារពួកគេពីហានិភ័យ សុខភាពដែលអាចកើតមានឡើង។

សម្ភារៈដែលអាចកែច្នៃបាន ដែលត្រូវបានញែក និងកែច្នៃ រួមមានដូចខាងក្រោម៖

ក) ក្រដាសកាតុង ខ) ក្រដាស គ) ដប PET ឃ) ប្លាស្ទិក ង) កញ្ចក់កែវ ច) សម្ភារៈគ្មានជាតិដែក ឆ) កៅស៊ូ/ស្បែក ជ) ឈើ ឈ) កំប៉ុងអាហារូបត្ថម្ភ ញ) សម្ភារៈផ្សេងទៀត

ការញែកនឹងអាស្រ័យលើបរិមាណ ទំហំភាគល្អិត និងភាពមិនស្អាតនៃសម្ភារៈទាំងនេះ។ សម្ភារៈដែលប្រមូលបាននឹងត្រូវបញ្ជូនទៅអ្នកកែច្នៃ ហើយនៅសល់នឹងត្រូវបញ្ជូនទៅចាក់ចោលចុងក្រោយទៅទីលានទុកដាក់សំរាម។

រោងចក្រផលិតជីកំប៉ុស្តក៏នឹងត្រូវគេប្រើផងដែរក្នុងការជួយកាត់បន្ថយបរិមាណកាកសំណល់ និងការបំភាយឧស្ម័នផ្ទះកញ្ចក់ និងបង្កើតជីវភាពរស់នៅដែលមានមូលដ្ឋានលើកាកសំណល់ និងការផលិតជីកំប៉ុស្ត សម្រាប់ឧទ្យាន សួនច្បារ និងគម្របសម្រាប់ទីលានទុកដាក់សំរាម និងអាស្រ័យលើគុណភាពសក្តានុពល កសិកម្ម។

សមាសភាគទី៤៖ការឆ្លើយតបបន្ទាន់ដែលអាចកើតឡើង

សមាសភាគតម្លៃសូន្យនេះត្រូវបានរចនាឡើង ដើម្បីផ្តល់នូវការឆ្លើយតបភ្លាមៗ ចំពោះវិបត្តិដែលមានសិទ្ធិ ឬភាពអាសន្នតាមតម្រូវការ ។

ការរៀបចំការអនុវត្ត

គម្រោងនេះនឹងត្រូវបានអនុវត្តតាមរយៈអង្គភាពគ្រប់គ្រងសមាសភាគ (CMU)។ ក្រសួងបរិស្ថាននឹងជាក្រសួងនាំមុខនៃសមាសភាគទី១។ ក្រសួងមហាផ្ទៃនឹងជាភ្នាក់ងារអនុវត្តសមាសភាគទី២។ ក្រសួងសាធារណការ និងដឹកជញ្ជូនជាភ្នាក់ងារអនុវត្តសមាសភាគទី៣។

ផ្នែកមួយនៃអង្គភាពគ្រប់គ្រងសមាសភាគ២សាលាក្រុងនីមួយៗដែលចូលរួមក្នុងគម្រោងនឹងបង្កើតអង្គភាពអនុវត្តសមាសភាគក្រុង (CIU) ជាអង្គភាពគ្រប់គ្រងសំណល់រឹង/សេវាទីក្រុងសម្រាប់ការអនុវត្តនៅ ថ្នាក់មូលដ្ឋាន។

ការជ្រើសរើសក្រុង និងខេត្តដែលមានសិទ្ធិ

ដំណើរការជ្រើសរើសយ៉ាងហ្មត់ចត់សម្រាប់កំណត់ ក្រុង និងខេត្តដែលមានសិទ្ធិបឋមត្រូវបានអនុវត្តរួមគ្នាជាមួយក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ (MEF) MOI MOE និង MPWT ដើម្បីជ្រើសរើសក្រុងដែលមានសិទ្ធិ

ជាចំបង។ សិទ្ធិក្នុងការជ្រើសរើសនឹងត្រូវបានបញ្ជាក់ថាជាផ្នែកនៃការអនុវត្តគម្រោងដោយផ្អែកលើ លក្ខណៈ វិនិច្ឆ័យនៃការជ្រើសរើស។ រាល់សាលាក្រុងចូលរួមដែលទទួលបានហិរញ្ញប្បទានវិនិយោគដំបូងនឹង ត្រូវបាន គាំទ្រជាមួយនឹងជំនួយបច្ចេកទេស និងការកសាងសមត្ថភាព។ ក្នុងនាមជាការរៀបចំនៃការវិនិយោគ សម្រាប់ សមាសភាគទី៣ ការវាយតម្លៃ E&S ជាក់លាក់នៃទីតាំងគម្រោងទាំងអស់និងផែនការនឹងត្រូវបាន រៀបចំ សម្រាប់អនុគម្រោងក្នុងលក្ខណៈសមស្របដោយគិតពិចារណាលើហានិភ័យ និងហេតុប៉ះពាល់របស់ គម្រោង ជាពិសេសហេតុប៉ះពាល់ទៅលើបរិស្ថាន និងសង្គមពីទាបទៅខ្ពស់ដែលអាចបណ្តាលមកពីសកម្មភាព ផ្សេងៗ ដូចជាការវិនិយោគលើហេដ្ឋារចនាសម្ព័ន្ធ និងការស្តារទីលានចាក់សំរាមស្ថិតនៅក្រោម សមាសភាគ នីមួយៗ។ ក្នុងអំឡុងពេលរៀបចំ ESIA/ESMPs ហេតុប៉ះពាល់បរិស្ថាន និងសង្គម និងវិធានការកាត់ បន្ថយត្រូវ តែបង្ហាញ និងការពិគ្រោះយោបល់ជាមួយក្រុម/បុគ្គលដែលទទួលរង ហេតុប៉ះពាល់ ពីគម្រោងផងដែរ។ គម្រោងមានគោលបំណងជៀសវាង កាត់បន្ថយ និង/ឬដោះស្រាយ ហេតុប៉ះពាល់ទាំងនេះ ហើយធ្វើ ឱ្យដំណើរ ការសិក្សារួមបញ្ចូលទៅនឹងតម្រូវការ និងកង្វល់របស់អ្នកដែល នឹងរងហេតុប៉ះពាល់។ នៅក្រោម សមាសភាគទី២ ក្រុងដែលទទួលបានសិទ្ធិបឋម ដូចជាក្រុងសៀមរាប (សៀមរាប) ក្រចៀម (កំពង់ស្ពឺ) ក្រុងតាខ្មៅ (កណ្តាល) ក្រុងបាត់ដំបង (បាត់ដំបង) និងក្រុងព្រះសីហនុ (ព្រះសីហនុ) ត្រូវបានគេរំពឹងថានឹង ទទួលបានជំនួយបច្ចេកទេស និងហិរញ្ញប្បទានកសាងសមត្ថភាព។ ចំពោះសមាសភាគទី៣ សាលាក្រុង ដែលទទួលបានសិទ្ធិបឋមដូចជា ក្រុងរបស់ខេត្តសៀមរាប កំពង់ស្ពឺ និងកណ្តាល ត្រូវបានគេរំពឹងថានឹងទទួល បានហិរញ្ញប្បទានវិនិយោគលើការ គ្រប់គ្រងសំណល់ និងហេដ្ឋារចនាសម្ព័ន្ធ។

ឧបសម្ព័ន្ធសំខាន់ៗចំពោះ ESMF

ក្របខណ្ឌគោលនយោបាយការតាំងទីលំនៅថ្មី (RPF) ៖ មានហេតុប៉ះពាល់នៃកម្មសិទ្ធិដី និង/ឬជីវភាពរស់នៅ ដែលអាចកើតមានឡើងក្នុងអំឡុងពេលការងារសំណង់ស៊ីវិល និងសកម្មភាពសាងសង់នៅក្រោម សមាស ភាគទី៣។ អនុគម្រោងជាច្រើននឹងត្រូវធ្វើការស្តារឡើងវិញសម្រាប់ការបន្តប្រើប្រាស់ និង/ឬបិទ និងការរុះរើ កន្លែងចាក់សំរាមដែលមានស្រាប់ ដែលអាចត្រូវការដីបន្ថែមសម្រាប់ការពង្រីក។ ជាមួយនឹង វត្តមានរបស់អ្នក រើសអេកតាយ សហគមន៍ក្បែរនោះ ក្រុមងាយរងគ្រោះ និងក្រុមអ្នកពាក់ព័ន្ធផ្សេងទៀត ក្របខណ្ឌគោល នយោបាយការតាំងទីលំនៅថ្មី ត្រូវបានរៀបចំឡើង ដើម្បីពិចារណាពីផលប៉ះពាល់ដែលអាច កើតមានលើជីវ្ជី ជីវភាពរស់នៅ និងប្រភពចំណូលដោយសារអនុគម្រោងដែលនឹងបង្កឱ្យមានការផ្លាស់ទី បែបប្រវត្តិ ឬបែប សេដ្ឋកិច្ចដោយសារការប៉ះពាល់ដី ឬផលប៉ះពាល់ដោយសារការរឹតត្បិតការទទួលបាន អេកតាយ (ដូចជា ធនធានសំណល់)។ ផ្នែកសំខាន់មួយនៃ ESMF នេះ RPF ត្រូវបានបង្ហាញក្នុងឧបសម្ព័ន្ធ G និងរួមបញ្ចូល គោលការណ៍ណែនាំស្តីពីការដោះស្រាយ និងកាត់បន្ថយការទន្ទ្រានដីធ្លី និងផលប៉ះពាល់លើ ជីវភាពរស់នៅ។

ក្របខណ្ឌផែនការជនជាតិដើមភាគតិច (IPPF) ៖ នៅដំណាក់កាលបច្ចុប្បន្ននៃគម្រោង ព័ត៌មានលម្អិត និង បច្ចេកទេសនៃអនុគម្រោងមិនត្រូវបានដឹងទេ ហើយនឹងត្រូវបានកំណត់ក្នុងដំណាក់កាលនៃការអនុវត្ត គម្រោង ដូច្នេះវាអាចមានវត្តមានរបស់ជនជាតិដើមភាគតិចនៅក្នុងតំបន់ជុំវិញអនុគម្រោង។ ក្របខណ្ឌ ផែនការជនជាតិ ដើមភាគតិច (IPPF) ត្រូវបានរៀបចំដើម្បីបង្កើតផែនការជនជាតិដើមភាគតិចជាក់លាក់មួយ។ ក្នុងករណីនេះ ជនជាតិភាគតិចត្រូវបានកំណត់នៅក្នុងការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គម ជាក់លាក់ (ESIA) របស់គម្រោងនីមួយៗ។ ជាផ្នែកសំខាន់នៃ ESMFនេះ IPPFត្រូវបានបង្ហាញ ក្នុងឧបសម្ព័ន្ធ

H ដើម្បីប្រើប្រាស់ជា មូលដ្ឋានក្នុងការរៀបចំផែនការជនជាតិដើមភាគតិច (IPP) នៃអនុគម្រោងនីមួយៗ ប្រសិនបើកំណត់ថាចាំបាច់។

នីតិវិធីគ្រប់គ្រងការងារ (LMP) : គម្រោងនឹងដាក់បញ្ចូលនូវប្រភេទកម្មករផ្សេងៗគ្នា ទៅតាមជំនាញនោះ គឺ ចាំបាច់សម្រាប់សកម្មភាពរៀបចំគម្រោង ការកសាងសមត្ថភាព និងការពង្រឹងស្ថាប័ននៅទូទាំង សមាសភាគ នៃគម្រោងទាំងអស់។ នីតិវិធីគ្រប់គ្រងការងារ (LMP) ត្រូវបានរៀបចំឡើងដើម្បីធានាថា កម្មករគម្រោង ទាំងអស់មានការយល់ដឹងច្បាស់លាស់អំពីអ្វីដែលត្រូវការ នៅពេលដែលបញ្ហាការងារ ជាក់លាក់កើតឡើង ក្នុងអំឡុងពេលសកម្មភាពធ្វើគម្រោង។ ជាផ្នែកសំខាន់មួយនៃ ESMF LMPត្រូវបាន បង្ហាញនៅក្នុងឧបសម្ព័ន្ធ F ដើម្បីផ្តល់នូវតម្រូវការការងារសំខាន់ៗ កំណត់ហានិភ័យដែលទាក់ទងនឹង កម្លាំងពលកម្ម និងកំណត់ធនធាន ដែលចាំបាច់ដើម្បីដោះស្រាយកង្វល់ការងាររបស់គម្រោង។

សកម្មភាពការចូលរួមរបស់ភាគីពាក់ព័ន្ធ និងការពិគ្រោះយោបល់សម្រាប់ ESMF/ESMF ត្រូវបានប្រើក្បា យោបល់ (សូមមើលឧបសម្ព័ន្ធ J) ទៅកាន់ភាគីពាក់ព័ន្ធផ្ទាល់ជាតិ អង្គការមិនមែនរដ្ឋាភិបាល និងអ្នកតំណាង មកពីតំបន់ដែលអនុគម្រោងនឹងត្រូវបានអនុវត្ត។ សេចក្តីសង្ខេបនៃ ESMF ត្រូវបានរៀបចំ និងបង្ហាញជា ភាសាខ្មែរ ដើម្បីអាចបញ្ជូនព័ត៌មានចាំបាច់និងច្បាស់លាស់ដែលមាននៅក្នុងឯកសារនេះប្រកប ដោយប្រសិទ្ធ ភាព និងច្បាស់លាស់នៅក្នុងឯកសារនេះ។ ព័ត៌មានលម្អិតសម្រាប់ទីភ្នាក់ងារអនុវត្ត និងអ្នកតំណាង រដ្ឋាភិបាល មូលដ្ឋាន ត្រូវបានបង្ហាញនៅកន្លែងប្រើក្បាយោបល់នីមួយៗ ស្របតាមយន្តការដោះស្រាយបណ្តឹង សារទុក្ខ (GRM)។

សាវតានៃបរិស្ថាន និងសង្គម

ប្រទេសកម្ពុជាស្ថិតនៅភាគខាងត្បូង នៃឧបទ្វីបឥណ្ឌូចិននៅក្នុងអាស៊ីអាគ្នេយ៍។ វាមានផ្ទៃដី ១៨១.០៣៥ គីឡូម៉ែត្រការ៉េ និងមានព្រំប្រទល់ជាប់ប្រទេសថៃនៅភាគពាយ័ព្យ ឡាវនៅភាគឦសាន វៀតណាមនៅខាង កើត និងឈូងសមុទ្រថៃនៅភាគនិរតី។

ទីតាំងភូមិសាស្ត្រលម្អិតនៃខេត្តសៀមរាប កណ្តាល និងកំពង់ស្ពឺ ត្រូវបានបង្ហាញក្នុងរូបភាពទី ១។

ប្រទេសកម្ពុជាមានអាកាសធាតុត្រូពិច៖ ក្តៅពេញមួយឆ្នាំ មានរដូវវស្សាចាប់ពីខែឧសភាដល់ខែតុលា ដោយសារខ្យល់មូសុងនិរតី និងរដូវប្រាំងចាប់ពីខែវិច្ឆិកាដល់ខែមេសា។ សម្រាប់ឆ្នាំធម្មតា ទឹកភ្លៀងនៅតំបន់ ដីគោកមានកម្ពស់ ១.៣០០ ទៅ ១.៨០០ មីលីម៉ែត្រ។ អាកាសធាតុត្រជាក់ជាងបន្តិចនៅតំបន់ខ្ពង់រាប ដែល ជម្រាលភ្នំត្រូវបានគ្របដណ្តប់ដោយព្រៃឈើក្រាស់ៗ (គម្របព្រៃ)និងត្រូវបានការពារដោយតំបន់អភិរក្សធម្ម ជាតិ។ តំបន់ភ្នំក៏ជាតំបន់ដែលមានភ្លៀងធ្លាក់ខ្លាំងបំផុត ដែលមានកម្ពស់រហូតដល់ ៥.០០០ មីលីម៉ែត្រក្នុង មួយឆ្នាំ ហើយមានភ្លៀងធ្លាក់ខ្លះនៅពេលរសៀល សូម្បីតែមុនរដូវវស្សាចាប់ពីខែកុម្ភៈដល់ខែមេសាក៏ដោយ។

សៀមរាប ជាទីក្រុងធំទីពីរ ស្ថិតនៅភាគពាយ័ព្យនៃប្រទេសកម្ពុជា (103° 51' 37.1268" E និង 13° 21' 50.5692" N) និងមានព្រំប្រទល់ជាប់ខេត្តឧត្តរមានជ័យ ខាងជើង ព្រះវិហារ និងកំពង់ធំនៅខាងកើត បន្ទាយ មានជ័យនៅខាងលិច និងបឹងទន្លេសាបនៅខាងត្បូង។ ខេត្តសៀមរាបមានផ្ទៃដីសរុប ១០.២៩៩ គីឡូម៉ែត្រ ក្រឡា មាន ១២ស្រុក ១០០ឃុំ និង ៨៧៥ភូមិ។



រូបភាពទី ១៖ទីតាំងភូមិសាស្ត្រនៃប្រទេសកម្ពុជា

ខេត្តកណ្តាល គឺជាខេត្តមួយក្នុងប្រទេសកម្ពុជា ដែលមានទីតាំងនៅភាគខាងត្បូងនៃប្រទេស។ វាព័ទ្ធជុំវិញ រាជធានីភ្នំពេញ និងមានព្រំប្រទល់ជាប់ខេត្តកំពង់ស្ពឺ និងខេត្តតាកែវ នៅខាងលិច កំពង់ឆ្នាំង និងកំពង់ចាម នៅខាងជើង ខេត្តព្រៃវែងនៅខាងកើត និងមានព្រំប្រទល់អន្តរជាតិជាមួយវៀតណាម នៅភាគខាងត្បូង។ វាជាខេត្តដែលមានប្រជាជនច្រើនជាងគេទីពីរនៅក្នុងប្រទេស។ អាកាសយានដ្ឋាន អន្តរជាតិភ្នំពេញថ្មី ដែលមានចម្ងាយប្រមាណ ៣០គីឡូម៉ែត្រពីទីរួមក្រុង ដែលកំពុងដំណើរការសាងសង់ និងដាក់ដំណើរការ ប្រើប្រាស់ក្នុងឆ្នាំ ២០២៥។ វាត្រូវបានកត់ត្រាថាជាព្រលានយន្តហោះធំជាងគេមួយ ដែលទាក់ទងនឹងផ្ទៃដី។ ទីរួមខេត្តកណ្តាល គឺក្រុងតាខ្មៅដែលមានចម្ងាយប្រហែលប្រាំបីគីឡូម៉ែត្រខាងត្បូង រាជធានីភ្នំពេញ ដែលតភ្ជាប់គ្នាទៅវិញទៅមក តាមរយៈច្រករបៀងពាណិជ្ជកម្ម និងឧស្សាហកម្មដ៏រស់រវើក និងសកម្មនៅ ភាគខាងត្បូង។

ខេត្តកំពង់ស្ពឺ ជាខេត្តមួយក្នុងប្រទេសកម្ពុជាដែលមានព្រំប្រទល់ជាប់នឹងខេត្តពោធិ៍សាត់ និងកំពង់ឆ្នាំងនៅខាងជើង កណ្តាលនៅខាងកើត តាកែវនៅភាគអាគ្នេយ៍ កំពតនៅខាងត្បូង និងខេត្តកោះកុងនៅខាងលិច។ ទីរួមខេត្តរបស់ខេត្តនេះ គឺក្រុងច្បារមន។

ប្រជាសាស្ត្រ៖ គិតត្រឹមឆ្នាំ ២០១៩ ប្រជាជនសរុបក្នុងខេត្តកំពង់ស្ពឺត្រូវបានកត់ត្រាមានចំនួន១.០០៦.៥១២ នាក់ (NIS, ២០២០)។ ចំនួនស្រ្តី (៥១.២%) គឺខ្ពស់ជាងចំនួនបុរសបន្តិច (៤៨.៨%) ។ ខេត្តនេះមានទំហំគ្រួសារជាមធ្យម៤.៤៨ និងគ្រួសារមានចំនួន ២២៤.៦៧២គ្រួសារ។ ខេត្តកំពង់ស្ពឺ មានប្រជាជនសរុប

៨៧៧៥២៣ នាក់ ក្នុងនោះ ៥១.៦% ជាស្ត្រី។ ខេត្តនេះមាន ១៩៥៨៨២គ្រួសារហើយមានទំហំគ្រួសារជាមធ្យមគឺ ៤.៤៧។ ខេត្តកណ្តាល ដែលព័ទ្ធជុំវិញរាជធានីភ្នំពេញនិងជាខេត្តដែលមានប្រជាជនច្រើនជាងគេទីពីរក្នុងប្រទេសកម្ពុជា មានប្រជាជន សរុបចំនួន ១២០១៥៨១នាក់ក្នុងនោះ ៥១.៦% ជាស្ត្រី។ ខេត្តនេះមានគ្រួសារ ចំនួន២៦៥.៨០៣គ្រួសារ និងទំហំគ្រួសារជាមធ្យម ៤.៥២។ ដង់ស៊ីតេប្រជាជនក្នុងខេត្តសៀមរាប កើនឡើងពី ៨៧ ទៅ ៩៨ នាក់ក្នុង ១ គីឡូម៉ែត្រក្រឡា ពីឆ្នាំ ២០០៨ ដល់ឆ្នាំ ២០១៩។ ខេត្តនេះមានប្រជាជនរស់នៅច្រើនកុះករបើធៀបនឹងប្រទេសកម្ពុជាទាំងមូលដែលមានដង់ស៊ីតេប្រជាជនត្រឹមតែ៨៤នាក់ប៉ុណ្ណោះ ក្នុងមួយគីឡូម៉ែត្រការ៉េគិតត្រឹមឆ្នាំ ២០១៩ ដែល មានការកើនឡើងពី ៧៤នាក់ក្នុងមួយគីឡូម៉ែត្រការ៉េ ក្នុងឆ្នាំ ២០០៨ (NIS, ២០០៨)។

បើនិយាយពីជាតិសាសន៍ និងភាសា ប្រជាជនភាគច្រើនប្រើប្រាស់ភាសាខ្មែរជាភាសាកំណើត ចំនួន៩៧.១% ។ មានជាង ៣០០.០០០នាក់ ឬ ២.៣% នៃចំនួនប្រជាជនដែលភាសាកំណើត របស់ពួកគេ ស្ថិតនៅក្នុងភាសា ជនជាតិភាគតិច។ នៅខេត្តសៀមរាប ប្រជាជនភាគច្រើនជាជនជាតិខ្មែរ។ អ្នកដែលមានភាសាកំណើតជា ភាសាខ្មែរនៅខេត្តកំពង់ស្ពឺមានចំនួន ៩៩.៣% និងកណ្តាលមានចំនួន ៩៩.២%។

ជនពិការ៖ នៅក្នុងជំរឿនឆ្នាំ ២០១៩ពិការភាពត្រូវបានវាស់វែងទាក់ទងនឹងបញ្ហាផ្លូវកាយ និង/ឬផ្លូវចិត្ត ដែលបាន ជួបប្រទះក្នុងជីវិតប្រចាំថ្ងៃសម្រាប់មនុស្សដែលមានអាយុចាប់ពី ៥ឆ្នាំឡើងទៅ។ ក្នុងចំណោមខេត្ត ទាំងបី ខេត្តកណ្តាលមានជនពិការច្រើនជាងគេចំនួន ៥២៧២៤នាក់ ស្មើនឹង៧.៦% នៃចំនួនប្រជាជន ដែលជាខេត្ត ជាប់ចំណាត់ថ្នាក់លេខ៤ ក្នុងចំណោមខេត្តទាំង២៥ ក្នុងប្រទេសកម្ពុជាដែលមានជនពិការច្រើនជាងគេ។ តាមពីក្រោយដោយខេត្តសៀមរាបមានចំនួន៤០.៥៨៥ និងកំពង់ស្ពឺមានចំនួន៣៥.៦២០។

ស្ត្រីមេគ្រួសារ៖ ស្ត្រីជាមេគ្រួសារមានចំនួនច្រើននៅខេត្តភាគអាគ្នេយ៍ទាំងនេះ។នៅខេត្តសៀមរាប១៣%នៃស្ត្រីជាមេគ្រួសារចំណែកខេត្តកណ្តាល និងកំពង់ស្ពឺ ១៥% នៃស្ត្រីជាមេគ្រួសារ។

ភាពក្រីក្រ៖ នៅក្នុងប្រទេសកម្ពុជាគ្រួសារស្ទើរតែមួយក្នុងចំណោមគ្រួសារទាំងប្រាំ(១៨.៩៨%)ត្រូវបានចាត់ទុកថាក្រីក្រ(MOP,២០១៩)។នៅខេត្តសៀមរាប៣០.៥៧៩គ្រួសារឬ១២.១៩%នៃគ្រួសារសរុបរបស់ខ្លួនគឺជាអ្នកក្រីក្រដែលភាគច្រើនស្ថិតក្នុងកម្រិតក្រីក្រកម្រិត២។ នៅក្នុងខេត្តកណ្តាល ៣០.៩៧២គ្រួសារ ឬ ៩.៩១% នៃគ្រួសារសរុប គឺជាអ្នកក្រីក្រដែលមួយភាគបីស្ថិតក្នុងកម្រិតក្រីក្រកម្រិត២ស្របតាមអនុក្រឹត្យស្តីពីការកំណត់អត្តសញ្ញាណគ្រួសារក្រីក្រ (លេខ ២៩១) ដែលស្ថិតក្នុងកម្រិតក្រីក្រកម្រិត ២។ ចុងក្រោយក្នុងខេត្តកំពង់ស្ពឺមានគ្រួសារក្រីក្រចំនួន ២៣.៥៦៩គ្រួសារដែលស្មើនឹង៤.៨១% នៃគ្រួសារសរុប។ គ្រួសារក្រីក្រត្រូវបានបែងចែករវាងក្រីក្រកម្រិត១ និង កម្រិត២។

ទិន្នន័យបែងចែកតាមភេទរបស់មេគ្រួសារ ៤២.២% នៃគ្រួសារក្រីក្រនៅកម្ពុជា ដឹកនាំដោយស្ត្រី។ ចំណែកគ្រួសារក្រីក្រដែលដឹកនាំដោយស្ត្រីក្នុងខេត្តសៀមរាបមានកម្រិតទាបជាងមធ្យមភាគថ្នាក់ជាតិដែលមានអត្រា ៣៥.៦% ខណៈនៅខេត្តកណ្តាលមានកម្រិតទាបជាង ៤១.៨%ប៉ុណ្ណោះ។ ផ្ទុយទៅវិញចំណែកមេគ្រួសារជាស្ត្រីក្នុងខេត្តកំពង់ស្ពឺក្នុងចំណោមប្រជាជនក្រីក្រ មានជិតពាក់កណ្តាលគឺ ៤៧.៥%។ នៅខេត្តសៀមរាប គ្រួសារក្រីក្រប្រហែលមួយភាគបី (៦២.៦%) ប្រកបរបរធ្វើស្រែ។ ដូចគ្នានេះដែរ កសិករធ្វើស្រែក៏ជាចំណូលចម្បងរបស់គ្រួសារក្រីក្រភាគច្រើនក្នុងខេត្តកំពង់ស្ពឺផងដែរដែលមានចំនួន ៧២.១%។

ម៉្យាងវិញទៀត ៦០.៣% នៃគ្រួសារក្រីក្រក្នុងខេត្តកណ្តាល ប្រកបរបររកចំណូលផ្សេងទៀត ក្រៅពីការធ្វើ ស្រែ ចំការ និងនេសាទ។ វិស័យកសិកម្មធ្លាក់ចុះ ខណៈដែលវិស័យសេវាកម្ម និងឧស្សាហកម្មកើនឡើង។

ការទទួលបានទឹកស្អាត៖ ភាគរយនៃគ្រួសារដែលមានទឹកស្អាតប្រើប្រាស់ក្នុងខេត្តសៀមរាប កំពង់ស្ពឺ និងកណ្តាល មាន ៣៩.៤% ២៧.២% និង៤៤.៨% រៀងគ្នា។ ទិន្នន័យទទួលបានពីឧបករណ៍ដែល បំពាក់តាមរយៈ បំពង់ទឹក អណ្តូងស្នប់ឯកជនឬអណ្តូងក្រវ៉ាត់ឯកជនដែលអាចប្រើបានពេញមួយឆ្នាំហើយអាចចូលបានក្នុងឬ តិចជាង១៥០ម៉ែត្រពីផ្ទះរបស់ពួកគេ។ នៅខេត្តសៀមរាបបណ្តាញផ្គត់ផ្គង់ទឹកត្រូវបានសាងសង់ដោយរដ្ឋាករ ទឹកស្វយ័តក្រុងសៀមរាប (SRWSA) ដែលភាគច្រើនស្ថិតនៅកណ្តាលក្រុង។

ការទទួលបានអនាម័យ៖ ពីទិន្នន័យឆ្នាំ ២០១៦ នៅក្នុងទិន្នន័យមូលដ្ឋានរបស់ឃុំ សមាមាត្រគ្រួសារទៅនឹង បង្គន់អនាម័យគឺស្ថិតនៅក្រោម ១:១ នៅក្នុងខេត្តសៀមរាប កំពង់ស្ពឺ និងកណ្តាល។ នៅខេត្តកណ្តាល ជា មធ្យមគឺ ០.៧ បង្គន់អនាម័យក្នុងមួយគ្រួសារ។ ម៉្យាងវិញទៀត សមាមាត្រក្នុងខេត្តសៀមរាបគឺ ០.៦ បង្គន់អនាម័យក្នុង មួយគ្រួសារ។ កំពង់ស្ពឺជាខេត្តមួយដែលមានបង្គន់អនាម័យទាបបំផុតចំពោះសមាមាត្រគ្រួសារគឺ ០.៥។

សេដ្ឋកិច្ច ជីវភាព និងការងារ៖ ឧស្សាហកម្មឈានមុខគេទាំងបី (៣) នៅកម្ពុជាគឺ កសិកម្ម រុក្ខាប្រមាញ់ និង នេសាទ ពាណិជ្ជកម្មលក់ដុំ និងរាយ និងផលិតកម្ម។ ដូចគ្នាទៅនឹងតំបន់ភាគច្រើននៅប្រទេសកម្ពុជាដែរ ឧស្សាហកម្មកសិកម្ម រុក្ខាប្រមាញ់ និងនេសាទ រួមចំណែកមួយផ្នែកដ៏ធំដល់ការងារនៅក្នុងខេត្តសៀមរាប គិត ត្រឹមឆ្នាំ២០១៣ស្មើនឹង៦៣.០%នៃការងារសរុប។ មានស្ត្រីកាន់តែច្រើនដែលធ្វើការនៅក្នុងឧស្សាហកម្មទាំងបី (៣) ដែលមានភាពខុសគ្នាដ៏បំផុតជាមួយនឹងបុរសនៅក្នុងពាណិជ្ជកម្មលក់ដុំនិងរាយ។ ស្ត្រីដែលធ្វើការក្នុងវិស័យ ផលិតកម្មមានចំនួនច្រើននៅក្នុងខេត្តកំពង់ស្ពឺ(២៦.៥%) និងខេត្តកណ្តាល(២៦.០%) ផ្ទុយពីមធ្យមភាគ ជាតិ ១០.៣%។

ទេសចរណ៍៖ ការរីកបន្តនៃការធ្វើដំណើរដោយសារជំងឺរាតត្បាត COVID-19 បានជះឥទ្ធិពលយ៉ាងខ្លាំង ដល់វិស័យនេះ។ ក្នុងឆ្នាំ ២០២០ ការមកដល់របស់ភ្ញៀវទេសចរអន្តរជាតិត្រឹមតែ ១.៣ លាននាក់ប៉ុណ្ណោះ ត្រូវបាន កត់ត្រា ឬថយចុះ ៨០% ធៀបនឹងឆ្នាំមុន។ ក្នុងឆ្នាំដដែលនេះ ការមកដល់របស់ភ្ញៀវទេសចរណ៍ក្នុងស្រុកមាន ចំនួន ៧៨% នៃចំនួនភ្ញៀវទេសចរណ៍សរុប ដែលផ្ទុយទៅនឹងឆ្នាំមុន ដែលចំណែកភ្ញៀវទេសចរណ៍ជាតិ និង អន្តរជាតិមានចំនួនប្រហាក់ប្រហែលគ្នា។ ក្នុងចំណោមគោលដៅនានា ខេត្តសៀមរាបបានបង្ហាញពីការធ្លាក់ ចុះខ្ពស់បំផុតនៃការមកដល់របស់ភ្ញៀវទេសចរណ៍ជាតិ និងអន្តរជាតិក្នុងមានអត្រាធ្លាក់ចុះ៦៥.៨% និង ៨០.៨% រៀងគ្នា។ ជាពិសេស ជំងឺកូវីដមានផលប៉ះពាល់ទៅលើស្ថានភាពសេដ្ឋកិច្ចសង្គមរបស់ប្រជាជន (ការលំបាកកាន់តែច្រើន កង្វះការងារ ប្រាក់ចំណូល កាត់បន្ថយអាហារូបត្ថម្ភ)។

តំបន់បេតិកភណ្ឌវប្បធម៌៖ តំបន់អង្គរ គឺជាតំបន់បេតិកភណ្ឌវប្បធម៌មួយក្នុងប្រទេសកម្ពុជាដែលត្រូវបានចុះ ក្នុងបញ្ជីបេតិកភណ្ឌពិភពលោករបស់ United Nations Educational, Scientific, and Cultural Organization (UNESCO)។ ទីតាំងនៅបន្ទាយស្រី រលួស និងផ្នែកស្នូលនៃអង្គរស្ថិតក្រោមតំបន់ទី១ ចំណែកតំបន់ជុំវិញអង្គរស្ថិតនៅក្រោមតំបន់២ (អាជ្ញាធរជាតិអប្សរា, ២០១១)។ ក្រៅពីតំបន់បេតិកភណ្ឌវប្បធម៌ ទាំងនេះ ជីវមណ្ឌលនៃបឹងទន្លេសាប (TSBR) គឺជាតំបន់បម្រុងជីវមណ្ឌលរបស់អង្គការយូណេស្កូ និងត្រូវ

បានការពារដោយ ព្រះរាជក្រឹត្យស្តីពីការបង្កើត និងគ្រប់គ្រងតំបន់បម្រុងជីវមណ្ឌលបឹងទន្លេសាប(២០១១)។ វាស្ថិតនៅក្រោម អំណាចនិងការការពាររបស់អគ្គនាយកដ្ឋានរដ្ឋបាលសម្រាប់ការអភិរក្ស និងការពារធម្មជាតិ នៅក្នុងក្រសួងបរិស្ថាន។

ការវិភាគគម្លាតនៃក្របខ័ណ្ឌបរិស្ថាន និងសង្គម

គោលនយោបាយរបស់ធនាគារពិភពលោក និងច្បាប់ពាក់ព័ន្ធរបស់រាជរដ្ឋាភិបាលក្នុងកម្រិតជាតិ និងមូលដ្ឋាន ត្រូវបានពិនិត្យ និងវិភាគដើម្បីកំណត់គម្លាត និងវិធានការនានាដើម្បីធ្វើការភ្ជាប់ដូចដែលបានរៀបរាប់ លម្អិតនៅ ក្នុងតារាងទី ១។

តារាងទី១៖ ការវិភាគគម្លាត នៃគោលនយោបាយរបស់ធនាគារពិភពលោក និងប្រទេសកម្ពុជា

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
ទូទៅ	កថាខណ្ឌទី ១១៖ “គ្រឿងបរិក្ខារដែលពាក់ព័ន្ធ” មានន័យថាសម្ភារៈបរិក្ខារឬសកម្មភាពដែលមិនត្រូវបានផ្តល់ជំនួយជាផ្នែកនៃគម្រោងហើយនៅក្នុងការវិនិច្ឆ័យរបស់ធនាគារគឺ៖ (ក)ពាក់ព័ន្ធដោយផ្ទាល់ និងជាពិសេសទាក់ទងទៅនឹងគម្រោងនិង (ខ) អនុវត្តឬគ្រោងនឹងអនុវត្តក្នុងពេលដំណាលគ្នាជាមួយគម្រោងនិង (គ) ចាំបាច់ដើម្បីឱ្យគម្រោងអាច ដំណើរការបានហើយនឹងមិនត្រូវបានសាងសង់ ពង្រីកឬដំណើរការប្រសិនបើគម្រោងមិនមាន។		ស្របតាមWB ESF ការបិទនិងការជួសជុលឬការស្តារឡើងវិញនូវកន្លែងចាក់សំរាមដែលមានស្រាប់គឺជាមធ្យោបាយពាក់ព័ន្ធក្នុងការអភិវឌ្ឍកន្លែងចាក់សំរាមថ្មីចាប់តាំងពីគោលបំណងនៃការអភិវឌ្ឍប្រតិបត្តិការនិងការប្រើប្រាស់ទីលានចាក់សំរាមអនាម័យថ្មីមិនអាចសម្រេចបានដោយគ្មានការបិទកន្លែងចាក់សំរាមដែលមានស្រាប់នោះទេ។កន្លែងចាក់សំរាមអនាម័យថ្មីនេះនឹងមានកន្លែងបង់លុយថ្លៃយកសំរាមចូលដើម្បីការវិនិយោគប្រតិបត្តិការនិងការថែទាំកន្លែងចាក់សំរាមអនាម័យថ្មីមានលក្ខណៈសមស្របនិងបើគ្មានការបិទកន្លែងចាក់សំរាមដែលមាន	MPWT, MoE

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
			ស្រាប់ (ដោយគ្មានច្រកបង់លុយទេ) សំណល់នឹងមិនត្រូវបានដឹកជញ្ជូននិងបោះចោលនៅទីលានចាក់សំរាមថ្មីធ្វើឱ្យគម្រោងចាក់សំរាមថ្មីមិនអាចដំណើរការបាន។ ជាជម្រើសមួយសម្រាប់ការបិទការស្តារឡើងវិញនិងការពង្រីកកន្លែងចាក់សំរាមដែលមានស្រាប់ឲ្យទៅជាកន្លែងចាក់សំរាមអនាម័យគឺអាចធ្វើទៅបាន។	
ការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន	ESS1៖ ការអនុវត្តនៃការវាយតម្លៃអំពីហានិភ័យនិងហេតុប៉ះពាល់បរិស្ថាននិងសង្គម ដោយផ្ទាល់) ប្រយោលការប្រមូលផ្តុំគឺ (ជាតម្រូវការក្នុងការស្នើសុំ ហិរញ្ញប្បទានពីធនាគារពិភពលោក និងបរិក្ខារដែលពាក់ព័ន្ធនៅក្នុងដំណាក់កាលគម្រោងរបស់ខ្លួន ពេលគឺ)មុនការសាងសង់ ប្រតិបត្តិការ ការរុះរើ ការបិទ និងដំណាក់កាលនៃការស្តារឡើងវិញ	<p>ច្បាប់ស្តីពីការការពារបរិស្ថាន និងការគ្រប់គ្រងធនធានធម្មជាតិ (1996) រួមមានការបង្កើតអនុក្រឹត្យសម្រាប់ការគ្រប់គ្រងបរិស្ថាន រួមទាំងគោលនយោបាយទាក់ទងនឹងដំណើរការវាយតម្លៃផលប៉ះពាល់បរិស្ថាន។</p> <p>អនុក្រឹត្យលេខ ៧២ស្តីពីដំណើរការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន (1999)បម្រើជាមូលដ្ឋានច្បាប់ដែលបង្កើតគោលការណ៍ណែនាំសម្រាប់ I/EIAសម្រាប់គម្រោងកែច្នៃសំណល់សកម្មភាពដុតរោងចក្រប្រព្រឹត្តកម្មទឹកសំណល់ និងប្រព័ន្ធលូដែលមានផ្ទៃដីលើសពី ៥០០០ហិកតា។</p>	គោលនយោបាយរបស់ WB ESSនិង RGC លើ EIA ត្រូវសម្របទៅតាមលក្ខខណ្ឌនៃការវាយតម្លៃផលប៉ះពាល់បរិស្ថាននៃគម្រោងទាំងមូលដោយផ្ដោតលើបរិស្ថានធម្មជាតិក៏ដូចជាទិដ្ឋភាពសេដ្ឋកិច្ច	MoE

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
និងសង្គម	<p>និងអ្វីៗដែលពាក់ព័ន្ធ។ អ្នកខ្លះត្រូវអនុវត្តដូចខាងក្រោម៖</p> <p>(១) <u>ការវាយតម្លៃបរិស្ថាននិងសង្គម</u> ការកំណត់និងវាយតម្លៃនៃហានិភ័យ និងហេតុប៉ះពាល់ បរិស្ថាន និងសង្គមដែលអាចកើតមាន។</p> <p>(២) <u>ការចូលរួមរបស់ភាគីពាក់ព័ន្ធ</u> ការរៀបចំផែនការ ការចូលរួមរបស់ភាគីពាក់ព័ន្ធ (SEP) ការបង្ហាញព័ត៌មាន និងការប្រឹក្សាយោបល់បច្ចេកទេសដ៏ល្អដូចដែលបានផ្តល់ដោយ ESS-10</p> <p>(៣) <u>ផែនការប្តេជ្ញាអនុវត្តផ្នែកបរិស្ថាននិងសង្គម (ESCP)</u> ផែនការកំណត់ពេលវេលានៃសកម្មភាពនិងវិធានការសម្រាប់កំណត់ហានិភ័យនិងហេតុប៉ះពាល់ដែលអាចកើតមាន និង</p> <p>(៤) <u>ការត្រួតពិនិត្យនិងការវាយតម្លៃការងារតាមដាន</u> ការអនុវត្ត និងការវាយតម្លៃនៃសកម្មភាពដែល បានកំណត់នៅក្នុងESCP។</p> <p>សម្រាប់គម្រោងដែលរួមបញ្ចូលគ្រឿងបរិក្ខារដែលមានស្រាប់សម្រាប់ការស្តារឡើងវិញការត្រួតពិនិត្យនិងសវនកម្មត្រូវតែធ្វើឡើងដើម្បីកំណត់នូវសកម្មភាពកែតម្រូវដើម្បីសម្របតាមកន្លែងដែល</p>	<p><u>ប្រកាសលេខ ៣៧៦ ស្តីពីគោលការណ៍ណែនាំទូទៅសម្រាប់ការរៀបចំការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថានដំបូង និងរបាយការណ៍វាយតម្លៃហេតុប៉ះពាល់បរិស្ថានពេញលេញ(២០០៩)</u>កំណត់គោលការណ៍ណែនាំនិងទំហំនៃ I/EIAs ។</p> <p><u>ប្រកាសស្តីពីការផ្តល់អំណាចទៅមន្ទីរបរិស្ថានក្រុង/ខេត្តដើម្បីសម្រេចលើការអភិវឌ្ឍន៍គម្រោង (២០០៥)</u> ផ្តល់ការត្រួតពិនិត្យI/EIA របស់បុគ្គលឬក្រុមហ៊ុនឯកជនក្រុមហ៊ុនបណ្តាក់ទុនរួមគ្នាក្រុមហ៊ុនសាធារណៈនិងភ្នាក់ងាររដ្ឋាភិបាលទៅមន្ទីរបរិស្ថានក្រុងឬខេត្ត។</p> <p><u>ប្រកាសទី២១ស្តីពីការចាត់ថ្នាក់នៃការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថានសម្រាប់គម្រោងអភិវឌ្ឍន៍ (២០២០)</u></p> <p>ប្រកាសផ្តល់បញ្ជីវិសោធនកម្មនៃចំណាត់ថ្នាក់ផលប៉ះពាល់នៃគម្រោងដើម្បីកំណត់ថាតើពួកគេនឹងតម្រូវឱ្យដាក់កិច្ចព្រមព្រៀង/កិច្ចសន្យាការពារបរិស្ថាន(គម្រោងដែលមានផលប៉ះពាល់E&Sតូច)ការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គមដំបូង (គម្រោងដែលមានផលប៉ះពាល់E&S មធ្យម) ឬការវាយតម្លៃបរិស្ថាននិងសង្គមពេញលេញ (គម្រោងដែល មានឥទ្ធិពល E&S ធ្ងន់ធ្ងរ)។</p>	<p>សង្គម។ច្បាប់ជាតិស្តីពីEIAមិនរាប់បញ្ចូលទិដ្ឋភាពសំខាន់ៗដែលទាក់ទងនឹងការវាយតម្លៃហេតុប៉ះពាល់សង្គម និងការគ្រប់គ្រង។ ម្យ៉ាងវិញទៀត ការផ្តោតទៅលើក្រុមងាយរងគ្រោះមិនត្រូវបានផ្តល់ជូននៅក្នុងគោលនយោបាយរបស់ RGC ដូចនៅក្នុង WB ESS នោះទេ។ ក្រៅពីការដាក់បញ្ចូលការចូលរួមជាសាធារណៈនៅក្នុងដំណើរការ EIA របស់ RGC មិនមានបញ្ញត្តិលើការយុទ្ធសាស្ត្រអនុវត្តរបស់ខ្លួនទេរួមទាំងការធ្វើផែនទីនិងការរៀបចំផែនការការចូលរួមរបស់អ្នកពាក់ព័ន្ធ។</p> <p>ESIAsនិងESMPsដែលនឹងត្រូវបានបង្កើតឡើងសម្រាប់អនុគម្រោងនឹងរួមបញ្ចូលជា</p>	

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
	<p>មានស្រាប់ជាមួយនឹងតម្រូវការរបស់ ESS ហើយត្រូវតែចង្អុលបង្ហាញនៅក្នុង ESCP។ គម្រោង និងអនុគម្រោងដែលមានហានិភ័យខ្ពស់ ទាំងអស់ត្រូវតែអនុលោមតាម ESS ខណៈដែល គម្រោងដែលមានហានិភ័យមធ្យម និងទាបត្រូវ តែស្របតាមច្បាប់ជាតិ ហើយ ESS ត្រូវចាត់ទុក ថាពាក់ព័ន្ធជាមួយ WB។</p> <p>CBA ឬការវិភាគផ្សេងទៀតនឹងត្រូវការសម្រាប់ករណីដែលមានជម្រើសនៅក្នុងការដ្ឋានការសិក្សាឬបច្ចេកវិទ្យាបង្កហានិភ័យដល់បរិស្ថាន និងសង្គមខ្ពស់បើធៀបទៅនឹងជម្រើសផ្សេងទៀត។ សមត្ថភាព និងការបណ្តុះបណ្តាលចាំបាច់ទាក់ទងទៅនឹងការអនុវត្ត និងការត្រួតពិនិត្យ ESCP ត្រូវតែរួមបញ្ចូលព្រោះវាជាផ្នែកមួយនៃវិធានការ ទាំងនោះ។</p> <p>ការអនុវត្តនៃ ESS នេះគឺពាក់ព័ន្ធនឹងការធានាដោយអនុលោម តាម ESS10 និងESSផ្សេងទៀតតាមការចាំបាច់នៅក្នុងបរិបទនៃគម្រោង។ (ESS-1 ទំព័រ ១០១១, ១៥, ២៣, ២៨-៣០ សៀវភៅណែនាំESS-1 GN ១៥.១-GN១៧.២)</p>		<p>ពិសេសដោយផ្ដោតទៅលើការវាយតម្លៃសង្គមនិងការគ្រប់គ្រងរួមទាំងក្រុមដែលងាយរងគ្រោះ ក៏ដូចជារួមបញ្ចូលផែនការការចូលរួមរបស់អ្នកពាក់ព័ន្ធដ៏ជាក់លាក់ផងដែរ។</p>	

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
លក្ខខណ្ឌការងារ និងសុវត្ថិភាពការងារ	<p>ESS1៖ ការវាយតម្លៃបរិស្ថាន និងសង្គមត្រូវតែ រួមបញ្ចូលហានិភ័យ និងផលប៉ះពាល់ដែលពាក់ព័ន្ធរួមទាំងហេតុប៉ះពាល់លំអិតសុខភាពសុវត្ថិភាព និងសុខុមាលភាពរបស់កម្មករនៃទីលាន។ (ESS-1 ទំព័រ ២៨)</p>	<p>ច្បាប់ការងារ (1997) រួមបញ្ចូលបទប្បញ្ញត្តិសុវត្ថិភាពសុខភាពការងារដែលមិនត្រូវបានផ្តល់ជូនសម្រាប់កន្លែងចាក់សំរាមអនាម័យនិងកន្លែងគ្រប់គ្រងសំណល់ផ្សេងទៀត។ច្បាប់នេះក៏បង្កើតនូវទំនួលខុសត្រូវរបស់និយោជកនៅកន្លែងធ្វើការផងដែររួមមាន៖ការផ្តល់ឧបករណ៍ការពារការធានានូវបរិស្ថានការងារប្រកបដោយសុវត្ថិភាព និងស្អាត និងសុវត្ថិភាពរបស់កម្មករនិយោជិតនិងការទទួលខុសត្រូវក្នុងគ្រោះថ្នាក់ការងារ រួមទាំងសំណងផងដែរ។ (ច្បាប់ការងារឆ្នាំ១៩៩៧ ជំពូកទី ៨ និងទី៩) អាយុអនុញ្ញាតអប្បបរមាសម្រាប់ការងារមានប្រាក់ឈ្នួលត្រូវបានកំណត់ត្រឹម១៥ឆ្នាំនិង១៨ឆ្នាំសម្រាប់ការងារដែលមានគ្រោះថ្នាក់។សម្រាប់កម្មករក្មេងៗអាយុពី១៥ដល់១៧ឆ្នាំការងារដែលមានប្រាក់ឈ្នួលបច្ចុប្បន្នត្រូវបានអនុញ្ញាតឱ្យធ្វើការពេលយប់។</p> <p>កុមារអាយុពី ១២ទៅ១៥ឆ្នាំអាចត្រូវបានជួលឱ្យធ្វើការងារស្រាលៗឯរាបណាបរិយាកាសការងារបំពេញដូចខាងក្រោម៖</p> <p>(១) ការងារមិនមានគ្រោះថ្នាក់ដល់សុខភាព ឬការអភិវឌ្ឍន៍ផ្លូវចិត្ត និងរាងកាយ។</p> <p>(២) ការងារនឹងមិនប៉ះពាល់ដល់ការចូលរៀនធម្មតារបស់ពួកគេ ការចូលរួមរបស់ពួកគេក្នុងកម្មវិធីណែនាំឬបណ្តុះបណ្តាលវិជ្ជាជីវៈដែលត្រូវបានអនុម័តដោយអាជ្ញាធរមានសមត្ថកិច្ច។និយមន័យនៃការងារស្រាលត្រូវបានផ្តល់ជូននៅក្នុងប្រកាសដាច់ដោយឡែកមួយ។ច្បាប់នេះអាចអនុវត្ត</p>	<p>ទាំងច្បាប់ WB ESS និង RGC ហាមឃាត់ការងាររបស់កុមារដែលមានអាយុក្រោម១៨ឆ្នាំចំពោះការងារគ្រោះថ្នាក់។ ទោះជាយ៉ាងណាក៏ដោយ ច្បាប់ជាតិបកស្រាយចំពោះតែកុមារដែលធ្វើការក្នុងវិស័យផ្លូវការប៉ុណ្ណោះ។ កុមារវ័យសំរាប់ក្នុងវិស័យក្រៅផ្លូវការក្នុងប្រទេសកម្ពុជា ក្នុងស្ថានភាពក្រីក្រ និងគ្មានសុខភាពល្អ។</p> <p>ដើម្បីដោះស្រាយគម្លាតនេះ ESMFណែនាំអាយុសម្រាប់ការងារអប្បបរមា១៨ឆ្នាំសម្រាប់អ្នកមើលការ(ព័ត៌មានលម្អិតនៅក្នុងLMP)។គោលការណ៍ណែនាំជាក់លាក់ក៏នឹងត្រូវបានបង្កើតឡើងផងដែរ</p>	<p>MOI, ជាមួយ MOE, MPWT, GDR, នៅក្រោមអ្នកមើលការរបស់ MEF អ្នកត្រួតពិនិត្យការសាងសង់</p>

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
		<p>បានចំពោះកិច្ចសន្យាការងារទាំងអស់នៅក្នុងទឹកដីនៃព្រះរាជាណាចក្រកម្ពុជាដោយមិនគិតពីកន្លែងដែលកិច្ចសន្យាត្រូវបានធ្វើឡើងនិងសញ្ញាតិ និងទីលំនៅរបស់ភាគីកិច្ចសន្យានោះទេ។ច្បាប់នេះអនុវត្តចំពោះគ្រប់សហគ្រាសឬគ្រឹះស្ថាននៅទូទាំងឧស្សាហកម្មនិងវិស័យទាំងអស់។</p> <p>ប្រកាសលេខ ០០២ ស្តីពីប្រភេទមុខរបរ និងការងារស្រាល ដែលត្រូវបានអនុញ្ញាតសម្រាប់កុមារ (២០០៨)ការងារស្រាលសម្រាប់កម្មករក្មេងៗដែលមានអាយុពី១២ ទៅ ១៥ឆ្នាំដែលទាក់ទងនឹងការងារដែលមិនប៉ះពាល់ដល់សុខភាពក៏ដូចជាការអភិវឌ្ឍន៍ផ្លូវចិត្តនិងរាងកាយរបស់កុមារដែលមានការងារហើយមិនប៉ះពាល់ដល់ការចូលរៀនទៀងទាត់របស់ពួកគេការចូលរួមនៅក្នុងកម្មវិធីតម្រង់ទិសឬការបណ្តុះបណ្តាលវិជ្ជាជីវៈដែលត្រូវការដោយអាជ្ញាធរមានសមត្ថកិច្ច រួមមាន៖</p> <ul style="list-style-type: none"> • ធ្វើការនៅផ្សារទំនើបមួយចំនួនដូចជាតូបលក់បន្លែនិងតូបលក់ផ្លែឈើឬតូបព័ត៌មាននិងតូបលក់ទំនិញស្រដៀងគ្នាផ្សេងទៀត។ • ការទទួលការវេចខ្ចប់ការជ្រើសរើសនិងការចាត់ថ្នាក់ទំនិញព្រមទាំងការកំឡើងវត្ថុស្រាលៗរួមទាំងការបើក ឬយកទំនិញចេញពីកេះ។ • លើកចេញ ជញ្ជូន និងកាន់វត្ថុស្រាលៗ។ <p>ប្រកាសនេះផ្តល់នូវការចុះបញ្ជីពេញលេញនៃប្រភេទការងារស្រាលសម្រាប់កុមារដែលមានអាយុពី១២ទៅ១៥ឆ្នាំហើយត្រូវបានរៀបរាប់លម្អិតនៅក្នុងផ្នែក៣.២.២។</p>	<p>ដើម្បីតម្រូវឱ្យអ្នកម៉ៅការអនុវត្តតាមក៏ដូចជាតាមដានការឱ្យវាទរបស់ពួកគេ។</p> <p>សម្រាប់អនុគម្រោងដែលពាក់ព័ន្ធនឹងអ្នករើសសំរាមផែនការតាំងទីលំនៅថ្មី(DRPs)នឹងត្រូវបានរៀបចំអនុម័តនិងអនុវត្តដោយមានការពិគ្រោះយោបល់ជាមួយអ្នកដែលរងផលប៉ះពាល់ដោយអនុលោមតាម ESS5និងស្របតាមតម្រូវការនៃក្របខ័ណ្ឌគោលនយោបាយតាំងលំនៅថ្មី (RPF)និងមានការព្រមព្រៀងជាមួយអគ្គនាយកដ្ឋានតាំងទីលំនៅថ្មី (GDR) ក្រោមក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ (MEF)។ នេះនឹងរួមបញ្ចូលទាំងការផ្លាស់ទីលំនៅរូបវន្តនិងការផ្លាស់ទីលំនៅផ្នែកសេដ្ឋកិច្ច</p>	

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
		<p>អ្នកដែលជួលកុមារអាយុពី១២ទៅ១៥ឆ្នាំសម្រាប់ការងារកម្រិតស្រាល ត្រូវអនុញ្ញាតឱ្យឪពុកម្តាយឬអាណាព្យាបាលយល់អំពីលក្ខខណ្ឌការងារ រួមទាំងម៉ោងធ្វើការរបស់កុមារពេលវេលាចូលរៀនភាពងាយរងគ្រោះ ទាក់ទងនឹងគ្រោះថ្នាក់ការងារនិងជំងឺវិធានការដែលបានអនុម័តលើ អនាម័យ និងសុវត្ថិភាពការងារ។</p> <p>ម៉ោងធ្វើការសម្រាប់កុមារទាំងនេះមិនត្រូវលើសពីបួន (៤) ម៉ោងសម្រាប់ថ្ងៃសិក្សា និងប្រាំពីរ (៧) ម៉ោងសម្រាប់ថ្ងៃឈប់សំរាកពីសាលា។ ពួកគេក៏ត្រូវបានហាមមិនឱ្យធ្វើការចន្លោះពីម៉ោង ៨ យប់ ដល់ ៦ ព្រឹក។ ពួកគេមានសិទ្ធិសម្រាកពីរ (២) ថ្ងៃជាប់ៗគ្នាក្នុងមួយសប្តាហ៍។</p>	<p>និងរួមបញ្ចូលទាំងកម្មវិធីស្តារ និងកែលម្អជីវភាពរស់នៅ សម្រាប់អ្នកដែលរងផលប៉ះពាល់។ការយកចិត្តទុកដាក់ដាក់លាក់ណាមួយនឹងត្រូវបានបង់អោយកុមាររើសសំរាម និងគ្រួសាររបស់ពួកគេ ។</p>	
	<p>ESS2៖ នីតិវិធីគ្រប់គ្រងការងារសម្រាប់កម្មករគ្រប់ប្រភេទដែលត្រូវធ្វើការ ឬចូលរួមដោយគម្រោងត្រូវតែរួមបញ្ចូលអត្ថប្រយោជន៍អប្បបរមា កិច្ចព្រមព្រៀងបញ្ចប់ការងារគោលការណ៍មិនរើសអើង និងឱកាសស្មើគ្នាអាយុអប្បបរមារបស់កម្មករ សុខភាព និងសុវត្ថិភាពការងារ និងយន្តការសារ ទុកដើម្បីបង្កើតស្តង់ដារការងារនៅកន្លែងធ្វើការ។</p> <p>ESS2កថាខណ្ឌ១៩ និងលេខយោង១៣កត់សម្គាល់ថាកុមារដែល មានអាយុក្រោម១៨ឆ្នាំអាចត្រូវបានជួល ឬចូលរួមក្នុងគម្រោងប្រសិនបើ</p>	<p>ប្រកាសលេខ ១០៦ ស្តីពីការហាមឃាត់ពលកម្មកុមារ ដែលមានគ្រោះថ្នាក់ (២០០៤) ហាមប្រាមការងាររបស់កុមារអាយុ ក្រោម១៨ឆ្នាំលើការងារដែលពាក់ព័ន្ធនឹងការងារគ្រោះថ្នាក់ពាក់ព័ន្ធដូចជាការសាងសង់ និងការរុះរើ(លើកលែងតែតំបន់សុវត្ថិភាពដែលបានកំណត់ដោយមានការអនុញ្ញាតពីក្រុមអធិការកិច្ចការងារ)ការប៉ះពាល់នឹងសារធាតុគីមីនិងសារធាតុគ្រោះថ្នាក់ការប៉ះពាល់ផ្សែងផូលីឌ៍និងសារធាតុជុំវិញផ្សែងទៀតគ្រឿងចក្រនិងឧបករណ៍ផុសផុល។</p> <p>និយោជកដែលពិចារណាជួលកុមារអាយុ១៦ឆ្នាំឱ្យធ្វើការងារគ្រោះថ្នាក់គឺតម្រូវឱ្យទទួលបានលិខិតអនុញ្ញាតពីក្រសួងហើយត្រូវប្រកាន់ខ្ជាប់នូវចំណុចដូចខាងក្រោម៖</p>	<p>អនុគម្រោងLMP មានបទប្បញ្ញត្តិជាក់លាក់ទាក់ទងនឹងការរឹតបន្តឹងពលកម្ម កុមារណាមួយនៅក្នុងគម្រោងទាំងជាកម្មករដោយផ្ទាល់កិច្ចសន្យាឬការផ្គត់ផ្គង់បឋម។ បន្ថែមពីលើ</p>	

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
	<p>ការងារមិនមានគ្រោះថ្នាក់ការវាយតម្លៃហានិភ័យសមស្របត្រូវបានធ្វើឡើងមុនពេលចាប់ផ្តើមការងារហើយអ្នកទទួលត្រូវធ្វើការតាមដានជាប្រចាំនូវ សុខភាព លក្ខខណ្ឌការងារ ម៉ោងធ្វើការ។</p> <p>គោលការណ៍ណែនាំរបស់ EHS សម្រាប់កន្លែងគ្រប់គ្រងកាកសំណល់ស្តីពីសុខភាព និងសុវត្ថិភាពការងារ៖ នីតិវិធីសុវត្ថិភាពការងារសម្រាប់ប្រតិបត្តិការទីលានចាក់សំរាមត្រូវតែរួមបញ្ចូលបទប្បញ្ញត្តិទាក់ទងនឹង៖(១)គ្រោះថ្នាក់ និងការរងរបួសរួមមានទាំងអ្នក ដែលពាក់ព័ន្ធនឹងឡានដឹកទំនិញ និងឧបករណ៍ អាចចល័តផ្ទៃសំរាមដែលចាក់មិនមានលំនឹងហើយមានការរុះរើនិងមានការផ្ទុះ (២) ការប៉ះពាល់ នឹងសារធាតុគីមីរួមទាំងការប៉ះពាល់នឹងការរលាកដោយសារគីមី (៣)ការប៉ះពាល់នឹងភ្នាក់ងារ បង្ករោគ និងការឆ្លងរោគដែលអាចបង្កគ្រោះថ្នាក់ ដល់សុខភាព។ សម្រាប់ការរស់នៅខុសច្បាប់នៅ ជិតកន្លែងគ្រប់គ្រងសំរាមពួកគេច្រើនតែមាន លក្ខណៈរស់នៅមិនសូវល្អដោយមានទឹក និង</p>	<ul style="list-style-type: none"> • មិនមានការងារធ្វើចន្លោះម៉ោង ១០:០០ យប់ ដល់៥:០០ ព្រឹក • កុមារត្រូវទទួលបានការបណ្តុះបណ្តាល • ការប្រឹក្សាយោបល់ជាមួយគណៈកម្មាធិការប្រឹក្សាការងារ • ការពិនិត្យសុខភាពប្រចាំឆ្នាំជាមួយនាយកដ្ឋានសុខភាពការងារដើម្បីបញ្ជាក់ថាពួកគេស្ថិតក្នុងស្ថានភាពសុខភាពល្អ ដើម្បីចូលរួមក្នុងការងារដែលមានគ្រោះថ្នាក់។ <p>ច្បាប់ស្តីពីការបង្ក្រាបការជួញដូរមនុស្ស និងការកេងប្រវ័ញ្ចផ្លូវភេទ (២០០៨)ប្រកាសអំពីទម្រង់នៃការជួញដូរមនុស្សនិងការកេងប្រវ័ញ្ចផ្លូវភេទរួមទាំងពលកម្មដោយបង្ខំឬសេវាកម្មទាសករឬការអនុវត្តស្រដៀងទៅនឹងទាសភាពចំណងបំណុលការបម្រើដោយអចេតនានិងពលកម្មកុមារសម្រាប់ការកប្រាក់ចំណេញដោយខុសច្បាប់។នៅក្នុងកំណត់សម្គាល់លើច្បាប់ដោយក្រសួងយុត្តិធម៌ការងារដោយបង្ខំត្រូវបានកំណត់ថាជាការងារឬសេវាកម្មទាំងអស់ដែលត្រូវបានធ្វើលើជនណាម្នាក់នៅក្រោមការគំរាមកំហែងណាមួយហើយដែលបុគ្គលនោះមិនបានធ្វើដោយស្ម័គ្រចិត្ត (IJM, ២០១៦)។</p>	<p>វិធានការផ្ទៀងផ្ទាត់ អាយុវាត់តម្រូវមិនឱ្យមានការលើកលែងចំពោះការជាប់ពាក់ព័ន្ធក្នុងការងារដែលមានគ្រោះថ្នាក់អាចត្រូវបានផ្តល់ជូន និងទម្រង់ការងារណាមួយដោយកុមារមានក្រោមអាយុ១៤ឆ្នាំនឹងមិនត្រូវបានអនុញ្ញាតឡើយ។ ព័ត៌មានលម្អិតបន្ថែមអំពីគម្លាតនិងវិធានការសម្រាប់កម្លាំងពលកម្មមាននៅក្នុង LMP។</p>	<p>MOI ជាមួយការចូលរួមពីក្រុង អ្នកថៅការ និងអ្នកគ្រប់គ្រងសំណង់</p>

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
	<p>អនាម័យតិចតួចប៉ុណ្ណោះ។ ពួកគាត់ក៏មាន ហានិភ័យជាពិសេសចំពោះការប៉ះពាល់នឹង សំណល់ និងផ្សែងដែលមានគ្រោះថ្នាក់ និងពុលផងដែរ។ ការផ្លាស់ប្តូរសេដ្ឋកិច្ចដោយបញ្ហា ទាំងនេះត្រូវតែជៀសវាងតាមដែលអាចធ្វើទៅបានជាពិសេសដោយគ្មានការផ្តល់ជម្រើសណាមួយឡើយ។</p> <p>គ្រឿងបរិក្ខារគ្រប់គ្រងសំណល់រឹងក្នុងត្រូវតែធ្វើការរួមគ្នាជាមួយអង្គភាពរដ្ឋាភិបាលដើម្បីអាចឱ្យមានការប្រមូលនិងញែកសំណល់រឹង។ ប្រសិនបើអាច ការផ្តួចផ្តើមគំនិតដើម្បីជួយពួកគេបង្កើតជាអង្គភាពផ្លូវការដូចជាសហករណ៍ឬសហគ្រាសខ្នាតតូចអាចធ្វើបានដើម្បីចុះកិច្ចសន្យាជាផ្លូវការទៅក្នុងដំណើរការបរិក្ខារ។ នៅពេលដែលការងារនេះត្រូវបានដាក់ឱ្យ ដំណើរការជាផ្លូវការកម្មករនិយោជិតត្រូវតែចុះឈ្មោះជាផ្លូវការ ផ្តល់ឧបករណ៍ការពារ ផ្តល់កន្លែងបោកគក់ និងអនាម័យព្រមទាំងទទួលការពិនិត្យសុខភាព និងចាក់វ៉ាក់សាំងជាប្រចាំក្រោមកម្មវិធីតាមដានសុខភាព។ ការសិក្សានៃគ្រឿងបរិក្ខារនេះក៏ត្រូវពិចារណាផងដែរនូវការចូល</p>			

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ			
	កាន់តែងាយស្រួលទៅប្រើប្រាស់វត្ថុដែលអាចកែច្នៃឡើងវិញបាន និងកាត់បន្ថយទំនាក់ទំនងរបស់ពួកគេចំពោះសំណល់ដែលបង្កគ្រោះថ្នាក់។ (ទំ.២៣-២៦)						
ការបំពុល	ESS3៖ គោលនយោបាយទាក់ទងនឹងតម្រូវការ និងស្តង់ដារទាក់ទងនឹងការប្រើប្រាស់ធនធានប្រកបដោយនិរន្តរភាពក្នុងដំណាក់កាលផ្សេងៗនៃគម្រោងត្រូវតែដាក់ចេញ។លើសពីនេះវិធានការបង្ការនិងកាត់បន្ថយការបំពុលរយៈពេលខ្លីនិងរយៈពេលវែង(ឧ.ខ្យល់ទឹកសំលេងរំខាន)និងកាត់សំណល់(ឧ.គ្រោះថ្នាក់មិនមានគ្រោះថ្នាក់និងគីមី)ក៏ត្រូវតែផ្តល់អោយផងដែរ។	ច្បាប់ស្តីពីការការពារបរិស្ថាន និងការគ្រប់គ្រងធនធានធម្មជាតិ (១៩៩៦) ផ្តល់អំណាចក្នុងការបង្កើតអនុក្រឹត្យស្តីពីការត្រួតពិនិត្យការបំពុលខ្យល់ និងការរំខានដោយសំឡេងការពិនិត្យការបំពុលទឹកនិងដំណើរការវាយតម្លៃផលប៉ះពាល់បរិស្ថាន។	ប្រសិទ្ធភាពលើធនធាន និងវិធានការបង្ការនិងគ្រប់គ្រងការបំពុលត្រូវបង្កើតនៅក្រោម ESMP ដើម្បីរៀបចំដាក់បញ្ចូលនិងអនុវត្ត។	MPWT,M OI,MOE			
	គោលការណ៍ណែនាំទូទៅរបស់ EHS៖ ស្តង់ដារអន្តរជាតិស្តីពីគុណភាពខ្យល់ និងកម្រិតសំឡេងរំខានត្រូវបានរួមបញ្ចូលនៅក្នុងគោលការណ៍ណែនាំដូចខាងក្រោម៖ គុណភាពខ្យល់ខាងក្រៅ៖ ស្តង់ដារគុណភាពខ្យល់ខាងក្រៅរបស់អង្គការសុខភាពពិភពលោកដែលបានកំណត់ក្នុងឆ្នាំ២០០៥ ត្រូវបានអនុម័ត។	អនុក្រឹត្យលេខ៤២ស្តីពីការត្រួតពិនិត្យការបំពុលខ្យល់និងការរំខានដោយសំឡេង(២០០០) បង្កើតស្តង់ដារស្តីពីគុណភាពខ្យល់បរិយាកាស និងកម្រិតសំឡេងរំខានអតិបរមាដែលអនុញ្ញាតបានដូចខាងក្រោម៖ សម្លេង៖ យានយន្ត <table><tr><th>ប្រភេទយានយន្ត</th><th>កំណត់អតិបរមា(dB (A))</th></tr><tr><td><១២៥សម^៣</td><td>៨៥</td></tr><tr><td>≥១២៥សម^៣</td><td>៩០</td></tr></table>			ប្រភេទយានយន្ត	កំណត់អតិបរមា(dB (A))	<១២៥សម ^៣
ប្រភេទយានយន្ត	កំណត់អតិបរមា(dB (A))						
<១២៥សម ^៣	៨៥						
≥១២៥សម ^៣	៩០						

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ		គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ																
	កម្រិតសំឡេងរំខាន៖ គោលការណ៍ណែនាំរបស់អង្គការសុខភាពពិភពលោកស្តីពីសំឡេងរំខានសហគមន៍ដែលបាន កំណត់ក្នុងឆ្នាំ ១៩៩៩ ត្រូវបានអនុម័ត។ (ទំ.4, 53)	<table><tr><td><១២កេអិ</td><td>៨០</td></tr><tr><td>≥១២កេអិ</td><td>៨៥</td></tr><tr><td><៣.៥តោន</td><td>៨៥</td></tr><tr><td>≥៣.៥តោន</td><td>៨៨</td></tr><tr><td>≥១៥០kw</td><td>៨៩</td></tr><tr><td>ផ្សេងទៀតដែលមិនរួមបញ្ចូលផ្នែកខាងលើ</td><td>៩១</td></tr></table>	<១២កេអិ	៨០	≥១២កេអិ	៨៥	<៣.៥តោន	៨៥	≥៣.៥តោន	៨៨	≥១៥០kw	៨៩	ផ្សេងទៀតដែលមិនរួមបញ្ចូលផ្នែកខាងលើ	៩១							
<១២កេអិ	៨០																				
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ផ្សេងទៀតដែលមិនរួមបញ្ចូលផ្នែកខាងលើ	៩១																				
		សម្លេង៖ តំបន់លំនៅដ្ឋាន និងកន្លែងសាធារណៈ																			
		<table><tr><th>ទីតាំង</th><th>៦ព្រឹក-៦ល្ងាច</th><th>៦ល្ងាច-១០យប់</th><th>១០យប់-៦ព្រឹក</th></tr><tr><td>មិនមែនលំនៅដ្ឋាន៖ មន្ទីរពេទ្យ សាលារៀន មត្តេយ្យ</td><td>៤៥</td><td>៤០</td><td>៣៥</td></tr><tr><td>លំនៅដ្ឋាន៖ សណ្ឋាគារ ផ្ទះ</td><td>៦០</td><td>៥០</td><td>៤៥</td></tr><tr><td>ពាណិជ្ជកម្ម សេវាកម្ម</td><td>៧០</td><td>៦៥</td><td>៥០</td></tr></table>	ទីតាំង	៦ព្រឹក-៦ល្ងាច	៦ល្ងាច-១០យប់	១០យប់-៦ព្រឹក	មិនមែនលំនៅដ្ឋាន៖ មន្ទីរពេទ្យ សាលារៀន មត្តេយ្យ	៤៥	៤០	៣៥	លំនៅដ្ឋាន៖ សណ្ឋាគារ ផ្ទះ	៦០	៥០	៤៥	ពាណិជ្ជកម្ម សេវាកម្ម	៧០	៦៥	៥០			
ទីតាំង	៦ព្រឹក-៦ល្ងាច	៦ល្ងាច-១០យប់	១០យប់-៦ព្រឹក																		
មិនមែនលំនៅដ្ឋាន៖ មន្ទីរពេទ្យ សាលារៀន មត្តេយ្យ	៤៥	៤០	៣៥																		
លំនៅដ្ឋាន៖ សណ្ឋាគារ ផ្ទះ	៦០	៥០	៤៥																		
ពាណិជ្ជកម្ម សេវាកម្ម	៧០	៦៥	៥០																		

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ				គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ																						
		ឧស្សាហកម្ម ចម្រុះនិង លំនៅដ្ឋាន	៧៥	៧០	៥០																								
		សម្លេង៖ ស្តង់ដារនៅកន្លែងការងារនិងរោងចក្រ																											
		<table><tr><th>កម្រិតសម្លេង (dB (A))</th><th>រយៈពេលអតិបរមា (hour)</th><th>កំណត់ចំណាំ</th></tr><tr><td>៧៥</td><td>៣២</td><td rowspan="9">ប្រដាប់ដោតត្រចៀក គឺត្រូវការសម្រាប់អ្នកដែលធ្វើការនៅ ៨០ dB (A)</td></tr><tr><td>៨០</td><td>១៦</td></tr><tr><td>៨៥</td><td>៨</td></tr><tr><td>៩០</td><td>៤</td></tr><tr><td>៩៥</td><td>២</td></tr><tr><td>១០០</td><td>១</td></tr><tr><td>១០៥</td><td>០.៥</td></tr><tr><td>១១០</td><td>០.២៥</td></tr><tr><td>១១៥</td><td>០.១២៥</td></tr></table>				កម្រិតសម្លេង (dB (A))	រយៈពេលអតិបរមា (hour)	កំណត់ចំណាំ	៧៥	៣២	ប្រដាប់ដោតត្រចៀក គឺត្រូវការសម្រាប់អ្នកដែលធ្វើការនៅ ៨០ dB (A)	៨០	១៦	៨៥	៨	៩០	៤	៩៥	២	១០០	១	១០៥	០.៥	១១០	០.២៥	១១៥	០.១២៥		
កម្រិតសម្លេង (dB (A))	រយៈពេលអតិបរមា (hour)	កំណត់ចំណាំ																											
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		<table><tr><td></td><td>១ម៉ោង (mg/m³)</td><td>៨ម៉ោង (mg/m³)</td><td>២៤ម៉ោង (mg/m³)</td><td>១ឆ្នាំ (mg/m³)</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>					១ម៉ោង (mg/m³)	៨ម៉ោង (mg/m³)	២៤ម៉ោង (mg/m³)	១ឆ្នាំ (mg/m³)																			
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ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ					គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
		CO	៤០	២០				
		NO ₂	០.៣			០.១		
		SO ₂	០.៥			០.៣	០.១	
		O ₃	០.២					
		Pb				០.០០៥		
		TSP				០.៣៣	០.១	
	គោលការណ៍ណែនាំរបស់ EHS សម្រាប់កន្លែងគ្រប់គ្រងសំណល់ស្តីពីការបំបាត់ និងការគ្រប់គ្រងសំលេងរំខាន៖ គោលការណ៍ណែនាំបន្ថែមស្តីពីការគ្រប់គ្រងការបំបាត់ជាក់លាក់សម្រាប់កន្លែងគ្រប់គ្រងកាកសំណល់រួមមាន៖(១)ការដាក់បញ្ចូលប្រព័ន្ធប្រមូលឧស្ម័ននៅទីលានចាក់សំរាម និងការប្រើប្រាស់វា ប្រសិនបើអាចអនុវត្តបាន (២) ការប្រើប្រាស់ឧបករណ៍ ផ្គុំឧស្ម័ន និង(៣)ការដំឡើងនិងការយកសំណាក ដោយឡែកទាត់តាមបំពង់ដែលគេបានខ្វែង។ សេចក្តីណែនាំបន្ថែមស្តីពីការគ្រប់គ្រងការរំខានដោយសំលេងជាក់លាក់សម្រាប់កន្លែងគ្រប់គ្រងសំណល់រួមមាន៖(១)ការសាងសង់តំបន់ការពារ	គោលការណ៍ណែនាំបច្ចេកទេសស្តីពីការគ្រប់គ្រងសំណល់រឹងទីក្រុង (២០១៦)រួមមានគោលការណ៍ណែនាំនិងសេចក្តីណែនាំលម្អិតទាក់ទងនឹងប្រតិបត្តិការការថែទាំនិងការបិទកន្លែងចាក់សំរាមរួមទាំងវិធីសាស្ត្ររៀបចំ ការគ្រប់គ្រង និងប្រព្រឹត្តកម្មសំណល់វេជ្ជសាស្ត្រ និងគីមី។						

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	<p>(២)ការថែទាំគុណភាពផ្លូវ(៣)ការប្រើប្រាស់ឧបករណ៍ដែលមានកម្រិតបញ្ចេញសំឡេងទាប</p> <p>(៤)ការប្រើប្រាស់សម្ភារៈការពារសំឡេងបន្ទះការពារនិងឧបករណ៍បំបិទសំឡេង(៥)ភ្ជាប់ឧបករណ៍ការពារសំលេងរំខាននៅក្នុងរចនាសម្ព័ន្ធដែលបានកំណត់និង(៦)ការដាក់បញ្ចូលនូវការគិតពិចារណាលើសំលេងរំខាននៅក្នុងដំណើរការសិក្សា។</p> <p>គោលការណ៍ណែនាំរបស់ EHS សម្រាប់ការគ្រប់គ្រងសំណល់លើកន្លែងចាក់សំរាម៖ ទឹកក្រោមដី និងតំបន់ដែលអាចបញ្ចូលទឹកបាន ជាទឹកលើដី។ ទឹកសម្រាប់ផឹកបានពីឯកជន ឬរបស់រដ្ឋប្រព័ន្ធធារាសាស្ត្រ ឬការផ្គត់ផ្គង់ទឹក សម្រាប់សត្វពាហនៈ និងទឹកហូរដែលមានអាយុ ច្រើនឆ្នាំត្រូវតែគិតពិចារណា។ ការប៉ះពាល់លើទី តាំងដែលបានស្នើឡើងចំពោះគ្រោះថ្នាក់វារីឧតុនិយមនិងគ្រោះរញ្ជួយដីត្រូវបានគិតពិចារណានៅក្នុងការជ្រើសរើសទីតាំង។</p> <p>(វគ្គ 1.1.1 ទំ.10-11, 14)</p>			

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ																										
សុខភាព និងសុវត្ថិភាពសហគមន៍	ESS1៖ការវាយតម្លៃសង្គមបរិស្ថានត្រូវតែរួមបញ្ចូលហានិភ័យនិងហេតុប៉ះពាល់ដែលពាក់ព័ន្ធទៅលើសុខភាព សុវត្ថិភាព និងសុខុមាលភាពនៃសហគមន៍ ដែលរងហេតុប៉ះពាល់ដោយសារគម្រោង រួមជាមួយនឹងបទប្បញ្ញត្តិសុវត្ថិភាព សហគមន៍នៃគោលការណ៍ណែនាំ EHS ១ (ESS-1 Par 28)	អនុក្រឹត្យលេខ ៤២៣ ស្តីពីការត្រួតពិនិត្យការបំពុលខ្យល់និងការរំខានដោយសំឡេង(២០០០)បង្កើតស្តង់ដារស្តីពីគុណភាពខ្យល់ខាងក្រៅនិងកម្រិតសំឡេងរំខានអតិបរមាដែលអាចអនុញ្ញាតបានដូចខាងក្រោម៖ <div>សម្លេង៖ យានយន្ត</div> <table><tr><th>ប្រភេទយានយន្ត</th><th>កំណត់អតិបរមា (dB (A))</th></tr><tr><td><១២៥សម^៣</td><td>៨៥</td></tr><tr><td>≥១២៥សម^៣</td><td>៩០</td></tr><tr><td><១២កេអ៊ី</td><td>៨០</td></tr><tr><td>≥១២កេអ៊ី</td><td>៨៥</td></tr><tr><td><៣.៥តោន</td><td>៨៥</td></tr><tr><td>≥៣.៥តោន</td><td>៨៨</td></tr><tr><td>≥១៥០kw</td><td>៨៩</td></tr><tr><td>ផ្សេងទៀតដែលមិនរួមបញ្ចូលផ្នែកខាងលើ</td><td>៩១</td></tr></table> <div>សម្លេង៖ តំបន់លំនៅដ្ឋាន និងកន្លែងសាធារណៈ</div> <table><tr><th>ទីតាំង</th><th>៦ព្រឹក-៦ល្ងាច</th><th>៦ល្ងាច-១០យប់</th><th>១០យប់-៦ព្រឹក</th></tr><tr><td></td><td></td><td></td><td></td></tr></table>	ប្រភេទយានយន្ត	កំណត់អតិបរមា (dB (A))	<១២៥សម ^៣	៨៥	≥១២៥សម ^៣	៩០	<១២កេអ៊ី	៨០	≥១២កេអ៊ី	៨៥	<៣.៥តោន	៨៥	≥៣.៥តោន	៨៨	≥១៥០kw	៨៩	ផ្សេងទៀតដែលមិនរួមបញ្ចូលផ្នែកខាងលើ	៩១	ទីតាំង	៦ព្រឹក-៦ល្ងាច	៦ល្ងាច-១០យប់	១០យប់-៦ព្រឹក					ភាពជាក់លាក់របស់ផ្នែកមួយនៃ ESIA និង ESMP គឺរៀបចំអនុម័តនិងអនុវត្តវិធានការនិងសកម្មភាពដើម្បីវាយតម្លៃនិងគ្រប់គ្រងហានិភ័យនិងផលប៉ះពាល់ជាក់លាក់ចំពោះសហគមន៍ដែលកើតចេញពីសកម្មភាពរបស់គម្រោង រួមទាំងការជួសជុលកន្លែងចាក់សំរាម ឬការស្តារឡើងវិញ នូវកន្លែងចាក់សំរាមការសាងសង់កន្លែងផ្ទេរសំណល់ និងឬកន្លែងប្រព្រឹត្តកម្ម ដូចដែលបានពិពណ៌នានៅក្នុង ESMPs សម្រាប់អនុគម្រោង ឮដែលត្រូវបានរៀបចំស្របតាម ESMFក្នុងលក្ខណៈដែលអាច	MPWT ជាមួយ MOE, MOIការចូលរួមពីក្រុង អ្នកម៉ៅការ និងអ្នកគ្រប់គ្រងសំណង់
		ប្រភេទយានយន្ត	កំណត់អតិបរមា (dB (A))																											
		<១២៥សម ^៣	៨៥																											
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≥១២កេអ៊ី	៨៥																													
<៣.៥តោន	៨៥																													
≥៣.៥តោន	៨៨																													
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ផ្សេងទៀតដែលមិនរួមបញ្ចូលផ្នែកខាងលើ	៩១																													
ទីតាំង	៦ព្រឹក-៦ល្ងាច	៦ល្ងាច-១០យប់	១០យប់-៦ព្រឹក																											

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ				គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
		លំនៅដ្ឋាន ៖សណ្ឋាគារ ផ្ទះ	៦០	៥០	៤៥	ទទួលយកបានពីសមាគមន៍។ ESMPsនឹងរួមបញ្ចូលការគ្រប់គ្រងលំហូរការងារGBV និងសុវត្ថិភាពផ្លូវក្នុងដំណាក់កាលសាងសង់។	
		ឧស្សាហកម្ម ចម្រុះជាមួយ លំនៅដ្ឋាន	៧៥	៧០	៥០		
	ESS4៖ ហានិភ័យ និងផលប៉ះពាល់ចំពោះ សុខភាពសុវត្ថិភាពនិងសន្តិសុខ និងសហគមន៍ ដែលរងហេតុប៉ះពាល់ដោយសារគម្រោងដែលបានកំណត់ត្រូវតែកំណត់និងបង្រួមជាអប្បបរមា។ គ្រប់ហានិភ័យដែលមានសក្តានុពលទាំងអស់នៅគ្រប់ដំណាក់កាលនៃគម្រោងត្រូវបានកំណត់និងវាយតម្លៃខណៈនេះត្រូវធ្វើការពិចារណាលើក្រុមដែលមិនទទួលបានប្រយោជន៍ស្ថានភាពជនពិការ និងងាយរងគ្រោះ។	ច្បាប់ការងារនៃព្រះរាជាណាចក្រកម្ពុជា (១៩៩៧) រួមមានជំពូកទី៨ សុខភាព និងសុវត្ថិភាពកម្មករ មាត្រា ២២៨ ដល់ ២៤៧					
	គោលការណ៍ណែនាំរបស់ EHS សម្រាប់កន្លែងគ្រប់គ្រងកាកសំណល់៖ <u>ប្រតិបត្តិការរយៈពេលវែងការបញ្ឈប់ឬការបិទ៖</u> នីតិវិធីជាក់លាក់លើការបិទត្រូវតែសង្កត់ធ្ងន់លើការ រក្សានូវសមាហរណកម្មយូរអង្វែងនិងសុវត្ថិភាព	អនុក្រឹត្យស្តីពីការគ្រប់គ្រងសំណល់រឹងទីក្រុង(២០១៧)គោលបំណងនៃអនុក្រឹត្យនេះគឺដើម្បីគ្រប់គ្រងការគ្រប់គ្រងសំណល់រឹងប្រកបដោយលក្ខណៈបច្ចេកទេសត្រឹមត្រូវ និងសុវត្ថិភាព ដើម្បីធានាការការពារសុខភាពនិងការអភិរក្សជីវចម្រុះ។អនុក្រឹត្យនេះអនុវត្តចំពោះរាល់សកម្មភាពដែលទាក់ទងនឹងការបោះចោល ការផ្ទុក ការប្រមូល ការដឹកជញ្ជូន ការកែច្នៃ					

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
	<p>ភាពនៅការដ្ឋាន។ ផែនការបិទនិងក្រោយការបិទត្រូវតែ រួមបញ្ចូល ការកាត់បន្ថយផលប៉ះពាល់ដល់សុខភាព និងបរិស្ថានបន្ទាប់ពីការបិទ។ ផែនការទាំងអស់ត្រូវតែស្របតាមការប្រើប្រាស់ក្រោយការបិទដែលបានកំណត់។</p> <p><u>កន្លែងចាក់សំរាម</u>៖ក្នុងការកំណត់កន្លែងចាក់សំរាមការអភិវឌ្ឍន៍លំនៅដ្ឋានដែលនៅជិតបំផុតត្រូវមានចម្ងាយជាង២៥០ម៉ែត្រពីទីតាំងដែលបានស្នើឡើង។</p> <p><u>សុខភាពនិងសុវត្ថិភាពសហគមន៍</u>៖ហេតុប៉ះពាល់ខាងក្រោមដែលអាចនឹងកើតឡើងក្នុងកំឡុងប្រតិបត្តិការនិងដំណាក់កាលនៃការបញ្ឈប់ការងារត្រូវតែពិនិត្យមើល៖</p> <p>(១)<u>ការរើសអេកបាយ</u>៖ ក្នុងកាលៈទេសៈណាក៏ដោយមិនគួរអនុញ្ញាតឲ្យ មានការរើសអេកបាយនៅក្នុងតំបន់គ្រប់គ្រង សំណល់ឧស្សាហកម្មដែលមានគ្រោះថ្នាក់និងគ្មានគ្រោះថ្នាក់ដែរ។ មានតែកន្លែងគ្រប់គ្រង សំណល់រឹងទីក្រុងប៉ុណ្ណោះដែលអាចពិចារណា បញ្ចូលការងារនេះ។</p>	<p>ការចោលសំរាម និងកាកសំណល់គ្រោះថ្នាក់ (មាត្រា២)។ ការប្រមូលការដឹកជញ្ជូនការផ្ទុកកែច្នៃកាត់បន្ថយនិងចាក់ចោលកាកសំណល់តាមខេត្ត ក្រុង ជាបន្តបន្ទាប់អាជ្ញាធរខេត្ត ក្រុង ។</p>		

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
	<p>(២) គ្រោះថ្នាក់រូបវន្តគីមីនិងជីវសាស្ត្រ៖ ការចូលទៅកាន់តំបន់ធនាគារពិសេសសម្រាប់តំបន់ដែលមានកាកសំណល់ពុលត្រូវតែរឹតបន្តឹងនិងអនុវត្តនីតិវិធីសុវត្ថិភាព។</p> <p>(៣) សំរាមប្រើប្រាស់៖ សំរាមនៅខាងក្រៅកន្លែងត្រូវតែគ្រប់គ្រងដើម្បីជៀសវាងការប៉ះពាល់របស់សហគមន៍ដែលនៅជាប់ដោយសារសារធាតុគ្រោះថ្នាក់និងអាចរីករាលដាលជំងឺ។</p> <p>(៤) សំលេងរំខាន៖ ធានាការចំពោះការគ្រប់គ្រងសំលេងរំខានគួរតែត្រូវបានចាត់ទុកជាមោឃៈ ដែលបង្កឱ្យមានការរំខានដល់តំបន់ដែលនៅជាប់។</p> <p>(៥) ធូលីនិងក្លិន៖ តំបន់ទ្រនាប់ត្រូវតែរួមបញ្ចូលក្នុងការសិក្សាជាពិសេសចន្លោះតំបន់កែច្នៃ និងកន្លែងទទួលជាពិសេសលំនៅដ្ឋានមន្ទីរពេទ្យ និងសាលារៀន។ តំបន់កែច្នៃត្រូវតែស្ថិតនៅក្នុងតំបន់ផ្នែកខាងក្រោមខ្យល់ពីតំបន់ទាំងនេះដើម្បីគ្រប់គ្រងនិងពិនិត្យការប៉ះពាល់ដល់សហគមន៍ដោយសារធូលីនិងក្លិន។</p> <p>(វគ្គ ១.១.១ ទំ.១០-១១, ១៤វគ្គ ១.៣ ទំ.២៦)</p>			

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
ការទទួលយកដីនិងការស្តារជីវភាពរស់នៅ	<p>ESS5 គោលបំណងនៃ ESS5 គឺដើម្បី៖</p> <ul style="list-style-type: none"> • ជៀសវាងការតាំងទីលំនៅថ្មីដោយអចេតនាឬនៅពេលដែលមិនអាចជៀសរួច កាត់បន្ថយជាអតិបរមានូវការតាំងទីលំនៅថ្មីដោយមិនស្ម័គ្រចិត្តដោយស្វែងរកជម្រើសនៃការសិក្សាគម្រោង។ • ជៀសវាងការបណ្តេញចេញដោយបង្ខំ។ • កាត់បន្ថយផលប៉ះពាល់អវិជ្ជមានសង្គម និងសេដ្ឋកិច្ចដែលមិនអាចជៀសបានពីការទិញយកដីឬការរឹតបន្តឹងលើការប្រើប្រាស់ដីដីដោយ៖(ក)ការផ្តល់សំណងទាន់ពេលវេលាសម្រាប់ការបាត់បង់ទ្រព្យសម្បត្តិក្នុងតម្លៃជំនួស (ខ)ជួយជនភៀសខ្លួនក្នុងកិច្ចខិតខំប្រឹងប្រែងដើម្បីកែលម្អឬយ៉ាងហោចណាស់ស្តារឡើងវិញនូវ ជីវភាពរស់នៅ និងកម្រិតជីវភាពរបស់ពួកគេតាមភាពជាក់ស្តែងដល់កម្រិតមុនការផ្លាស់ទីលំនៅឬដល់កម្រិតមុនការចាប់ផ្តើមអនុវត្តគម្រោងទោះជាមួយណាខ្ពស់ជាងក៏ដោយ។ 	<p>ការទទួលយកដីដីនិងការតាំងទីលំនៅថ្មីដោយស្ម័គ្រចិត្តឆ្នាំ២០១៨ ឆ្លុះបញ្ចាំងពីច្បាប់និងបទប្បញ្ញត្តិរបស់RGCទាក់ទងនឹងការទទួលបានដីនិងការតាំងទីលំនៅថ្មីដោយអចេតនារបស់APនិងគោលនយោបាយការពារស្តង់ដារនិងនីតិវិធីរបស់ដៃគូអភិវឌ្ឍន៍(DPs)ដែលត្រូវបានអនុវត្តចំពោះគម្រោងវិនិយោគហេដ្ឋារចនាសម្ព័ន្ធសាធារណៈ។</p> <p>SOP រួមបញ្ចូលទាំងឯកសារយោងទៅការអនុវត្តជាអន្តរជាតិក្នុងការរៀបចំផែនការតាំងទីលំនៅថ្មីការអនុវត្តការត្រួតពិនិត្យនិងការធ្វើរបាយការណ៍។ SOP ត្រូវបានប្រកាសឱ្យប្រើក្រោមអនុក្រឹត្យលេខ២២អនក្រ.បក ចុះថ្ងៃទី២២ខែកុម្ភៈឆ្នាំ២០១៨និងអនុវត្តចំពោះគម្រោងហិរញ្ញប្បទានពីខាងក្រៅទាំងអស់នៅក្នុងព្រះរាជាណាចក្រកម្ពុជា។ GDR នៃក្រសួង សេដ្ឋកិច្ចនិងហិរញ្ញវត្ថុ (MEF) ទទួលខុសត្រូវក្នុងការផ្តល់ការណែនាំនិងការបំភ្លឺដល់អ្នកប្រើប្រាស់SOP ។</p> <p>គណៈកម្មាធិការតាំងទីលំនៅអន្តរក្រសួង និងអគ្គនាយកដ្ឋានតាំងទីលំនៅនៃក្រសួងសេដ្ឋកិច្ចនិងហិរញ្ញវត្ថុ។ នៅឆ្នាំ១៩៩៧ គណៈកម្មាធិការតាំងទីលំនៅអន្តរក្រសួង(IRC)ត្រូវបានបង្កើតឡើងជាមួយនឹងសិទ្ធិអំណាចដើម្បីពិនិត្យ និងវាយតម្លៃហេតុប៉ះពាល់លើការ តាំងទីលំនៅថ្មីនិងការទទួលបានដីសម្រាប់គម្រោងអភិវឌ្ឍន៍ ហេដ្ឋារចនាសម្ព័ន្ធរូបវន្តសាធារណៈក្នុងប្រទេសកម្ពុជា។វាជាអង្គភាពសមូហភាពដែលអនុវត្តសិទ្ធិអំណាចរបស់គណៈកម្មាធិការអស្សាមិករណ៍ក្រោមច្បាប់ស្តីពីអស្សាមិករណ៍ឆ្នាំ២០១០។IRCរួមមានក្រសួងរៀបចំផែនដីនគរូបនីយ</p>	<p>ការវិភាគគម្លាតជាក់លាក់វិធានការ និងការបញ្ជាក់សម្រាប់ ESS5 គឺរួមបញ្ចូលក្របខណ្ឌគោលនយោបាយតាំងទីលំនៅដ្ឋានថ្មី។</p>	<p>GDR ជាមួយ MPWT និង MOI</p>

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
	<ul style="list-style-type: none"> កែលម្អជីវភាពរស់នៅរបស់ជនក្រីក្រ ឬជនងាយរងគ្រោះដែលត្រូវបានផ្លាស់ទីលំនៅតាមរូបវន្ត តាមរយៈការផ្តល់លំនៅដ្ឋាន គ្រប់គ្រាន់ លទ្ធភាពទទួលបានសេវា និងសម្ភារៈបរិក្ខារ និងសុវត្ថិភាពនៃការ កាន់កាប់។ ដើម្បីបង្កើត និងអនុវត្តសកម្មភាពតាំងទីលំនៅថ្មីជាកម្មវិធីអភិវឌ្ឍន៍ប្រកបដោយចីរភាព ការផ្តល់ធនធានវិនិយោគគ្រប់គ្រាន់ដើម្បីឱ្យជនភៀសខ្លួនទទួលបានអត្ថប្រយោជន៍ដោយផ្ទាល់ពីគម្រោង ដោយសារលក្ខណៈនៃគម្រោងអាចធានាបាន។ ដើម្បីធានាថាសកម្មភាពតាំងលំនៅថ្មីត្រូវបានគ្រោងទុក និងអនុវត្តជាមួយនឹងការបង្ហាញ ព័ត៌មានដែលសមស្រប ការពិគ្រោះយោបល់ និងការចូលរួមដែលមានព័ត៌មានពីអ្នករងហេតុប៉ះពាល់។ គ្មានការផ្លាស់ទីលំនៅ (ឬ ការងារសំណង់ដែលនាំទៅដល់ការផ្លាស់ទីលំនៅ) អាចចាប់រហូតដល់ការទទួលសំណង់ពេញលេញពី PAPs ។ 	<p>កម្មនិងសំណង់(MLMUPC)ក្រសួងសេដ្ឋកិច្ចនិងហិរញ្ញវត្ថុ(MEF)និងក្រសួងកសិកម្មរុក្ខាប្រមាញ់និងនេសាទ(MAFF)។ វាត្រូវបានដឹកនាំជាអចិន្ត្រៃយ៍ និងដឹកនាំដោយ MEF និងមានសមាជិកមកពីក្រសួង ផ្សេងៗ រួមមាន ក្រសួងរៀបចំដែនដីនគរូបនីយកម្ម និងសំណង់ (MLMUPC) និងក្រសួងកសិកម្ម រុក្ខាប្រមាញ់ និងនេសាទ (MAFF)។ IRCអនុវត្តតួនាទី និងការទទួលខុសត្រូវរបស់ខ្លួនតាមរយៈIRC-WG ដែលត្រូវបានបង្កើតឡើងសម្រាប់គម្រោងវិនិយោគសាធារណៈនីមួយៗដោយ MEF។ អំណាចរបស់ IRC ត្រូវបានផ្ទេរទៅឱ្យប្រធាន អចិន្ត្រៃយ៍របស់ខ្លួន។ អគ្គនាយកដ្ឋានតាំងទីលំនៅថ្មី (GDR) មានតួនាទីជាលេខាធិការដ្ឋាននៃ IRCនិងជាអ្នកនាំមុខសម្រាប់ការទទួលបានដីនិងការតាំងទីលំនៅថ្មីសម្រាប់គម្រោងវិនិយោគសាធារណៈ។ អនុក្រឹត្យលេខ១១៥ ដែលបានចូល ជាធរមានក្នុងឆ្នាំ ២០១៦ បានផ្សព្វផ្សាយនាយកដ្ឋានតាំងទីលំនៅថ្មីរបស់ MEFទៅជាGDRនិងកំណត់មុខងារនិងការទទួលខុសត្រូវ របស់ខ្លួនចំពោះ IRC និងក្នុងការទិញ និងការតាំងទីលំនៅថ្មី។</p>		

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
	<p>ESS5៖ហានិភ័យនិងផលប៉ះពាល់ដែលទាក់ទងនឹងការផ្លាស់ទីលំនៅជាអចិន្ត្រៃយ៍ឬជាបណ្តោះអាសន្ននិងផ្នែកសេដ្ឋកិច្ចនៃអ្នកទទួលរងផលប៉ះពាល់ពីគម្រោងតាមរយៈការរៀបចំការកាន់កាប់ផ្សេងៗ នឹងត្រូវបានស្ថាន និងវាយតម្លៃ។ វាត្រូវបានលើក ឡើងជាពិសេសដែលរួមបញ្ចូលមនុស្សមិនមាន ទម្រង់នៃការកាន់កាប់ ។</p> <p>ESS5 បានគាំទ្រការជៀសវាង ការតាំងទីលំនៅថ្មីដោយអចេតនា ហើយក្នុងករណីដែលមិនអាចជៀសវាងបានវិធានការដើម្បីកាត់បន្ថយនិងដោះស្រាយហេតុប៉ះពាល់ជាអវិជ្ជមានចំពោះជនភៀសខ្លួនត្រូវបានបង្កើតឡើង។</p>			
ដីរុក្ខជាតិ និង អេកូឡូស៊ី	<p>ESS1៖ ការវាយតម្លៃសង្គមបរិស្ថានត្រូវតែ រួមបញ្ចូលហានិភ័យនិងហេតុប៉ះពាល់ដែលពាក់ព័ន្ធរួមទាំងការគំរាមកំហែងដល់ជម្រកធម្មជាតិនិងដីរុក្ខជាតិ សេវាប្រព័ន្ធអេកូឡូស៊ី ផលផលនិងព្រៃឈើ។</p> <p>(ESS-1 ទំព័រ ២៨)</p>	<p>ច្បាប់ស្តីពីតំបន់ការពារធម្មជាតិ(២០០៨) កំណត់ប្រភេទតំបន់ការពារធម្មជាតិចំនួនប្រាំបី(៨)ប្រភេទ៖ឧទ្យានធម្មជាតិជម្រកសត្វព្រៃទេសភាព ការពារតំបន់គ្រប់គ្រងការប្រើប្រាស់ចម្រុះតំបន់បម្រុងជីវមណ្ឌល តំបន់បេតិកភណ្ឌធម្មជាតិ ឧទ្យានសមុទ្រ និងតំបន់រ៉ាមសារ។</p>	<p>ក្នុងអំឡុងពេលសកម្មភាពសាងសង់នឹងមានហេតុប៉ះពាល់យ៉ាងសំខាន់ដែលអាចកើតមានលើជម្រកធម្មជាតិ និងដីរុក្ខជាតិ។ផលប៉ះពាល់លើ</p>	<p>MPWT អ្នកម៉ៅការអ្នកត្រួតពិនិត្យការសាងសង់</p>

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
	ESS6៖ ការវាយតម្លៃត្រូវតែរួមបញ្ចូលការកំណត់អត្តសញ្ញាណ ការប៉ាន់ស្មាន និងការវាយតម្លៃនៃការគំរាមកំហែងដោយផ្ទាល់ និងដោយប្រយោល និងផលប៉ះពាល់ដែលអាចកើតមានចំពោះជីវចម្រុះ និងធម្មជាតិ សំខាន់ៗ ការកែប្រែ និងជម្រក។ តាមការចាំបាច់ ផែនការគ្រប់គ្រងជីវចម្រុះអាចត្រូវ បានបង្កើតឡើង។	<p>ច្បាប់ស្តីពីការគ្រប់គ្រងធនធានទឹក(២០០៧) រួមបញ្ចូលបទប្បញ្ញត្តិស្តីពីការបង្កូរចេញ ការចាក់ចោល ឬការទម្លាក់សារធាតុបំពុលដែលអាច ប៉ះពាល់ដល់គុណភាពទឹក។ ការអនុញ្ញាតត្រឹមត្រូវពីក្រសួងធនធានទឹក និងឧតុនិយមត្រូវតែធានាឲ្យបានមុននិងសកម្មភាពណាមួយ ដែលសមស្របនឹងបញ្ហានេះ។</p> <p>ច្បាប់ស្តីពីព្រៃឈើ (២០០២) បង្កើតក្របខណ្ឌ និងវិធានការនិយតកម្មដើម្បីការពារ និងអភិរក្សព្រៃឈើ និងភាពសម្បូរបែបនៃជីវសាស្ត្ររបស់វា ហើយដាក់ការគ្រប់គ្រងព្រៃឈើក្រោមមុខងាររបស់ MAFF។ ច្បាប់ដូចគ្នានេះតម្រូវឱ្យអនុវត្តការវាយតម្លៃផលប៉ះពាល់បរិស្ថាន និងសង្គមសម្រាប់សកម្មភាពណាមួយដែលអាចមានផលប៉ះពាល់យ៉ាងខ្លាំងដល់ប្រព័ន្ធអេកូឡូស៊ីព្រៃឈើ។</p>	<p>ជីវៈចម្រុះនឹងត្រូវបានវិភាគយ៉ាងលម្អិតក្នុងអំឡុងពេលនៃការសិក្សាវាយតម្លៃផលប៉ះពាល់បរិស្ថាននិងសង្គមហើយវិធានការដោះស្រាយសម្រាប់ផលប៉ះពាល់នឹងត្រូវបង្កើតនៅក្នុង ESMPs សម្រាប់ អនុគម្រោង។</p> <p>គម្រោងនេះនឹងមិនផ្តល់ហិរញ្ញប្បទានដល់ការគ្រប់គ្រងសំណល់រឹងប្រព្រឹត្តកម្មនិងការចោលសំរាមដែលអាចផ្តល់លទ្ធភាពទៅដល់ទីជម្រកសំខាន់ៗដូចជាជម្រកសត្វព្រៃនិងតំបន់ការពារ។</p>	
ជនជាតិដើមភាគតិច	ESS7៖មានគោលបំណងជៀសវាងហេតុប៉ះពាល់ជាអវិជ្ជមាននិងផ្តល់អត្ថប្រយោជន៍សមស្របតាមវប្បធម៌។គម្រោងដែលបានស្នើឡើងត្រូវតែរួមបញ្ចូលការវាយតម្លៃអំពីធម្មជាតិ និងកម្រិតនៃសេដ្ឋកិច្ច សង្គម វប្បធម៌ និងបេតិកភណ្ឌវប្បធម៌ផ្ទាល់	រដ្ឋធម្មនុញ្ញនៃព្រះរាជាណាចក្រកម្ពុជា(១៩៩៣) ធានាថាប្រជាពលរដ្ឋខ្មែរទាំងអស់មានសិទ្ធិស្មើគ្នានៅលើច្បាប់ ហើយមានសិទ្ធិសេរីភាព និងកាតព្វកិច្ចដូចគ្នាដោយមិនប្រកាន់ពូជសាសន៍ ពណ៌សម្បុរ ភេទ ភាសាជំនឿ សាសនា និន្នាការនយោបាយ កំណើត ស្ថានភាពសង្គម។ ធនធាននិងមុខតំណែងណាមួយ (មាត្រា៣១)។ វាក៏ធានាដល់ប្រជាពលរដ្ឋខ្មែរ	ក្របខ័ណ្ឌផែនការជនជាតិដើមភាគតិច (IPPF) ត្រូវបាន រួមបញ្ចូលនៅក្នុង ESMF ដើម្បីធានាបាននូវការអនុលោមតាម	MPWT ជាមួយនឹង MOI និងការចូលរួមពីក្រុង

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
	<p>និងប្រយោលដែលរំពឹងទុកនិងផលប៉ះពាល់បរិស្ថាននៃគម្រោងចំពោះជនជាតិដើមភាគតិចរួមទាំងការទន្ទ្រានយកសក្តានុពលការផ្លាស់ប្តូរនិងការរិចរិលនៃដីនិងធនធានរបស់ពួកគេ។ការពិគ្រោះយោបល់ត្រូវតែធានាចំពោះគម្រោងដែលនឹងត្រូវប៉ះពាល់ដោយផ្ទាល់ឬដោយប្រយោលដល់ជនជាតិដើមភាគតិច និងសហគមន៍ប្រពៃណីក្នុងស្រុក។ (ESS7 ទំព័រ ៧, ១១-១៣)</p>	<p>និងនីតិបុគ្គលទាំងអស់ ម្នាក់ៗ ឬសហគមន៍ មានសិទ្ធិកាន់កាប់ដីធ្លី (មាត្រា ៤៤)។</p> <p>គោលនយោបាយថ្នាក់ជាតិស្តីពីការអភិវឌ្ឍន៍នៃជនជាតិដើមភាគតិច (២០០៩) បម្រើជាក្របខណ្ឌគ្រួសារគ្រប់គោលនយោបាយរបស់ រដ្ឋាភិបាលទាក់ទងនឹងជនជាតិដើមភាគតិច និងសហគមន៍ ជាពិសេស ផ្នែកវប្បធម៌ ការអប់រំ សុខភាព បរិស្ថាន ដីធ្លី កសិកម្ម ធនធានទឹក ហេដ្ឋារចនាសម្ព័ន្ធ យុត្តិធម៌ទេសចរណ៍ឧស្សាហកម្មនិងវិនិច្ឆ័យថាពល។ គោលនយោបាយលម្អិតអំពីយុទ្ធសាស្ត្រនៅទូទាំងវិស័យទាំងនេះ រួមមាន៖</p> <p>១.ការប្រើប្រាស់ភាសាក្នុងស្រុកក្នុងការអប់រំបឋមសិក្សាពហុភាសាប្រព័ន្ធផ្សព្វផ្សាយ និងការប្រឹក្សាសាធារណៈ “ជនជាតិដើមភាគតិច មានសិទ្ធិពេញលេញក្នុងការបញ្ចេញមតិនិងយោបល់របស់ពួកគេនិងធ្វើការសម្រេចចិត្តណាមួយលើការអភិវឌ្ឍន៍សេដ្ឋកិច្ចសង្គមនិងវប្បធម៌របស់ពួកគេឆ្ពោះទៅរកការរីកចម្រើននៅក្នុងសង្គម”</p> <p>២.អនុវត្តការវាយតម្លៃផលប៉ះពាល់សម្រាប់គម្រោងហេដ្ឋារចនាសម្ព័ន្ធទាំងអស់៖ “គម្រោងអភិវឌ្ឍន៍ក្នុងតំបន់រស់នៅរបស់ជនជាតិដើមភាគតិចអាចដំណើរការបានលុះត្រាតែមានការវាយតម្លៃផលប៉ះពាល់បរិស្ថាននិងសង្គម និងផ្សព្វផ្សាយដល់សហគមន៍ជនជាតិដើមភាគតិចដែលពាក់ព័ន្ធជាមុន ដើម្បីឱ្យប្រជាជនទាំងនោះអាចមានឱកាសផ្តល់ព័ត៌មានអំពីតម្រូវការ របស់ពួកគេ”</p>	<p>WB ESS ដែលអំពាវនាវឱ្យមានការពិគ្រោះយោបល់ដោយអត្ថន័យ/សមស្របតាមវប្បធម៌ជាមួយសហគមន៍ជនជាតិដើមភាគតិចប្រសិនបើចាំបាច់។ នៅពេល ដែលត្រូវការការពិចារណាលើ លក្ខណៈវិនិច្ឆ័យដែលបានបញ្ចូលទៅក្នុង ESSទាំងនេះនឹង រួមបញ្ចូលការប្រឹក្សាយោបល់ដោយផ្អែកលើការយល់ព្រមដែលបានជូនដំណឹងជាមុនដោយឥតគិតថ្លៃ។</p> <p>ពិនិត្យមើលអនុគម្រោងដែលបានស្នើសុំដោយអនុលោមតាមក្របខ័ណ្ឌគ្រប់គ្រងបរិស្ថាន និងសង្គម (ESMF) ហើយឆ្លុះបញ្ចាំងថាតើជនជាតិដើម</p>	

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
		<p>កំណត់ប៉ារ៉ាម៉ែត្រនៃការចុះបញ្ជីសហគមន៍ជនជាតិដើមភាគតិចជានីតិបុគ្គល ដើម្បីឱ្យពួកគេអាចកាន់កាប់ដី និងទ្រព្យសម្បត្តិសហគមន៍ជាផ្លូវការ ហើយអនុញ្ញាតឱ្យពួកគេចូលរួមក្នុងការអភិវឌ្ឍន៍សេដ្ឋកិច្ច។</p> <p>ច្បាប់ភូមិបាល (២០០១) គ្រប់គ្រងសិទ្ធិលើដីធ្លី និងទ្រព្យសម្បត្តិដូចដែលបានកំណត់ដោយរដ្ឋធម្មនុញ្ញឆ្នាំ ១៩៩៣ និងកំណត់ វិសាលភាពនៃភាពជាម្ចាស់នៃអចលនវត្ថុដូចជាដីដើមឈើនិងសំណង់ដែលគ្មានការរុះរើរួមទាំងសិទ្ធិរបស់សហគមន៍ជនជាតិដើមភាគតិចក្នុងកម្មសិទ្ធិសមូហភាព (មាត្រា២៣-២៦)។</p> <p>ច្បាប់កំណត់សហគមន៍ជនជាតិដើមភាគតិចថា “<i>ក្រុមមនុស្សដែល (១) បង្ហាញឯកភាពជាតិសាសន៍ សង្គម វប្បធម៌ និងសេដ្ឋកិច្ច (២) អនុវត្តរបៀបរស់នៅបែបប្រពៃណីនិង(៣)ដាំដុះនិងប្រមូលផលនៅក្នុងកម្មសិទ្ធិរបស់ពួកគេតាមទម្លាប់នៃការប្រើប្រាស់សមូហភាព</i>” (មាត្រា ២៣)</p> <p>ដីសហគមន៍ជនជាតិដើមភាគតិចត្រូវបានកំណត់នៅក្រោមច្បាប់ភូមិបាលឆ្នាំ២០០១ថាជា “<i>ដីដែលសហគមន៍ទាំងនោះបានសាងសង់លំនៅដ្ឋាន និងកន្លែងដែលពួកគេធ្វើកសិកម្មបែបប្រពៃណីរបស់ពួកគេ</i>” ហើយដីទាំងនេះ “<i>មិនត្រឹមតែរួមបញ្ចូលដីដាំដុះពិតប្រាកដប៉ុណ្ណោះទេ ប៉ុន្តែថែមទាំងរួមបញ្ចូលទុនបំរុងចាំបាច់សម្រាប់ការធ្វើស្រែចំការឆ្លាស់ផងដែរ ដែលត្រូវតាមវិធីសាស្ត្រកសិកម្មដែលពួកគេអនុវត្តបច្ចុប្បន្ន</i>”។</p> <p>ដីសហគមន៍ជនជាតិដើមភាគតិចទាំងនេះត្រូវបានផ្តល់ដល់សហគមន៍</p>	<p>ភាគតិចមានវត្តមានឬក៏បានប្រមូលផ្តុំគ្នាទៅកាន់តំបន់អនុគម្រោងដែលបានស្នើសុំវិទេ។</p> <p>ក្នុងករណីប្រសិនបើ ESS7 គឺពាក់ព័ន្ធនឹងអនុគម្រោងជាក់លាក់ រៀបចំ អនុម័ត និងអនុវត្ត IPPs ស្របតាមតម្រូវការរបស់ ESS7ក្នុងលក្ខណៈដែលអាចទទួលយកបានចំពោះសមាគម។</p>	

ឆ្នាំ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
		<p>ជនជាតិដើមភាគតិចជាកម្មសិទ្ធិសមូហភាពហើយត្រូវបានការពារដោយសិទ្ធិ និងកម្មសិទ្ធិដូចគ្នារបស់ម្ចាស់ឯកជន។ (មាត្រា ២៥-២៦)</p> <p>សារាចរលេខ២ស្តីពីវិធានការប្រឆាំងនឹងការកាន់កាប់ដីដោយខុសច្បាប់(២០០៧)កំណត់និយមន័យវិធានការនិងនីតិវិធីសម្រាប់ការទាមទារយកដីដូចឡើងវិញក្រោមការកាន់កាប់ខុសច្បាប់។ សារាចរបញ្ជាក់ថា អ្នកដែលត្រូវបានចាត់ទុកថាជាអ្នកកាន់កាប់ដីដោយខុសច្បាប់នឹងមិនមានសិទ្ធិទទួលបានសំណងណាមួយដូចដែលបានផ្តល់ដោយច្បាប់ភូមិបាលឆ្នាំ២០០១នោះទេ។ចំពោះដីដែលក្រុមជនជាតិដើមបានអះអាងកម្មសិទ្ធិសមូហភាព ការទាមទាររបស់រដ្ឋលើដីនោះត្រូវតែពន្យារពេលរហូត ដល់វាត្រូវបានចុះបញ្ជីស្របច្បាប់ជាកម្មសិទ្ធិរបស់រដ្ឋ។</p> <p>ច្បាប់ដើមនៅឆ្នាំ២០០៨ទទួលស្គាល់ភាពងាយរងគ្រោះរបស់ជនជាតិដើមភាគតិច។ក្រុមប្រឹក្សានៅថ្នាក់ខេត្តនិងស្រុក(ថ្នាក់រាជធានីក្រុងនិងខណ្ឌនៅតំបន់ទីក្រុង)ត្រូវបានស្នើសុំឱ្យបង្កើតផែនការអភិវឌ្ឍន៍ដែលកំណត់តម្រូវការរបស់ក្រុមងាយរងគ្រោះ រួមទាំងជនជាតិដើមភាគតិចផងដែរ។</p> <p>ច្បាប់ស្តីពីព្រៃឈើ(២០០២) ទទួលស្គាល់សិទ្ធិទំនៀមទម្លាប់របស់សហគមន៍ជនជាតិដើមភាគតិចដែលបានចុះបញ្ជីជាផ្លូវការចំពោះផលិតផលព្រៃឈើ និងអនុផល។</p>		

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
បេតិកភណ្ឌវប្បធម៌	ESS1៖ ការវាយតម្លៃសង្គមបរិស្ថានត្រូវតែ រួមបញ្ចូលហានិភ័យនិងផលប៉ះពាល់ដែលពាក់ព័ន្ធរួមទាំងហានិភ័យដែលនឹងបង្កឱ្យមានហានិភ័យធ្ងន់ធ្ងរដល់បេតិកភណ្ឌវប្បធម៌។ (ESS-1 ទំព័រ ២៨)	<p>ព្រះរាជក្រឹត្យស្តីពីការបង្កើតតំបន់វប្បធម៌ការពារនៅតំបន់សៀមរាបអង្គរ និងគោលការណ៍ណែនាំសម្រាប់ការគ្រប់គ្រង(១៩៩៣)បានបង្កើតតំបន់វប្បធម៌ចំនួនប្រាំ (៥) និងរចនាសម្ព័ន្ធផ្សេងៗនៅក្នុងនោះ៖</p> <ol style="list-style-type: none"> 1. តំបន់ស្នូល៖ ទីតាំងវិមាន 2. តំបន់ការពារ៖ តំបន់ការពារបុរាណវត្ថុវិទ្យា 3. ទេសភាពវប្បធម៌ការពារ 4. ទីតាំងនៃបុរាណវត្ថុវិទ្យា នរវិទ្យា ឬចំណាប់អារម្មណ៍ប្រវត្តិសាស្ត្រ ឬទីតាំងដែលនៅក្រៅតំបន់ស្នូល និងតំបន់ការពារ 5. តំបន់អភិវឌ្ឍន៍សេដ្ឋកិច្ចសង្គម និងវប្បធម៌ <p>ព្រះរាជក្រឹត្យស្តីពីការបង្កើតអាជ្ញាធរជាតិអប្សរា(១៩៩៥) បម្រើជាមូលដ្ឋានច្បាប់ក្នុងការបង្កើតអាជ្ញាធរការពារមណីយដ្ឋាន និងគ្រប់គ្រងតំបន់អង្គរ (អប្សរា) ដែលមានយុត្តាធិការក្នុងការការពារ និងអភិរក្សបេតិកភណ្ឌអង្គរ។</p>	នីតិវិធីស្វែងរកឱកាសត្រូវបានរួមបញ្ចូលនៅក្នុងESMFហើយនឹងត្រូវបានបញ្ចូលក្នុងESMPs សម្រាប់អនុគម្រោង	MPWT, MOE, MOI អ្នកម៉ៅការនិង APSARA សម្រាប់ខេត្តសៀមរាប
	ESS8កំណត់ថាហានិភ័យនិងហេតុប៉ះពាល់ចំពោះបេតិកភណ្ឌវប្បធម៌រូបីនិងអរូបីត្រូវឱ្យកំណត់អត្តសញ្ញាណ និងវាយតម្លៃ រួមទាំងការផ្លាស់ប្តូរ សក្តានុពលនៅក្នុងបរិយាកាសរូបវន្តចលនារបស់ផែនដីដែលនៅជិតតំបន់ការពារ និងតំបន់ការពារ រៀងៗខ្លួននិងនៅជិតតំបន់បេតិកភណ្ឌវប្បធម៌ដែលត្រូវបានទទួលស្គាល់។ការជៀសវាងហេតុប៉ះពាល់	<p>ច្បាប់ស្តីពីការការពារបេតិកភណ្ឌវប្បធម៌(១៩៩៦) ការពារបេតិកភណ្ឌវប្បធម៌ធម្មជាតិនិងទ្រព្យសម្បត្តិទាំងចលនវត្ថុឬអចលនវត្ថុកម្មសិទ្ធិសាធារណៈឬឯកជន។ប្រឆាំងនឹងការបំផ្លិចបំផ្លាញការផ្លាស់ប្តូរការកែប្រែការដឹកកាយការផ្តាច់ខ្លួនការនាំចេញឬនាំចូលដោយខុសច្បាប់។ វាត្រូវបានកំណត់ដូចខាងក្រោម៖</p> <ul style="list-style-type: none"> • <u>និយមន័យនៃសម្បត្តិវប្បធម៌៖</u> សម្បត្តិវប្បធម៌ត្រូវបានកំណត់ (ជំពូកទី១ មាត្រា៤) 		

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
	អវិជ្ជមានដល់បេតិកភណ្ឌវប្បធម៌ គួរតែត្រូវបានរក្សាតាមអាចធ្វើទៅបាន។	<ul style="list-style-type: none"> ការផ្លាស់ប្តូរការរកឃើញ៖ ក្នុងករណីមានការរកឃើញនូវសម្បត្តិវប្បធម៌ណាមួយក្នុងអំឡុងពេលសាងសង់ត្រូវតែប្រគល់ជូននគរបាលមូលដ្ឋានភ្លាមៗទៅកាន់អភិបាលខេត្ត បន្ទាប់មកទៅអាជ្ញាធរបេតិកភណ្ឌវប្បធម៌ (ឧ.APSARA) ដោយមិនបង្អង់យូរ។ ក្នុងរយៈពេល៣០ថ្ងៃដែល វត្ថុនោះត្រូវបានផ្ទៀងផ្ទាត់ថាជាសម្បត្តិវប្បធម៌ដោយអាជ្ញាធរ ការផ្អាកបណ្តោះអាសន្ន នៃការងារសំណង់ និងការប្រកាសអំពី វិធានការការពារនឹងត្រូវធ្វើឡើង (ផ្នែកទី ៧ មាត្រា ៣៧-៣៩)។ <p>លេខ ៧០ SSR សេចក្តីសម្រេចរបស់រដ្ឋាភិបាល (២០០៤) បានកំណត់ការប្រើប្រាស់ដីនៅក្នុងឧទ្យានអង្គរ ដែលតំបន់ទី ១ និងទី ២ របស់វាត្រូវបានចាត់ទុកជាសម្បត្តិវប្បធម៌។</p>		
ការចូលរួមរបស់ភាគីពាក់ព័ន្ធ	ESS1៖ជាផ្នែកមួយនៃការបង្ហាញព័ត៌មានការរកឃើញនៃការវាយតម្លៃE&Sនៃគម្រោងហានិភ័យខ្ពស់និងហានិភ័យសំខាន់ៗនឹងត្រូវផ្តល់ជូនមុនពេលវាយតម្លៃ។	សៀវភៅមគ្គុទ្ទេសក៍ស្តីពីការវាយតម្លៃផលប៉ះពាល់បរិស្ថានក្នុងព្រះរាជាណាចក្រកម្ពុជា(ឆ្នាំ២០១២)កំណត់ការចូលរួមរបស់សាធារណៈជន និងបង្ហាញពីដំណាក់កាលនៅក្នុងវដ្តនៃគម្រោងដែលការចូលរួមរបស់ភាគីពាក់ព័ន្ធមានសារៈសំខាន់ដូចជា៖វិសាលភាពគម្រោងការវាស់វែងដើម្បីដោះស្រាយ ការត្រួតពិនិត្យរបាយការណ៍ និងការត្រួតពិនិត្យគម្រោង។ សៀវភៅណែនាំសរសេរថាការកំណត់អត្តសញ្ញាណវិធានការកាត់បន្ថយផលប៉ះពាល់បរិស្ថានក៏គួរតែផ្អែកលើលទ្ធផលនៃការពិគ្រោះយោបល់ជាសាធារណៈផងដែរ។	ផែនការចូលរួមរបស់ភាគីពាក់ព័ន្ធ (SEP) ដែលអនុលោមតាមបទប្បញ្ញត្តិនៃWB ESS10 ត្រូវបានរៀបចំដើម្បី ធានាឱ្យមានការចូលរួមពីភាគីពាក់ព័ន្ធប្រកបដោយនិរន្តរភាពនិងការប្រព្រឹត្តិអោយបានត្រឹមត្រូវនៃ	MPWT, MOI និង MOE

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
	<p>ESS10៖ការចូលរួមប្រកបដោយអត្ថន័យនិងការពិគ្រោះយោបល់របស់អ្នកពាក់ព័ន្ធត្រូវតែធ្វើឡើងនៅគ្រប់ដំណាក់កាលទាំងអស់នៃវដ្តគម្រោងដូច្នេះវាធានាថាព័ត៌មានដែលពាក់ព័ន្ធនឹងអាចយល់បានទាន់ពេលវេលាត្រូវបានផ្តល់ជូនដល់ភាគីដែលរងផលប៉ះពាល់គម្រោងដែលបានកំណត់អត្តសញ្ញាណ ទាំងអស់។</p> <p>វិធានការជាក់លាក់សម្រាប់ PPAPs ដែលត្រូវកំណត់អត្តសញ្ញាណត្រូវតែកំណត់និងដាក់ចេញនៅក្នុងផែនការការចូលរួមរបស់ភាគីពាក់ព័ន្ធ។</p>	<p>ប្រកាសស្តីពីការចូលរួមជាសាធារណៈក្នុងការវាយតម្លៃផលប៉ះពាល់បរិស្ថាន(២០១៧)បង្កើតគោលការណ៍សំខាន់ៗដើម្បីធានាឱ្យមានការចូលរួមជាសាធារណៈនៅក្នុងដំណើរការEIA៖គោលការណ៍នៃសិទ្ធិទទួលបានព័ត៌មានគោលការណ៍នៃការចូលរួមជាសាធារណៈគោលការណ៍នៃការទទួលបានយុត្តិធម៌សង្គម និងដំណោះស្រាយប្រកបដោយប្រសិទ្ធភាព និងគោលការណ៍សមភាពយេនឌ័រក្នុងការចូលរួមជាសាធារណៈនិងគោលការណ៍លើកកម្ពស់ជនជាតិដើមភាគតិចក្នុងការចូលរួមជាសាធារណៈ។</p>	<p>ការបញ្ចេញព័ត៌មាននិងការពិគ្រោះយោបល់។</p> <p>ផែនការការចូលរួមរបស់ភាគីពាក់ព័ន្ធនឹងត្រូវបានធ្វើបច្ចុប្បន្នភាពអនុម័តនិងអនុវត្តពេញមួយការអនុវត្ត។</p> <p>រៀបចំ បង្ហាញ និងអនុវត្ត SEPs សម្រាប់សកម្មភាព អនុគម្រោងស្របតាមESMF និង ESS10។</p>	
ក្រុមងាយរងគ្រោះ	<p>ESS1៖ការវាយតម្លៃសង្គមបរិស្ថានត្រូវតែរួមបញ្ចូលហានិភ័យអវិជ្ជមាននិងផលប៉ះពាល់ដែលអាចប៉ះពាល់ដល់ក្រុមមួយចំនួន ជាពិសេសក្រុមដែល ជួបការលំបាកនិងងាយរងគ្រោះ។</p> <p>ជាចាំបាច់ការពិគ្រោះយោបល់ដាច់ដោយឡែកដើម្បីកំណត់ពីហានិភ័យផលប៉ះពាល់និងតម្រូវការជាក់លាក់នៃក្រុមទាំងនេះអាចត្រូវបានរៀបចំ (ESS-១ ទំព័រ២៨-២៩; ESS-1 សៀវភៅណែនាំ GN ២៨.៣-២៩.១)</p>	<p>ច្បាប់ស្តីពីការការពារ និងលើកកម្ពស់សិទ្ធិជនពិការ ដែលចែងថា “ជនពិការ” សំដៅលើជនណាដែលខ្វះខាត បាត់បង់ឬខូចមុខងារ ផ្លូវកាយ ឬផ្លូវចិត្ត ដែលនាំឱ្យមានការរំខានដល់ជីវិតប្រចាំថ្ងៃ ឬ សកម្មភាពដូចជា រាងកាយ ការមើលឃើញ ការស្តាប់ ការចុះខ្សោយបញ្ញា ជំងឺផ្លូវចិត្ត និងប្រភេទនៃពិការភាពផ្សេងទៀត ឆ្ពោះទៅរកការបញ្ចប់នៃមាត្រដ្ឋានដែលមិនអាចគ្រប់គ្រងបាន។</p>	<p>ផ្តោតលើក្រុមដែលងាយរងគ្រោះនៅក្នុងដំណើរការ ESIA មិនត្រូវបានផ្តល់ជូនយ៉ាងខ្លាំងក្លានៅក្នុងគោលនយោបាយ RGC ដូចនៅក្នុង WB ESS នោះទេ។</p> <p>សម្រាប់អនុគម្រោងដែលពាក់ព័ន្ធនឹងក្រុមងាយរងគ្រោះដែលអាចរងផលប៉ះពាល់តាម</p>	MOE, MOI, MPWT

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
			<p>រយៈការតាំងទីលំនៅថ្មីដោយអចេតនាឬការផ្លាស់ទីលំនៅសេដ្ឋកិច្ច ផែនការតាំងទីលំនៅថ្មីនឹងត្រូវបានរៀបចំអនុម័តនិងអនុវត្តដោយមានការពិគ្រោះយោបល់ដ៏ត្រឹមត្រូវ ជាមួយអ្នកដែលរង ហេតុប៉ះពាល់ដោយអនុលោមតាមESS5និងស្របតាមតម្រូវការនៃក្របខ័ណ្ឌស្តារជីវភាពរស់នៅ(LRF)និងយល់ព្រមជាមួយអគ្គនាយកដ្ឋានតាំងទីលំនៅថ្មី(GDR)ក្រោមក្រសួងសេដ្ឋកិច្ចនិងហិរញ្ញវត្ថុ(MEF)។នេះនឹងរួមបញ្ចូលទាំងការផ្លាស់ទីលំនៅរូបវន្តនិងការផ្លាស់ទីលំនៅសេដ្ឋកិច្ច និងរួមបញ្ចូលកម្មវិធី ស្តារ និងកែលម្អជីវភាពរស់នៅ សម្រាប់ជនរងផលប៉ះពាល់។ការយកចិត្តទុកដាក់ជាក់លាក់នឹងត្រូវ</p>	

ធាតុ	គោលនយោបាយរបស់ធនាគារពិភពលោក (WB)ដែលអាចអនុវត្ត	គោលនយោបាយរបស់រាជរដ្ឋាភិបាលកម្ពុជា(RGC) ដែលពាក់ព័ន្ធ	គម្លាតគោលនយោបាយដែលបានកំណត់ និងសកម្មភាពដែលបានស្នើ	អ្នកចូលរួមទទួលខុសត្រូវ
			បង់ទៅចំពោះស្រ្តី និងកុមារ អ្នករើសសំរាមដើម្បី បង្កើតវិធានការសមស្របស្របតាម ESFដោយផ្អែកលើការសិក្សា មូលដ្ឋានសង្គមសម្រាប់អនុគម្រោងនីមួយៗដែលអាច អនុវត្តបាន។	

ទិដ្ឋភាពទូទៅ នៃការគ្រប់គ្រងសំណល់រឹងនៅកម្ពុជា និងទីក្រុងគោលដៅ

ការប៉ាន់ស្មានដោយផ្អែកលើការប៉ាន់ស្មាននៅឆ្នាំ២០១៣ ដល់ ឆ្នាំ២០២០បានបង្ហាញថាការបង្កើតសំរាមនៅ កម្ពុជាមានរហូតចំនួន៤ទៅ៧លានតោនក្នុងមួយឆ្នាំ។ ការប្រមូលសំរាមភាគច្រើនមានដែនកំណត់ត្រឹមតែ តំបន់ ទីក្រុងនិងតំបន់ជុំវិញទីក្រុង ដោយការអភិវឌ្ឍន៍នៅជនបទមានទំហំធំ និងការផ្លាស់ប្តូរការប្រើប្រាស់ដី និង កាត់បន្ថយ ផលិតផលកសិកម្ម។ សំរាមដែលបានប្រមូល និងដឹកជញ្ជូនទៅកន្លែងចាក់សំរាមនៅទីប្រជុំជន មានប្រមាណ ៣១៧.៥៥០តោន នៅឆ្នាំ២០០៤ ហើយកើនឡើងដល់៦៣.០៦៧៩តោន នៅឆ្នាំ២០១១ និង កើនឡើង ដល់១,៣លានតោននៅឆ្នាំ២០១៦។ ការកើនឡើងនៃសំណល់រឹងទីក្រុង ត្រូវបានចាក់ទៅទីលាន ចាក់សំរាមដល់ ទៅ១០៦កន្លែងនៅទូទាំងប្រទេសគឺបណ្តាលមកពីកំណើនសេដ្ឋកិច្ច ការកើនឡើងនៃនគរូប នីយកម្ម និងទេសចរណ៍។ នៅតំបន់ទីក្រុងការប្រមូលសំរាមត្រូវបានធ្វើឡើង ដោយក្រុមហ៊ុនឯកជនក្រោម ការគ្រប់គ្រង របស់អាជ្ញាធរមូលដ្ឋាន និងភ្នាក់ងារបច្ចេកទេសនានា។ ក្រុមហ៊ុនឯកជនជាច្រើនប្រមូលសំរាម និងចាក់ចោល នៅទីលានចាក់សំរាម។ ការត្រួតពិនិត្យ និងបទប្បញ្ញត្តិ របស់ក្រុមហ៊ុនសំរាមឯកជន និងរដ្ឋាភិ បាលមូលដ្ឋាននានា ដែលទទួលខុសត្រូវលើការគ្រប់គ្រងសំរាម ក្រោមអនុក្រឹត្យ១១៣ នៅមានកម្រិត ដោយ ខ្វះសមត្ថភាព និងហិរញ្ញវត្ថុ សម្រាប់ធ្វើការទទួលខុសត្រូវ។

ខេត្តសៀមរាប

នៅក្នុងខេត្តសៀមរាប ការប្រមូលសំរាម និងការចាក់ចោលសំរាមត្រូវបានចុះកិច្ចសន្យាទៅអោយ ក្រុមហ៊ុន GAEA។ ពួកគេប្រមូលបានប្រមាណ២០០តោន/ថ្ងៃ ក្នុងចំណោមបរិមាណសំរាមដែលបញ្ចេញ ៣៩៤តោន/ ថ្ងៃ។ ក្រុមហ៊ុនប្រមូលសំរាម CINTRI បានចាប់ផ្តើមប្រមូលសំរាមពីផ្សារដំដែកនៅពាក់កណ្តាលឆ្នាំ២០១៩។ បរិមាណសំរាមជាច្រើនដែលប៉ាន់ស្មានទៅមានប្រហែល៣៤%បានលេចចេញទៅក្នុងបរិស្ថាន (មានន័យថា ទីលានចំហ ឬទៅក្នុងប្រឡាយទឹក)។ គេប៉ាន់ស្មានថាមានតែ៥០%នៃប្រជាជននៅក្នុងសៀមរាបទទួលបាន សេវាកម្មប្រមូលសំរាម ហើយការប្រមូលភាគច្រើនគឺអាចមាន និងអនុវត្តតែក្នុងតំបន់កណ្តាលក្រុង និងតំបន់ ពាណិជ្ជកម្មដែលតំបន់ទាំងនោះមានការបង់ថ្លៃសេវាកម្មបានគ្រប់ចំនួន។

កន្លែងចាក់សំរាម ដែលមានស្រាប់នៅភូមិអន្លង់ពីរស្ថិតក្នុងស្ថានភាពមិនល្អ។ វាមានទីតាំងស្ថិតនៅក្នុងអតីត រ ណ្តៅដី ហើយត្រូវបានសាងសង់ និងប្រតិបត្តិការជាកន្លែងចាក់សំរាមបើកចំហដោយគ្មានវិធានការណាមួយ ដើម្បីទប់ស្កាត់ការបំពុលបរិស្ថានឡើយ។ ហើយក៏មិនមានបច្ចេកទេសវិស្វកម្ម គ្មានវិធានការឬត្រួតពិនិត្យ សម្រាប់បរិស្ថាន និងគ្មានការប្រមូលខ្សែស្ម័គ្រនៅកន្លែងនោះទេ។ មិនមានការចង ឬប្រព័ន្ធប្រមូលសំរាម ដែល មានប្រព័ន្ធបន្សុទ្ធាតុពុលចេញនោះទេ ដូច្នេះបច្ចុប្បន្ននេះ ការលេចចេញទឹកស្អុយពីរណ្តៅទៅប្រភពទឹក និង រណ្តៅដីដែលជិតនោះមានលក្ខណៈសម្បើមណាស់។ ទីតាំងនេះនឹងត្រូវការការស្តារឡើងវិញទាំងស្រុង ដើម្បី ទប់ស្កាត់ហេតុប៉ះពាល់បរិស្ថានសង្គម និងសុខភាពសាធារណៈ។

ខេត្តកំពង់ស្ពឺ

ខេត្តកំពង់ស្ពឺមាន៧ស្រុក និងក្រុងមួយ ដែលមានប្រជាជនសរុបចំនួន ៨៧២.២១៩នាក់ គិតត្រឹមឆ្នាំ ២០១៩។ ការប៉ាន់ស្មានពីបរិមាណសំរាមប្រចាំថ្ងៃសរុបនៅខេត្តនេះមានចំនួន២០៥តោនក្នុងមួយថ្ងៃ។ ការ ប្រមូលសំរាម ត្រូវបានផ្តល់ដោយរដ្ឋាភិបាលមូលដ្ឋានទៅឲ្យក្រុមហ៊ុនប្រមូលសំរាមក្នុងវិស័យឯកជន។ ក្រុម

ហ៊ុនវ៉ែងសេងហ្គ្រីន លីមីតធីត ត្រូវបានរាយការណ៍ថាប្រមូលបាន៣១តោនក្នុងមួយថ្ងៃ សម្រាប់ក្រុងច្បារមន និង៨តោនក្នុងមួយថ្ងៃ សម្រាប់ទីក្រុងសំរោងទង។

កន្លែងចាក់សំរាមសំខាន់ៗ ដែលមានស្រាប់ គឺស្ថិតនៅភូមិសាមគ្គីឃុំអង្គស្នួលស្រុកអង្គស្នួលក្រុងច្បារមន ក្នុងខេត្តកំពង់ស្ពឺ ហើយអាចធ្វើដំណើរតាមផ្លូវលំ ចម្ងាយប្រហែល៣០០ម ភាគខាងត្បូងផ្លូវលេខ៤៤(DBST)។ វាមានទីតាំងស្ថិត នៅជិតទីក្រុងនៅក្នុងតំបន់អភិវឌ្ឍន៍នៅដ្ឋាន និងឧស្សាហកម្ម ដែលមានតម្លៃខ្ពស់។ មិនមានហេដ្ឋារចនាសម្ព័ន្ធ វិស្វកម្មណាមួយត្រូវបានអនុវត្តឡើយ។ ទឹកសម្បូរដែលចេញ ពីសំរាម គឺមិនត្រូវបានប្រមូលឡើយ និងបង្កើតនូវ គ្រោះថ្នាក់បរិស្ថានធ្ងន់ធ្ងរដោយសារតែការបំពុលទឹកលើដី និងទឹកក្រោមដី។ មេតានកាយចេញមកក៏មិនត្រូវ បានប្រមូលដែរ ហើយបរិស្ថានជុំវិញនោះកំពុងត្រូវបានរាយប៉ាយ ដោយសារតែខ្យល់បក ជាពិសេសផ្លាស្ទិក។ មិនមានរបង ឬការគ្រប់គ្រង ការចេញនានា បានអនុញ្ញាតឲ្យអ្នកប្រមូលមិនផ្លូវការចូលបោះទីតាំងផ្សេងៗ។ បច្ចុប្បន្នសំរាមក៏ត្រូវបានចាក់ចោលនៅក្នុងគំនររឹកចំហដោយមានការឆេះយ៉ាងធ្ងន់ធ្ងរ។ សំរាមដែលមានស្រាប់ ត្រូវបានដុតយ៉ាងទូលំទូលាយ។ អគ្គិភ័យត្រូវបានចាប់ផ្តើមឡើងដោយអ្នករើសសំរាមក្នុងគោលបំណងទាញយក លោហៈនានា។ ជាលទ្ធផលមានធាតុសរីរាង្គតិចតួច ដែលនៅសល់ និងសញ្ញាតិចតួចនៃទឹកលេចពីសំរាម។ ទីតាំងនេះត្រូវបានគេបិទដោយដីដុំ ខ្សាច់ ល្បាប់ធ្ងន់ ដែលមានជម្រាបទាប។ ទីតាំងនេះចាំបាច់ត្រូវបិទ និងស្តារឡើងវិញ ដើម្បីទប់ស្កាត់ការបំពុលបន្ថែមទៀត និងផលប៉ះពាល់បរិស្ថានសង្គម និងសុខភាព ហើយទីតាំង ដែលមានសក្តានុពលថ្មីចាំបាច់ត្រូវកំណត់ឡើង។

ខេត្តកណ្តាល

ខេត្តកណ្តាលគ្របដណ្តប់ទាំងស្រុងជុំវិញរាជធានីភ្នំពេញ។ មាន១០ស្រុក និងក្រុងមួយ(ក្រុងតាខ្មៅ(ដែលមាន ប្រជាជនសរុបចំនួន ១.១៩៥.៥៤៧នាក់ គិតត្រឹមឆ្នាំ២០១៩។ មានក្រុមហ៊ុនឯកជនចំនួនពីរបានផ្តល់សេវា ប្រមូលសំរាមនៅខេត្តកណ្តាលដោយផ្តោតសំខាន់លើក្រុងតាខ្មៅ។ ក្រុមហ៊ុន CINTRI ទទួលខុសត្រូវក្នុង ការប្រមូលសំរាមពីគេហដ្ឋានចំនួន៨.២៧០ (ក្នុងចំណោមផ្ទះ១៣.២៥៩ខ្នង (មានន័យថាប្រហែល ៦២,៤%) និង២.៦៨៩ ទីតាំងតំបន់ពាណិជ្ជកម្ម និងផ្សារចំនួន៥។ ក្រុមហ៊ុនសាវ័មត្រឡឹងប្រមូលសំរាមពីរោងចក្រ និងឧស្សាហកម្ម។ ក្រុមសហគមន៍ក៏ប្រមូលសំរាមពីទីផ្សារតូចៗផងដែរ ប៉ុន្តែចំនួនមិនត្រូវបានគេដឹងទេ។

ការប៉ាន់ស្មាននៃការបញ្ចេញសំរាមសរុបប្រចាំថ្ងៃនៅក្នុងខេត្តកណ្តាល ត្រូវបានរាយការណ៍ជាច្រើនផ្សេងៗគ្នា ដោយសារទិន្នន័យលើការប្រមូលសំរាមដែលមិនគួរឲ្យជឿទុកចិត្តបាន។ គេបានប៉ាន់ស្មានថាសំរាមដែលបានបង្កើតឡើងពីក្រុងតាខ្មៅគឺ៤០៨តោន/ថ្ងៃ ក្នុងឆ្នាំ២០១៨ និងកើនឡើងដល់៤៤១តោន/ថ្ងៃ ក្នុងឆ្នាំ២០២១។ CINTRI បានធ្វើរបាយការណ៍ថា បានប្រមូលបានច្រើនដល់ទៅ ២៧៣តោន/ថ្ងៃ។ មិនមានទិន្នន័យដែលអាចរក បានពីក្រុមហ៊ុន SAROM TRADINGទេ។ គេប៉ាន់ស្មានថាសំរាមសរុប២៧៩តោនក្នុងមួយថ្ងៃបាន ចាក់ចោល នៅទីលានសំរាមជារៀងរាល់ថ្ងៃទោះបីជាមិនមានកំណត់ត្រាជាក់លាក់នៃសំរាមដែលទទួលបាន ក៏ដោយ។

កន្លែងចាក់សំរាមដែលមានស្រាប់នៅខេត្តកណ្តាលមានចម្ងាយ៧គីឡូម៉ែត្រភាគខាងត្បូងនៃទីក្រុង និងស្ថិតនៅក្នុង តំបន់មួយនៃការពង្រីក និងការអភិវឌ្ឍន៍នៅដ្ឋានដែលមានតម្លៃខ្ពស់។ តំបន់នោះមានទំហំកំណត់ (២ហិកតា) គ្មានហេដ្ឋារចនាសម្ព័ន្ធបែបវិស្វកម្ម និងការគ្រប់គ្រងបរិស្ថានទេ។ មានឡដុតសំរាមមួយនៅលើទី

តាំងនេះ ប៉ុន្តែមិនដំណើរការតាមស្តង់ដារដែលមានការគ្រប់គ្រងនោះសម្រាប់សីតុណ្ហភាពឬការបញ្ចេញឧស្ម័នឡើយ។ ឡូជីស្ទិកមានសមត្ថភាពប៉ាន់ស្មានដុតបាន ៥តោនក្នុងមួយថ្ងៃ។ ទីតាំងនេះកំពុងឆាប់រហ័សអំឡុងពេលទស្សនកិច្ច ទាំងពីរលើក និងបង្ហាញពីសញ្ញា នៃការឆេះរាលដាលរយៈពេលវែង ដែលបណ្តាលឲ្យមានភាពតានតឹងជាមួយនឹង លំនៅដ្ឋាននៅជុំវិញនោះ។ ទីតាំងនេះចាំបាច់ត្រូវបិទ និងស្តារឡើងវិញ ដើម្បីទប់ស្កាត់ការបំពុល និងហេតុប៉ះពាល់ បរិស្ថានសង្គម និងសុខភាព។

ខេត្តបាត់ដំបង

សាលាខេត្តបាត់ដំបងបច្ចុប្បន្នផ្តល់សិទ្ធិប្រមូលសំរាម សម្រាប់ក្រុងបាត់ដំបងដល់ប្រតិបត្តិករឯកជនសំខាន់ចំនួនពីរគឺ CINTRI និង LEAP LIM។ ក្រុមហ៊ុនប្រមូលឯកជនទីបីត្រូវផ្តល់សម្រាប់ប្រមូលសំរាមនៅផ្សារ បាវេលមានឈ្មោះថា ៣៧។ ការប្រមូលជាផ្លូវការរួមមានCINTRIសម្រាប់៨សង្កាត់ LEAP LIM សម្រាប់ ២សង្កាត់ ពួកគេក៏បានប្រតិបត្តិការស្ថានីយ៍MRFហើយនិងការប្រមូលដោយខ្លួនឯង សម្រាប់ទីផ្សារបឹងឈូក។ LEAP LIM បច្ចុប្បន្ន មានកន្លែងចាក់សំរាម ស្ថិតនៅចម្ងាយ ៧,៥គ.មពីក្រុងបាត់ដំបង។ ទីលានចាក់សំរាមរបស់ CINTRI មានចម្ងាយ៦គ.មពីទីលានចាក់សំរាមក្រុង។

គម្រោងនេះមិនត្រូវបានព្យាករណ៍ទុកជាមុន ដើម្បីផ្តល់ហិរញ្ញបទានដល់ទីលានចាក់សំរាមថ្មី សម្រាប់បាត់ដំបងទេ ដោយសារតែវាត្រូវបានផ្តល់ហិរញ្ញប្បទានរួចទៅហើយដោយADB ប៉ុន្តែការគាំទ្រក្រោមសមាសភាពទី២ ដើម្បីពង្រីកតំបន់សេវាកម្ម និងកែលម្អការប្រមូល និងការគ្រប់គ្រងសំណល់រឹងក៏ដូចជាការបន្ថែមនូវកន្លែងព្យាបាល សំរាម និងស្ថានីយ៍ផ្ទេរ ដែលមានសក្តានុពលអាចត្រូវបានពិចារណាដោយស្ថិតក្រោមការបញ្ជាក់ពីលក្ខណៈ វិនិច្ឆ័យ។

ក្រុងព្រះសីហនុ

ក្រុមហ៊ុនប្រមូលសំរាមបច្ចុប្បន្នមានឈ្មោះ KSWM-Kampong Som Waste Management Co Ltd. ដែលចុះកិច្ចសន្យាដោយរដ្ឋបាលខេត្តព្រះសីហនុ ចាប់តាំងពីខែសីហាឆ្នាំ២០១៩បានគ្រប់គ្រងប្រតិបត្តិការ បន្តពីក្រុមហ៊ុន CINTRI ដែលធ្លាប់ប្រតិបត្តិការនៅក្នុងទីក្រុងនេះអស់រយៈពេល១០ឆ្នាំមកហើយ។ យោងតាមរបាយការណ៍របស់ KSWMនៅខែមីនាឆ្នាំ២០២០មានអតិថិជនចំនួន៦.៥០០នាក់ដោយសារ សមត្ថភាពរបស់ពួកគេនៅមានកម្រិតហើយបច្ចុប្បន្នក្រុមហ៊ុននេះកំពុងតែស្វែងរកការពង្រីកសេវាប្រមូលសំរាម។

KSWM ផ្តល់ជូនការប្រមូល និងដឹកជញ្ជូនសំរាមជុំវិញទីក្រុងព្រះសីហនុ។ សេវាប្រមូលសំរាមគ្របដណ្តប់ ៤សង្កាត់ និងគ្រប់ផ្លូវទាំងផ្លូវធំ និងផ្លូវតូច(ក្នុងបួនសង្កាត់ជុំវិញក្រុងព្រះសីហនុ។

ក្រុងព្រះសីហនុមានទីលានចាក់សំរាមមួយដែលទទួលបាន៨០,៣តោន/ថ្ងៃក្នុងឆ្នាំ២០១១ ហើយថ្មីៗនេះមានបរិមាណ២៨៤,៥តោន/ថ្ងៃ។ កាលពីខែកក្កដាឆ្នាំ២០២០ ក្រសួងសាធារណការ និងដឹកជញ្ជូន និងក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ បានប្រកាសថានឹងបន្ថែមថវិកា ចំនួន៥លានដុល្លារអាមេរិកនៃថវិកាសារពើពន្ធនៅឆ្នាំ២០២០ សម្រាប់សាងសង់ទីលានចាក់សំរាមថ្មីលើផ្ទៃដី ១៧ហិកតានៅក្រុងព្រះសីហនុ។ ទីលានចាក់សំរាមនេះមានទីតាំងស្ថិតនៅភូមិអូរតាសែកឃុំអូរខកញ៉ាហេង ស្រុកព្រៃនប់ ចម្ងាយប្រហែល៣គ.ម ពីផ្លូវជាតិលេខ៤។

គម្រោងនេះមិនត្រូវបានព្យាករណ៍ទុកជាមុន ដើម្បីផ្តល់ថវិកាដល់ទីលានចាក់សំរាមថ្មី សម្រាប់ក្រុងព្រះសីហនុទេ ដោយសារវាត្រូវបានផ្តល់ហិរញ្ញវត្ថុរួចទៅហើយដោយប្រភពផ្សេងទៀត ប៉ុន្តែការគាំទ្រនៅក្រោមសមាស

ភាពទី២ នៃគម្រោង ដើម្បីពង្រីកតំបន់សេវា និងបង្កើនការប្រមូលសំរាម និងការគ្រប់គ្រងសំរាមរឹង ព្រមទាំងការបន្ថែម កន្លែងបោះសំរាម និងស្ថានីយ៍ផ្ទេរអាចត្រូវបានពិចារណាដោយស្ថិតក្រោមការបញ្ជាក់ពីលក្ខណៈវិនិច្ឆ័យ។

ការវាយតម្លៃដំណើរការ និងជម្រើសសមស្របនៃតំបន់ទីតាំងទីលានចាក់សំរាម

ធាតុសំខាន់មួយ នៃការគ្រប់គ្រងហេតុប៉ះពាល់បរិស្ថាន និងសង្គម និងវិធានការកាត់បន្ថយហានិភ័យធំៗ វាស់ស្ទង់ការអនុវត្តតាមរយៈដំណើរការវាយតម្លៃទីតាំង។ នេះនៅតែជាដំណើរការ ដែលកំពុងបន្តហើយត្រូវបានរំពឹងថានឹងបន្តពេញមួយឆ្នាំដំបូងនៃការអនុវត្តគម្រោង។

សម្រាប់ការវាយតម្លៃទីតាំងលក្ខខណ្ឌត្រួតពិនិត្យចំនួនម្ភៃបួន (២៤) ត្រូវបានបង្កើត និងរួមបញ្ចូលទាំងផ្នែកបរិស្ថាន និងសង្គមសំខាន់ៗ។ លក្ខណៈវិនិច្ឆ័យត្រូវបានបែងចែកជាប្រាំប្រភេទ (៥)៖

- ១. ការដឹកជញ្ជូនរួមមាន ចំងាយពីតំបន់សេវាកម្ម និងស្ថានភាពផ្លូវ
- ២. ស្ថានភាពរូបវន្តនៃទីតាំង សម្រាប់ទីលានចាក់សំរាម និងការអភិវឌ្ឍទីតាំងបន្សាប ជាតិពុលពីសំណល់ (ភូមិសាស្ត្រ/ផលសាស្ត្រ/ភូគព្ភសាស្ត្រ)
- ៣. ការប្រើប្រាស់ដីបច្ចុប្បន្នភាពជាម្ចាស់ និងការកំណត់តំបន់អភិវឌ្ឍ
- ៤. ផលប៉ះពាល់សង្គមសុវត្ថិភាព និងការទទួលយក
- ៥. បេតិកភណ្ឌបរិស្ថាន និងវប្បធម៌

ដំណើរការត្រួតពិនិត្យជ្រើសរើសទីតាំងផ្នែកលើវិធីសាស្ត្រពីរដំណាក់កាល៖ (១) ការរៀបចំនៃដំណើរការបង្កើតម៉ូដែល និងដំណើរការផែនទីអវិជ្ជមាន និង (២) ទស្សនកិច្ចទីតាំងជាបន្តបន្ទាប់ ដើម្បីទទួលបានទិន្នន័យ ការពិតលើដី និងប្រមូលព័ត៌មានថ្មីពីការស្ទង់មតិ។ ការធ្វើគំរូម៉ូដែល ផែនទី និងការអង្កេតនានា ត្រូវបានណែនាំ ដោយគោលការណ៍ណែនាំរបស់រដ្ឋាភិបាលកម្ពុជាអំពីការជ្រើសរើសតំបន់ទីតាំងទីលានចាក់សំរាម (២០១៦) និងលក្ខណៈវិនិច្ឆ័យនៃទីលានចាក់សំរាមរបស់WB។

គំរូម៉ូដែលមួយ ដែលប្រើលក្ខណៈវិនិច្ឆ័យជម្រើស ក្នុងដំណើរការនៃការសម្រេចចិត្តតាមពហុលក្ខខណ្ឌ ត្រូវបានបង្កើតឡើង (ArcGIS)។ លទ្ធផលនៃម៉ូដែលនេះរួមមានផែនទីនៃទីក្រុងនីមួយៗ និងតំបន់ជុំវិញ ដែលមានពណ៌សក្តិសមជាបួន (៤)ប្រភេទ ៖មិនសមស្របដាច់ខាត មិនសូវសមស្រប សមស្រប សមស្របបំផុត។

ខេត្តសៀមរាប

ESMF ផ្តល់នូវការសង្ខេបខ្លីនៃជម្រើសកន្លែងចាក់សំរាម ដែលបានវាយតម្លៃ ជាការវាយតម្លៃលម្អិតបន្ថែមទៀត រួមមានការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គមបឋមសម្រាប់ខេត្ត សៀមរាប។

ទិដ្ឋភាពទូទៅនៃទីតាំងស្រាប

កន្លែងចាក់សំរាមដែលមានស្រាប់នេះ ស្ថិតនៅភូមិ អន្លង់ពីរ ឃុំត្រពាំងធំ ស្រុកប្រាសាទធំ ខេត្តសៀមរាប ហើយការកាន់កាប់កន្លែងបានដំណើរការលើផ្ទៃដីប្រមាណ ៨ហិកតា។ វាត្រូវបានគ្រប់គ្រងដោយឯកជន និងដំណើរការដោយគ្មានសូចនាករប្រតិបត្តិការសំខាន់ៗ សម្រាប់ប្រតិបត្តិការ និងការគ្រប់គ្រងកន្លែងចាក់សំរាម។ កន្លែងចាក់សំរាម មានព្រំប្រទល់ខាងកើត និងខាងត្បូង ជាប់នឹងវាលស្រែ ជាមួយនឹងខាងជើង និងលិច ជាប់នឹងភូមិអន្លង់ពីរ ។



កន្លែងចាក់សំរាមដែលមានស្រាប់ក្នុងភូមិ អន្លង់ពីរ ឃុំ ត្រពាំងធំ (13°18'22"N latitude and 104°2'2"E longitude)

កន្លែងចាក់សំរាមចំហដែលមានស្រាប់ បានដំណើរការអស់រយៈពេលជាង ១០ឆ្នាំ ដែលមានបរិមាណប្រហាក់ប្រហែលនៃកាកសំណល់នៅកន្លែងចាក់សំរាមលំដាប់ ប្រហែល ១.០០០.០០០ ម៉ែត្រគូប។ កាកសំណល់រឹងប្រមាណជា ២៥០ ទៅ៣០០តោនក្នុងមួយថ្ងៃ ត្រូវបានបោះចោលនៅកន្លែងចាក់សំរាមដែលមានស្រាប់។ កន្លែងចាក់សំរាមមានស្រាប់នៅភូមិ អន្លង់ពីរ បច្ចុប្បន្នកំពុងដំណើរការជាកន្លែងចាក់សំរាមបើកជំហរ។ នៅក្រោម សេណារីយ៉ូ “កុំធ្វើអ្វីទាំងអស់” កន្លែងចាក់សំរាមភូមិ អន្លង់ពីរ ត្រូវបានបន្តហានីភ័យទៅដល់បរិស្ថានសង្គម និងសុខភាពសាធារណៈយ៉ាងសំខាន់ដល់កម្មករ សហគមន៍ និងបរិស្ថានជុំវិញនោះ។ ឧស្ម័នមេតានត្រូវបានបន្តដោយគ្មានការគ្រប់គ្រងការបំភាយចេញ គ្មានការគ្រប់គ្រងទឹកស្អុយដែលហូរទៅទឹកក្រោមដី និងលើដី ក្លិនស្អុយ កាកសំណល់ដែលបក់ដោយខ្យល់ (កណ្តុរ រុយ ជាដើម)ដែលបានបន្តប៉ះពាល់ដល់កម្មករ អ្នករើសសំរាម និងសហគមន៍ជុំវិញនោះ ជាមួយការពាក់ព័ន្ធលើហានិភ័យ បរិស្ថាន សង្គម និងសុខភាពសាធារណៈ។

ជម្រើសទី១៖ស្តារឡើងវិញ និងពង្រីកគំនរសំរាមដែលមានស្រាប់នៅភូមិអន្លង់ពីរ ឃុំត្រពាំងធំ

ក្រោមជម្រើសនេះ កន្លែងចាក់សំរាមបច្ចុប្បន្ន នឹងត្រូវស្តារឡើងវិញ និងពង្រីក ជាមួយការសាងសង់រណ្តៅថ្មី និងហេដ្ឋារចនាសម្ព័ន្ធកន្លែងចាក់សំរាមលើកន្លែងចាក់សំរាមដែលមានស្រាប់ តាមរយៈការស្តារឡើងវិញ ក៏ដូចជាដីជាប់គ្នា។ ជម្រើសនេះមានន័យថាស្តារកន្លែងចាក់សំរាមដែលមានស្រាប់ឡើងវិញ ណែនាំប្រព័ន្ធប្រមូលទឹកស្អុយ សាងសង់ប្រព័ន្ធកម្មទឹកស្អុយ ប្រព័ន្ធកម្ម/ប្រើប្រាស់ទីលានទុកដាក់សំរាមដែលមានទាញយកខ្សែ ការរំញុក ការធ្វើដីកំប៉ុស និងហេដ្ឋារចនាសម្ព័ន្ធផ្សេងទៀត ដោយការកែទម្រង់ និងស្ថិរភាពបរិមាណនៃសំណល់ ដែលមានស្រាប់ និងពង្រីកកន្លែងទុកដាក់សំរាមឱ្យឆ្ងាយពីភូមិ។

ការស្តារឡើងវិញ និងការពង្រីកទីតាំងបច្ចុប្បន្ន ត្រូវបានវាយតម្លៃថាជាគោលការណ៍អាចធ្វើទៅបាន។ បច្ចុប្បន្នដីនេះ ត្រូវបានគេប្រើជាដីកសិកម្ម ប៉ុន្តែទំនងជាបានរងផលប៉ះពាល់រួចមកហើយពីការបំពុល។ តំបន់

នេះ ត្រូវបានពិនិត្យដោយដឹកសិកម្មដែលភាគច្រើនប្រើសម្រាប់ផលិតស្រូវ ដោយគ្មានសំណង់លំនៅដ្ឋាន។ តំបន់ពង្រីកសក្តានុពលថ្មីទៅភាគអាគ្នេយ៍ក៏នឹងដាក់ទីតាំងនេះឱ្យឆ្ងាយប្រមាណ ៤០០ ទៅ ១០០០+ ម៉ែត្រ ពី តំបន់លំនៅដ្ឋានក្បែរភូមិ អន្លង់ពីរ ទៅភាគពាយព្យនៃទីតាំងបច្ចុប្បន្ន។ ស្រះទឹកស្អុយដែលបើកចំហនៅជិត រចនាសម្ព័ន្ធលំនៅដ្ឋាននឹងត្រូវជួសជុល។ បឹងទន្លេសាបដែលជាទីនៃជីវចម្រុះ មានចម្ងាយ១៣,៥គ.ម ទៅ ភាគ ខាងត្បូងនៃតំបន់នេះ។ ការវាយតម្លៃលម្អិត នឹងចាំបាច់សម្រាប់តំបន់ដីជាក់លាក់ ដែលត្រូវការរចនា លម្អិត និងការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គមជាក់លាក់ បន្ទាប់ពីកិច្ចព្រមព្រៀង និងការបញ្ចប់ ដំណើរការ ជ្រើសរើសកន្លែងចាក់សំរាម។ មិនថាកន្លែងនោះត្រូវបិទ ឬពង្រីកទេ កន្លែងចាក់សំរាមដែលមាន ស្រាប់នឹងត្រូវ ស្តារឡើងវិញ ដើម្បីទប់ស្កាត់ហេតុប៉ះពាល់បរិស្ថានបន្ថែមទៀត។

គុណសម្បត្តិ គុណវិបត្តិ និងសេចក្តីសន្និដ្ឋានបឋមសម្រាប់ ជម្រើសទី១៖ ការស្តារឡើងវិញនូវទីលានចាក់ សំរាម ដែលមានស្រាប់ត្រូវបានរៀបរាប់នៅក្នុងតារាងខាងក្រោម

តារាង ២៖ គុណសម្បត្តិ គុណវិបត្តិ និងការវាយតម្លៃបឋមនៃជម្រើសទី១៖ ស្តារឡើងវិញនូវកន្លែងចាក់សំរាម ដែលមាន ស្រាប់

គុណសម្បត្តិ	គុណវិបត្តិ	ការវាយតម្លៃបឋម
<ul style="list-style-type: none"> • ទីតាំងដែលមានស្រាប់បានបែងចែកតំបន់រួចទៅហើយ សម្រាប់ការប្រើប្រាស់ជាលានចាក់សំរាម។ • មានផ្ទៃដីសល់បម្រុង • ការស្តារឡើងវិញ នៃទីតាំងបច្ចុប្បន្ន អាចផ្តល់នូវផ្ទៃទំនេរបន្ថែមទៀត • កន្លែងចាក់សំរាម ដែលមានស្រាប់ នឹងតម្រូវឱ្យបិទក្នុងករណីណាមួយ ដូច្នេះការសន្សំសំចៃចំណាយអាចធ្វើឡើងតាមរយៈការប្រើប្រាស់បន្ត និងការពង្រីក ទីតាំង • ផ្លូវល្អ និងមានទីតាំងល្អពីតំបន់សេវាកម្មក្រុង • គ្មានហានិភ័យទឹកជំនន់ឬកន្លែងបរិស្ថានឬតំបន់បេតិកភណ្ឌវប្បធម៌ឡើយ • មិនស្ថិតនៅក្នុងតំបន់ពង្រីកទីក្រុង សម្រាប់តំបន់ពាណិជ្ជកម្មលំនៅ/ ដ្ឋាន • ការបំពុលបច្ចុប្បន្ននឹងត្រូវបានដោះស្រាយតាមរយៈការស្តារឡើងវិញ 	<ul style="list-style-type: none"> • សហគមន៍ប្រជាជនរស់នៅ មានចម្ងាយជិត (<១.០ គីឡូម៉ែត្រ) • មួយផ្នែករបស់សហគមន៍បាន ក្លាយក្តៅ និងស្នើឱ្យបិទទីតាំង។ • គំនរសំរាមបច្ចុប្បន្នមិនមានការគ្រប់គ្រងបរិស្ថានទេ ដែលនាំឱ្យមានផលប៉ះពាល់ដី ទឹកលើដីក្រោមដី ខ្យល់។ ល។ ត្រូវការការស្តារឡើងវិញយ៉ាងទូលំទូលាយ។ 	<ul style="list-style-type: none"> • កន្លែងចាក់សំរាមដែលមានស្រាប់គឺជាកន្លែងដែលត្រូវបានផ្សារភ្ជាប់នៅក្រោមWB ESF ហើយនឹងត្រូវការស្តារ ឡើងវិញដោយមិនគិតពីថាតើវាត្រូវបានបិទឬពង្រីកដើម្បីការពារផលប៉ះពាល់បរិស្ថានអវិជ្ជមានបន្ថែមទៀតឡើយ។ • បញ្ហាបរិស្ថាននិងសុខភាពសាធារណៈបច្ចុប្បន្ននឹងត្រូវបានដោះស្រាយតាមរយៈគម្រោង (ការសម្អាត ទឹកស្អុយក្លិន សំឡេងការផ្គត់ផ្គង់ទឹកស្អាតតាម បំពង់សម្រាប់សហគមន៍។ល។) • ការស្តារឡើងវិញនូវកន្លែងចាក់សំរាមដែលមានស្រាប់បច្ចុប្បន្ន នឹងអនុញ្ញាតឱ្យអ្នករើសសំរាម លើកលែងតែកុមារបន្តមានលទ្ធភាពប្រើប្រាស់ឡើងវិញនៅទីតាំងដដែល និងអាចធ្វើការក្រោមលក្ខខណ្ឌការងារសុខភាពនិងសុវត្ថិភាពការងារដែលប្រសើរឡើង។

គុណសម្បត្តិ	គុណវិបត្តិ	ការវាយតម្លៃបឋម
<ul style="list-style-type: none"> • ចំណែកដីសំខាន់មួយសម្រាប់សហគមន៍ គឺបានលើកទឹកចិត្តក្នុងការ រើសសំរាមនៅកន្លែងចាក់សំរាមហើយ និងបន្តអោយមានការចូលទៅរើសយកសំរាមកែច្នៃឡើងវិញបាន ប៉ុន្តែមានលក្ខខណ្ឌការងារដែលបានគ្រប់គ្រង និងសុវត្ថិភាព។ 		<ul style="list-style-type: none"> • អ្នករស់នៅក្នុងសហគមន៍អាចទទួលបានប្រាក់ចំណូលបន្ថែមតាមរយៈការងារ ដែលបានបង្កើតនៅកន្លែង ចាក់សំរាមការស្តារសម្ភារៈ និងកន្លែងធ្វើជីកំប៉ុស។ • ការសន្សំថ្លៃដើមនឹងត្រូវធ្វើឡើងតាមរយៈប្រព័ន្ធគ្រប់គ្រងគេហទំព័រចែករំលែក ដែលទាមទារសម្រាប់ការបិទនិងពង្រីក (ប្រព័ន្ធសម្អាតទឹកស្អុយខ្សែសង្វន ការគ្រប់គ្រងការចេញចូល) • ការប្រៀបធៀបកាន់តែល្អិតល្អន់រវាងជម្រើសនិងផលប៉ះពាល់បឋមលើបរិស្ថាននិងសង្គម ត្រូវបានរួមបញ្ចូលនៅក្នុងESIA បឋម

ជម្រើសទី២៖ការបិទទីតាំងកន្លែងចាក់សំរាម ដែលមានស្រាប់ និងការអភិវឌ្ឍន៍ទីលានចាក់សម្រាមថ្មី នៅភូមិត្រពាំងទឹម ឃុំកណ្តែក

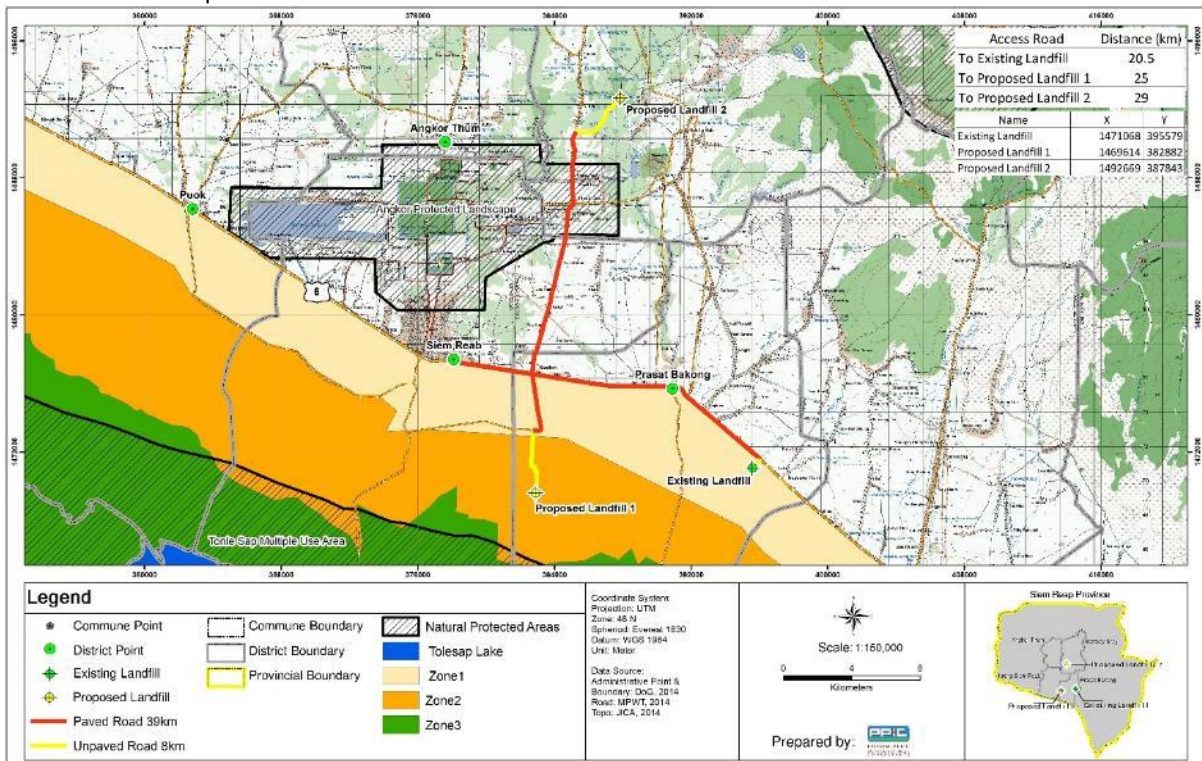
ទីតាំងសក្តានុពលសម្រាប់ទីលានចាក់សំរាមថ្មី ជម្រើសទី២មានទីតាំងនៅភូមិត្រពាំងទឹមឃុំកណ្តែកស្រុកប្រាសាទ បាគង ខេត្តសៀមរាប។ វាមានទីតាំងប្រហែល១១គីឡូម៉ែត្រពីភាគអាគ្នេយ៍ នៃកណ្តាលក្រុងសៀមរាប។ ទីតាំង ដ៏មានសក្តានុពលនេះគឺជាទីតាំងវាលស្មៅបៃតងជាប់នឹងរោងចក្រប្រព្រឹត្តិកម្មទឹកស្អុយនិងហ៊ុំព័ទ្ធដោយដីកសិកម្ម (វាលស្រែ) ដីងាយលិចទឹក និងនគរូបនីយកម្មឆាប់រហ័ស (គម្រោងបែងចែកដី)។ ភូមិដែលនៅជិតបំផុតបច្ចុប្បន្ន មានចម្ងាយជាង២គីឡូម៉ែត្រទៅភាគខាងជើងហើយទីតាំងសក្តានុពលបច្ចុប្បន្នពោរពេញដោយដីវាលនិងស្រះនេសាទសហគមន៍ក្រៅផ្លូវការ។

ទីតាំងនេះជាតំបន់ដីទំនាប ដែលគេសង្ស័យថាមាននីវ៉ូទឹកក្រោមដីខ្ពស់ហើយងាយនឹងមានទឹកជំនន់។ តំបន់ទាំងមូលគឺជាផ្នែកមួយនៃផែនការពង្រីកទីក្រុងដ៏សំខាន់សម្រាប់ការអភិវឌ្ឍន៍លំនៅដ្ឋានតម្លៃខ្ពស់។ វាត្រូវបានកំណត់ព្រំប្រទល់ទៅភាគខាងត្បូង ដោយបឹងទន្លេសាបបម្រុងជីវចម្រុះរបស់អង្គការយូណេស្កូ។ ផ្លូវចូលគឺនៅតាមបណ្តោយផ្លូវដី/គ្រួសក្រហម ដែលមានគុណភាពអន់ដែលក្នុងស្ថានភាពបច្ចុប្បន្នពិបាកធ្វើដំណើរក្នុង រដូវវស្សា។ ផ្លូវក្រវ៉ាត់ក្រុងដែលបានគ្រោងទុកនឹងធានាបាននូវការចូលប្រើប្រាស់បានល្អទៅកាន់ទីតាំង និងការធ្វើឱ្យប្រសើរឡើងនូវការការពារទឹកជំនន់ប៉ុន្តែទំនងជាជំរុញឱ្យមានការអភិវឌ្ឍន៍ផ្សេងៗចូលក្នុងតំបន់នោះកាន់តែ ច្រើនផងដែរ។



រូបភាព១៖ ជម្រើសទីតាំងសក្តានុពលចាក់សំរាមអនាម័យថ្មីស្ថិតក្នុងភូមិត្រពាំងទឹមក្រុងសៀមរាប
 រូបភាពខាងឆ្វេង៖ រូបភាពជ្រួន នៃតំបន់សក្តានុពល(ស្តាំ)រួមជាមួយខ្នងដីការពារទឹកជំនន់និងតំបន់ដាំដុះស្រូវ(ឆ្វេង)
 រូបភាពខាងស្តាំ៖ វាលស្រែ(ស្តាំ) ខ្នងដីការពារទឹកជំនន់(កណ្តាល)តាំងទីលានចាក់សំរាម (ឆ្វេង)

ទីតាំងសក្តានុពលនៅក្រោមជម្រើសកន្លែងចាក់សំរាមទី២ មានទីតាំងនៅកណ្តាលតំបន់ទី២ ដែលត្រូវបានកំណត់ ជាតំបន់ការពារដែលមានកម្រិតការប្រើប្រាស់ដី ដោយមិនរាប់បញ្ចូលកន្លែងចាក់សំរាម។ នៅក្រោមជម្រើសនេះ កន្លែងចាក់សំរាមនឹងត្រូវបានច្របាច់រវាងតំបន់ពង្រីកទីក្រុង និងបឹងទន្លេសាប UNESCO និងបឹងទន្លេសាប បម្រុង។



រូបភាព ២៖ ផែនទីតំបន់បម្រុងជីវមណ្ឌលបឹងទន្លេសាប (TSBR)
 គុណសម្បត្តិគុណវិបត្តិនិងការសន្និដ្ឋានបឋមលើជម្រើសទី២៖ការបិទកន្លែងចាក់សំរាមដែលមានស្រាប់ និងការអភិវឌ្ឍន៍កន្លែងចាក់សំរាមថ្មី ត្រូវបានផ្តល់ជូនខាងក្រោម។

តារាង៣៖ គុណសម្បត្តិគុណវិបត្តិនិងការវាយតម្លៃបឋមនៃជម្រើសទី២៖ការបិទទីតាំងដែលមានស្រាប់ និងការអភិវឌ្ឍន៍ទីតាំងទីលានចាក់សំរាមថ្មីក្នុងភូមិត្រពាំងទឹម

គុណសម្បត្តិ	គុណវិបត្តិ	ការវាយតម្លៃបឋម
<ul style="list-style-type: none"> • ទីតាំងរួមគ្នាជាមួយរោងចក្រប្រព្រឹត្តិកម្មទឹកសំណល់ថ្មីមានគុណសម្បត្តិ៖ (i) ការប្រើប្រាស់ ដីរួមគ្នា/ការកំណត់តំបន់ (ii) បង្គោលទឹកចេញពីសំរាមទៅនិងរួមផ្សំជាមួយកាកសំណល់ទឹកនិង (iii) WWTP បោះចោលកាកសំណល់រក់ទៅទីលានចាក់សំរាម។ • ដីសាធារណៈធំទូលាយ(+៥០ហិកតា) • បច្ចុប្បន្នមានចំងាយ>២គីឡូម៉ែត្រពីលំនៅដ្ឋានដែលនៅជិតបំផុត។ • ទីតាំងនេះមានសណ្ឋានដីរាបស្មើហើយមើលទៅដូចជាដីបាតក្រោមជាដីឥដ្ឋ។ • គម្រោងសាងសង់ផ្លូវក្រវ៉ាត់ក្រុងផ្លូវចូលទីតាំងល្អ 	<ul style="list-style-type: none"> • តំបន់ពង្រីកទីក្រុងលំនៅដ្ឋានមានតម្លៃខ្ពស់ទៅខាងជើង, • ជិតបឹងទន្លេសាបដីចម្រុះនិងតំបន់អភិវឌ្ឍន៍មានការរីកឡើង (ខាងត្បូង)។ • ការចូលប្រើទីតាំងនេះស្ថិតក្នុងស្ថានភាពមិនល្អនិងឆ្លងកាត់ការអភិវឌ្ឍន៍លំនៅដ្ឋានដ៏ច្រើន។ • ទឹកក្រោមដីរាក់និងតំបន់ហានិភ័យទឹកជំនន់ដែលអាចកើតមាន។ • ក្នុងរដូវវស្សាទឹកជោពីសំរាមត្រូវរក្សាទុកឬបូមចេញក្រៅ។ • ការចំណាយខ្ពស់ក្នុងសង្គមនិងហានិភ័យដោយសារអ្នករើសអើងតាមបច្ចុប្បន្ននឹងបាត់បង់លទ្ធភាពទទួលបានរបស់ងាចក្រៃថ្លៃបាន • សហគមន៍នេសាទមានវត្តមាន 	<ul style="list-style-type: none"> • ទីតាំងថ្មីដ៏មានសក្តានុពលនិងអត្ថប្រយោជន៍ដោយសារនៅជិតគ្នាជាមួយWWTP ថ្មី ដែលបានស្នើឡើងនិងផ្ទៃដីដែលអាចពង្រីក បានមានទំហំធំទូលាយ (+៥០ហិកតា)។ • ទោះជាយ៉ាងណាក៏ដោយទីតាំងនេះក៏មានហានិភ័យខ្ពស់ដល់បរិស្ថាននិងសង្គមដែរដូច្នេះហើយត្រូវបានចាត់ទុកថាមិនសូវស័ក្តិសមសម្រាប់ទីលានសម្រាប់ការអភិវឌ្ឍន៍នោះទេ។នេះដោយសារតែទីតាំងស្ថិតនៅក្នុងតំបន់អភិវឌ្ឍន៍លំនៅដ្ឋាននិងឧស្សាហកម្មដែលមានទីតាំងនៅជាប់តំបន់ទឹកជំនន់ស្ថិតនៅក្នុងតំបន់ហាមឃាត់ការអភិវឌ្ឍន៍របស់អង្គការយូណេស្កូនៃតំបន់បម្រុងមណ្ឌលជីវៈបឹងទន្លេសាបនិងដោយសារហេតុប៉ះពាល់លើអ្នករើសសំរាមនិងកម្មករនៅកន្លែងដែលមានស្រាប់។

គុណសម្បត្តិ	គុណវិបត្តិ	ការវាយតម្លៃបឋម
• ចម្ងាយសមរម្យ (>១១គីឡូម៉ែត្រ) ពីកណ្តាលទីក្រុង ង។		

ខេត្តកំពង់ស្ពឺ

ជម្រើសទី១៖ ការស្តារ និងពង្រីកទីតាំងចាក់សំរាម ដែលមានស្រាប់ក្នុងភូមិសំពៅសង្កាត់ច្បារមនក្រុងច្បារមន
ទំហំផ្ទៃដីចាក់សំរាមប្រហាក់ប្រហែល១១ហិ.ត មាន៤.៥ហិ.តកំពុងដំណើរការនិង៦.៥ហិ.តជាវាលស្រែ។ ទីតាំងស្ថិតនៅជិត (~10គីឡូម៉ែត្រ) ពីក្រុងកំពង់ស្ពឺក្នុងតំបន់ដែលមានការអភិវឌ្ឍន៍ឧស្សាហកម្មនិងលំនៅដ្ឋានយ៉ាងឆាប់រហ័ស។ ទីតាំងបច្ចុប្បន្នត្រូវបានហ៊ុំព័ទ្ធដោយវាលស្មៅ។ ទីតាំងបច្ចុប្បន្នត្រូវបានហ៊ុំព័ទ្ធដោយដីវាល។ ទោះជាយ៉ាងនេះក្តីការអភិវឌ្ឍន៍លំនៅដ្ឋានតម្លៃខ្ពស់កំពុងសាងសង់នៅផ្នែកខាងលិចនិងផ្នែកខាងត្បូងនៃទីលានចាក់សំរាមដែលមានស្រាប់។ មិនមានដីបន្ថែមក្នុងការពង្រីកឲ្យបានគ្រប់គ្រាន់ចំពោះទីលានបច្ចុប្បន្នទេ។ ទីលានចាក់សំរាមបច្ចុប្បន្ននឹងតម្រូវឱ្យមានការស្តារឡើងវិញដើម្បីកាត់បន្ថយហេតុប៉ះពាល់បរិស្ថាន។ មានអ្នករើសអេកតាយប្រមាណ១៨នាក់ធ្វើការនៅទីលានចាក់សំរាម។ ការវាយតម្លៃការងារមូលដ្ឋានបន្ថែមទៀតគឺត្រូវការជាចាំបាច់ដើម្បីផ្តល់ព័ត៌មានលម្អិតទាក់ទងនឹងស្ថានភាពរបស់អ្នករើសអេកតាយនៅពេលដែលគម្រោងត្រូវបានកំណត់។

គុណសម្បត្តិគុណវិបត្តិនិងការវាយតម្លៃបឋមលើជម្រើសទី១៖ ការស្តារឡើងវិញនូវកន្លែងចាក់សំរាមដែលមានស្រាប់ត្រូវបានរៀបរាប់ក្នុងតារាងទី៤។



ក្រាហ្វិក៤៖ ទីលានចាក់សំរាម ដែលមានស្រាប់នៅភូមិសំពៅសង្កាត់ច្បារមនខេត្តកំពង់ស្ពឺ

តារាង៤៖ គុណសម្បត្តិគុណវិបត្តិនិងការវាយតម្លៃបឋមនៃជម្រើសទី១៖ ការស្តារកន្លែងចាក់សំរាមដែលមានស្រាប់នៅភូមិសំពៅសង្កាត់ច្បារមន ខេត្តកំពង់ស្ពឺ

គុណប្រយោជន៍	គុណវិបត្តិ	ការវាយតម្លៃបឋម
<ul style="list-style-type: none"> • ទីតាំងនេះមានផ្លូវចេញចូលល្អទៅកាន់ផ្លូវធំ (ក្រាលកៅស៊ូ) NR 44 និងតំបន់សេវាកម្ម សំណល់រឹង។ • គ្មានការរាយការណ៍អំពីទឹកជំនន់និងមិននៅជិតទីតាំងរសើបបរិស្ថានឬតំបន់បេតិកភណ្ឌវប្បធម៌ណាមួយឡើយ។ • ទីតាំងនេះមានលក្ខណៈជាដីឥដ្ឋ/ខ្សាច់/ដីល្បាប់ដែលមានជម្រាបទឹកទាបនិងលក្ខណៈសម្បត្តិសំណង់វិស្វកម្មល្អ។ 	<ul style="list-style-type: none"> • នៅជិតតំបន់អភិវឌ្ឍន៍លំនៅដ្ឋានថ្មីៗក្នុងតំបន់ពាណិជ្ជកម្មនិងអភិវឌ្ឍន៍លំនៅដ្ឋានតម្លៃខ្ពស់។ • មិនមានដីបន្ថែមសម្រាប់ពង្រីកជុំវិញទីតាំងដែលមានស្រាប់នោះទេ។ • ការបិទនិងជួសជុលទីតាំងដែលមានស្រាប់នឹងមានផលប៉ះពាល់ដល់សង្គមខ្ពស់ដោយសារអ្នករើសអេតចាយបច្ចុប្បន្នត្រូវធ្វើដំណើរទៅកាន់ទីលានចាក់សំរាមថ្មីដើម្បីបន្តប្រមូលសំរាមដែលអាចកែច្នៃឡើងវិញបាននិងទាមទារសំណងតាមរយៈគម្រោងស្តារជីវភាព។ 	<ul style="list-style-type: none"> • ទីលានចាក់សំរាមដែលមានស្រាប់ស្ថិតនៅក្នុងតំបន់អភិវឌ្ឍន៍លំនៅដ្ឋាននិងឧស្សាហកម្មមានតម្លៃខ្ពស់ដែលមានទំហំមិនគ្រប់គ្រាន់សម្រាប់ពង្រីក។ • ការសន្និដ្ឋានបឋមគឺថាជម្រើសដែលសមស្របបំផុតគឺការបិទទីតាំងសម្រាប់ការចោលសំរាមហើយអាចអភិវឌ្ឍស្ថានីយ៍ផ្ទេរការប្រមូលសម្ភារៈនិងដីកំប៉ុស្តនៅក្នុងទីតាំងនេះ។ • ម៉្យាងទៀតត្រូវបិទកន្លែងចាក់សំរាមឱ្យបានពេញលេញនិងចាត់ចែងដីនេះដែលសមរម្យសម្រាប់ការអភិវឌ្ឍន៍លំនៅដ្ឋានឬឧស្សាហកម្មដែលមានតម្លៃខ្ពស់នាពេលអនាគត។ នេះនឹងជាចំណូលហិរញ្ញវត្ថុដ៏ច្រើនដោយសារការកើនឡើងតម្លៃអចលនទ្រព្យ។ • ក្នុងករណីមានការបិទទាំងស្រុងអ្នករើសអេតចាយបច្ចុប្បន្ននឹងត្រូវដាក់បញ្ចូលទៅក្នុងកន្លែងថ្មីដ្ឋានការចេញចូលនៅទីតាំងថ្មីឬការគាំទ្រជីវភាពផ្សេងៗទៀត • ការវិភាគបន្ថែមត្រូវផ្អែកលើដំណើរការកំណត់ទីតាំងដែលកំពុងដំណើរការបន្តទៀត

ជម្រើសទី២៖ ការបិទទីលានចាក់សំរាមដែលមានស្រាប់ និងការអភិវឌ្ឍន៍ទីលានចាក់សំរាមថ្មី

ជម្រើសទីតាំងពីរត្រូវបានផ្តល់ដោយរដ្ឋបាលក្រុងសម្រាប់ការអភិវឌ្ឍន៍ទីលានចាក់សំរាមថ្មី។ ទីតាំងមួយនៅខាងលិចក្រុងច្បារមននៅស្រុកសំរោងទង (11°30'29.13"N, 104°19'3.22"E) និងមួយកន្លែងទៀត នៅស្រុកគងពិសី។ ជម្រើសទី១ គឺស្ថិតនៅទីតាំងដាច់ស្រយាលជាង ៣០km ពីក្រុងច្បារមនហើយផ្លូវមិនល្អ ដូច្នេះវាមិនសមរម្យ សម្រាប់ការអភិវឌ្ឍន៍ទេ។ ទីតាំងនៅស្រុកគងពិសី មានចំងាយប្រហែល ១៥ គីឡូម៉ែត្រ (ផ្លូវត្រង់) ពីក្រុងច្បារមន។ យ៉ាងណាក៏ដោយទីតាំងនេះអាចធ្វើដំណើរបានតែតាមផ្លូវជាតិលេខ៤ និងផ្លូវជាតិលេខ៤១

ដែលមានចម្ងាយធ្វើដំណើរសរុប៣៦គីឡូម៉ែត្រ។ដូច្នេះវាមិនសមស្របទេដោយសារចម្ងាយពីក្រុងហើយក៏ស្ថិតនៅក្នុងតំបន់ដែលងាយរងគ្រោះបរិស្ថាននិងវប្បធម៌ផងដែរ។ ជម្រើសទីតាំងបន្ថែមទៀត កំពុងត្រូវបានពិភាក្សាជាមួយរដ្ឋបាលខេត្ត និងក្រុងនៃខេត្តកំពង់ស្ពឺ។ ទាំងនេះមិនត្រូវបានគេរំពឹងថានឹងត្រូវបានវាយតម្លៃនោះទេ។

ខេត្តកណ្តាល

ជម្រើសទី១៖ការស្តារនិងពង្រីកកន្លែងចាក់សំរាមដែលមានស្រាប់នៅភូមិព្រែកហូរសង្កាត់ព្រែកហូរក្រុងតាខ្មៅ
ទីលានចាក់សំរាមដែលមានស្រាប់ស្ថិតនៅក្នុងភូមិព្រែកហូរសង្កាត់ព្រែកហូរចម្ងាយប្រមាណ៦គីឡូម៉ែត្រពីក្រុងតាខ្មៅហើយអាចចេញចូលបានដោយផ្លូវលំមានចម្ងាយប្រហែល០.៨គីឡូម៉ែត្រពីផ្លូវក្រុង។ ដីនេះជាកម្មសិទ្ធិរបស់រដ្ឋ និងស្ថិតនៅក្នុងតំបន់លំនៅដ្ឋានដែលមានផ្ទៃដីសរុបចំនួន២ហិកតាកំពុងដំណើរការលើដីរបស់រដ្ឋ។ មានអ្នករើស អេតចាយប្រមាណ១០០នាក់ដែលធ្វើសកម្មភាពរើសអេតចាយដើម្បីជីវភាពរស់នៅរបស់ពួកគេហើយភាគច្រើន រស់នៅក្នុងភូមិជុំវិញទីលានចាក់សំរាមដែលលទ្ធភាពទទួលបានទឹកប្រើប្រាស់និងអនាម័យនៅមានកម្រិត។ ដីសម្រាប់ពង្រីកមិនគ្រប់គ្រាន់ដោយសារមានការអភិវឌ្ឍជុំវិញនិងទីតាំងក្នុងតំបន់អភិវឌ្ឍន៍មានតម្លៃខ្ពស់។



ក្រាហ្វិក៥៖ទីលានចាក់សំរាមដែលមានស្រាប់នៅភូមិព្រែកហូរសង្កាត់ព្រែកហូរខេត្តកណ្តាល

គុណសម្បត្តិគុណវិបត្តិនិងការវាយតម្លៃបឋមលើជម្រើសទី១៖ការស្តារឡើងវិញនូវទីលានចាក់សំរាមដែលមានស្រាប់ត្រូវបានបង្ហាញក្នុងតារាងទី៥។

តារាង៥៖ គុណសម្បត្តិគុណវិបត្តិនិងការវាយតម្លៃបឋមនៃជម្រើសទី១៖ការស្តារឡើងវិញនូវកន្លែងចាក់សំរាមដែលមាន ស្រាប់នៅខេត្តកណ្តាល

គុណសម្បត្តិ	គុណវិបត្តិ	សន្និដ្ឋានបឋម
<ul style="list-style-type: none"> •តំបន់ដែលមានស្រាប់ត្រូវបាន ប្រើប្រាស់រួចទៅហើយជាដីគោកហើយនឹងតម្រូវឲ្យមានការវិនិយោគបន្ថែមទៀត សម្រាប់ការ ស្តារឡើងវិញ។ •ទីតាំងនេះមានការចូលដំណើរការយ៉ាងល្អទៅកាន់តំបន់សេវាកម្មផ្លូវធំនិងទីក្រុងនៅក្បែរនោះ។ 	<ul style="list-style-type: none"> •ទីតាំងដែលមានស្រាប់មានចំងាយមិនដល់១គីឡូម៉ែត្រពីផ្ទះប្រជាពលរដ្ឋដែលមានលក្ខណៈរីក ខ្លាំងហើយសហគមន៍ក៏តវ៉ារឿង ហេតុប៉ះពាល់ទាំងនេះដែរ។ •ទីតាំងមាននីវ៉ូទឹកក្រោមដីទាប។ 	<ul style="list-style-type: none"> •សេចក្តីសន្និដ្ឋានបឋម៖ការបិទជាមួយនឹងការស្តារឡើងវិញនូវទីលានចាក់សំរាមដែលមានស្រាប់ហាក់ដូចជាជម្រើសដ៏សមស្របបំផុតដោយសារវាមានទំហំមិនគ្រប់គ្រាន់សម្រាប់ការប្រើប្រាស់ជាបន្តជាទីលានចាក់សំរាម។

គុណសម្បត្តិ	គុណវិបត្តិ	សន្និដ្ឋានបឋម
<ul style="list-style-type: none"> • ដីបន្ថែមនៅជុំវិញទីតាំងនោះអាចរកបាន។ • ការសន្សំសំចៃចំណាយអាចធ្វើឡើងតាមរយៈការពង្រីកតំបន់ ដែលមានស្រាប់ និងប្រព័ន្ធ គ្រប់គ្រងហេដ្ឋារចនាសម្ព័ន្ធរួម និងបរិស្ថាន (ឧទាហរណ៍ ដូចជា ផ្លូវប្រព័ន្ធលូរោងចក្រប្រព្រឹត្តិកម្មទឹកស្អុយ។ល។) ជាមួយរណ្តៅបច្ចុប្បន្ន។ • ទីតាំងនេះមិនត្រូវបានរាយការណ៍ថាមានទំនោរទៅរកទឹកជំនន់ទេ ហើយជាទូទៅមិននៅជិតកន្លែងងាយទទួលរងនូវបរិស្ថានឬកន្លែងកេរ្តិ៍ដំណែលវប្បធម៌ឡើយ។ • ទីតាំង (ពីការអង្កេតដំបូង) ខាងក្រោមជាដីឥដ្ឋមិនជ្រាបទឹក 	<ul style="list-style-type: none"> • ទីលាននេះគ្មានការត្រួតពិនិត្យបរិស្ថាន ដូច្នេះនឹងត្រូវការស្តារ ឡើងវិញជាចាំបាច់។ • ឡដុតមិនមានការគ្រប់គ្រងបរិស្ថានទេ។ • រណ្តៅចាក់បច្ចុប្បន្នមិនមានស្រទាប់ការពារ ការប្រមូល ឬប្រព្រឹត្តិកម្មទឹកស្អុយទេ ដែលនាំឲ្យមានការបំពុលទឹកក្រោមដីខ្លាំង។ • ការបិទ ឬស្តារទីលានដែលមានស្រាប់នេះអាចមានហេតុប៉ះពាល់សង្គមខ្ពស់ដោយសារអ្នករើសអេតចាយត្រូវធ្វើដំណើរឆ្ងាយទៅកាន់ទីតាំងថ្មីដើម្បីបន្តការងាររើសអេតចាយ និងមានការផ្តល់នូវសំណងដើម្បីស្តារជីវភាពរស់នៅរបស់ពួកគាត់។ 	<ul style="list-style-type: none"> • ស្ថានីយ៍ផ្ទេរកន្លែងធ្វើដីកំប៉ុសនិងកន្លែងកែច្នៃសំរាមអាចមានទីតាំងនៅកន្លែងដែលមានស្រាប់ដើម្បីបន្តផ្តល់លទ្ធភាពទទួលបានធនធានដល់អ្នករើសសំរាម។ • កន្លែងចាក់សំរាមដែលមានស្រាប់ស្ថិតនៅក្នុងតំបន់អភិវឌ្ឍន៍មានតម្លៃខ្ពស់។ • ទីតាំងបច្ចុប្បន្នអាចត្រូវស្តារឡើងវិញទៅចំណុចមួយដែលសមរម្យសម្រាប់ការអភិវឌ្ឍន៍លំនៅដ្ឋាន/ឧស្សាហកម្មនាពេលអនាគតជាមួយនឹងប្រាក់ចំណូលយ៉ាងច្រើន។ • ក្នុងករណីមានការបិទទាំងស្រុងអ្នករើសអេតចាយបច្ចុប្បន្ននឹងត្រូវដាក់បញ្ចូលទៅក្នុងកន្លែងថ្មីផ្តល់ការចេញចូលទៅកាន់ទីតាំងថ្មីឬជំនួយជីវភាពពួកគាត់តាមមធ្យោបាយផ្សេងៗទៀត • ការវិភាគបន្ថែមដោយផ្អែកលើជម្រើសទីតាំងផ្សេងៗ

ជម្រើសទី២៖ ការបិទកន្លែងចាក់សំរាមដែលមានស្រាប់និងការអភិវឌ្ឍន៍ទីលានចាក់សំរាមថ្មី

ទីតាំងចំនួនបីត្រូវបានផ្តល់ដំបូងដោយរដ្ឋបាលក្រុងជាជម្រើសសក្តានុពលសម្រាប់ការអភិវឌ្ឍន៍ទីលានចាក់សំរាមថ្មី



ក្រាហ្វិក៦៖ ស្ថានភាពដើមនៃជម្រើសទីតាំងទីលានចាក់សំរាមA (ឆ្វេង) និងB (ស្តាំ) នៅខេត្តកណ្តាល

ទីតាំងទាំងពីរ (A) និង (B) មិនស័ក្តិសមទេដោយសារកន្លែងទាំងនេះត្រូវបានជីកយកដីហើយ ដូច្នេះវាមិនសមរម្យសម្រាប់ការអភិវឌ្ឍន៍ជាទីលានចាក់សំរាមទេ។ កន្លែងយកថ្ម និងការជីកកាយដែលស្ថិតនៅក្រោមកម្រិត ទឹកក្រោមដី (ច្រើនករណី) នឹងបំពេញដោយទឹក។ ប្រសិនបើស្រទាប់ការពារខាងក្រោមត្រូវបានធ្វើនៅក្រោមកម្រិត ទឹកក្រោមដីលំហូរនៃទឹកនឹងលើកស្រទាប់ការពារនោះ (នៅពេលដែលសំណល់មិនទាន់បានចាក់) និងបណ្តាល ឱ្យបរាជ័យ។ ទោះបីជាបណ្តាដែលមានស្ថានភាព អាចត្រូវបានបង្កើតនៅកន្លែងយកថ្មក៏ដោយ ដោយសារតែ រណ្តៅនឹងស្ថិតនៅក្រោមកម្រិតដីវានឹងត្រូវការការបូមទឹកចេញជាប្រចាំដើម្បីទាញយកទឹកសំណល់ចេញ ព្រោះមិនមានលំហូរធម្មជាតិទេ។ បច្ចេកទេសវិស្វកម្មនិងការចំណាយពាក់ព័ន្ធជាច្រើននឹងត្រូវការជាចាំបាច់។

ជម្រើសទីតាំងបន្ថែមទៀតកំពុងត្រូវការពិភាក្សាជាមួយរដ្ឋបាលខេត្ត និងក្រុងនៃខេត្តកណ្តាល។ ទាំងនេះមិនត្រូវ បានគេរំពឹងថានឹងត្រូវបានវាយតម្លៃមុនពេលវាយតម្លៃនោះទេ។

សក្តានុពលនៃហានិភ័យបរិស្ថាននិងសង្គម ហេតុប៉ះពាល់និងវិធានការកាត់បន្ថយ

ហានិភ័យ និងហេតុប៉ះពាល់នៃទីតាំងដែលមានស្រាប់

ក្រោមសេណារីយ៉ូ "មិនធ្វើអ្វីទាំងអស់" ទីលានចាក់សំរាមក្នុងខេត្តសៀមរាបកំពង់ស្ពឺនិងកណ្តាលនឹងបន្តបង្កហានិភ័យដល់បរិស្ថានសង្គមនិងសុខភាពសាធារណៈយ៉ាងធ្ងន់ធ្ងរដល់កម្មករសហគមន៍និងបរិស្ថានជុំវិញ។ សរុប មកគម្រោងនេះត្រូវបានគេរំពឹងថានឹងផ្តល់អត្ថប្រយោជន៍ដល់ប្រទេសនិងប្រជាជនតាមរយៈការកាត់បន្ថយការបំពុលនិងការការពារបរិស្ថានជាមួយនឹងអត្ថប្រយោជន៍បរិស្ថាននិងសង្គមជាវិជ្ជមានយ៉ាងច្រើន។ កង្វល់ផ្នែកបរិស្ថាន និងសង្គមដែលមានស្រាប់នៅតំបន់គម្រោងអាទិភាពនៃខេត្តសៀមរាបកំពង់ស្ពឺនិងកណ្តាលរួមមានដូចខាងក្រោម៖

តារាង៦៖ កង្វល់បរិស្ថានសុខភាពសង្គមនិងសាធារណៈនៅកន្លែងចាក់សំរាម ដែលមានស្រាប់

<p>បរិស្ថាន</p>	<ul style="list-style-type: none"> • គ្មានទីតាំងណាមួយដែលមានស្រាប់នៅក្នុងខេត្តសៀមរាបកំពង់ស្ពឺនិងកណ្តាលអនុលោមតាមហេដ្ឋារចនាសម្ព័ន្ធនិងស្តង់ដារនៃទីលានចាក់សំរាមអនាម័យអប្បបរមាជាតិនិង/ឬអន្តរជាតិទេ។ • ទីលានដែលមិនមានស្រទាប់ការពារបែបបច្ចេកទេសវិស្វកម្មការប្រមូលទឹកស្អុយពីសំរាមប្រព័ន្ធបង្ហូរនិងការប្រព្រឹត្តិកម្មទឹកសំណល់បានបណ្តាលឱ្យមានផលប៉ះពាល់បរិស្ថាន
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	<p>គុណភាពទឹកលើផ្ទៃនិងក្រោមដីនិងដីតាមរយៈការបញ្ចេញទឹកស្អុយពីសំរាមដែលមិនបានត្រួតពិនិត្យនិងមិនបានធ្វើប្រព្រឹត្តិកម្ម។</p> <ul style="list-style-type: none"> • កង្វះគម្របកម្រិតមធ្យម និងការបិទបាំងនិងការបិទរណ្តៅសំរាមដែលពេញប៉ះពាល់ដល់គុណភាពខ្យល់និងបរិស្ថានជុំវិញតាមរយៈក្លិនការបញ្ចេញGHG មានរុយនិងសំរាមប៉ោងតាមខ្យល់។ • អគ្គិភ័យកើតឡើងជាទូទៅតាមរយៈការខ្វះការគ្រប់គ្រងទីលានចាក់សំរាមអោយបានត្រឹមត្រូវ។នេះវាប៉ះពាល់ដល់គុណភាពខ្យល់ម្តងទៀត។ក្លិនឆ្ងល់និងផ្សែងគឺជាបញ្ហាធ្ងន់ធ្ងរដែលមិនអាចគ្រប់គ្រងបាន។ • ផ្លាស្ទិកមានប្រហែល១០% នៃសំរាមសរុបទន្លេមេគង្គជាទន្លេមួយក្នុងចំណោមទន្លេដែលមានការបំពុលច្រើនជាងគេនៅទូទាំងពិភពលោក។រាជធានីភ្នំពេញជាប្រភពដ៏សំខាន់មួយនៃការបំពុលនេះ និងផលប៉ះពាល់នៃការបំពុល ដោយផ្លាស្ទិកវារាំងស្ទះលំហូរទឹកសំណល់។វាក៏បណ្តាលឱ្យមានការបំពុលខ្យល់នៅក្នុងករណីមានភ្លើងឆេះនិងប៉ះពាល់ដល់ប្រព័ន្ធអេកូឡូស៊ី។សកម្មភាពកែច្នៃឡើងវិញមានភស្តុតាងសម្រាប់តែជំរុញផ្លាស្ទិកដបផ្លាស្ទិកនិងកំប៉ុងអាលុយមីញ៉ូមប៉ុណ្ណោះ។ការកែច្នៃសំរាមក្នុងក្រុងស្ទើរតែគ្មាន។ • ការចាក់សំណល់គ្រោះថ្នាក់ដោយមិនមានការចាត់ចែងត្រឹមត្រូវវាត្រូវបានគ្រប់គ្រងដោយច្បាប់និងបទប្បញ្ញត្តិប៉ុន្តែជាក់ស្តែងមិនត្រូវបានអនុវត្តទេ។សំរាមវេជ្ជសាស្ត្រត្រូវឱ្យបោះចោលដាច់ដោយឡែកពីគេ។ទាំងនេះជះឥទ្ធិពលលើកន្លែងចាក់សំរាមទាំងគុណភាពទឹកនិងផ្តល់ហានិភ័យដល់សុខភាពសាធារណៈ។អ្នកភូមិជាធម្មតាពឹងផ្អែកលើទឹកក្រោមដីឬទឹកលើដីហើយការបំពុលទឹកប៉ះពាល់ដល់សុខភាពនិងសុវត្ថិភាពសហគមន៍។ • សំលេងរំខាននិងការបំពុលកើតឡើងពីស្ថានីយ៍ផ្ទេរដែលគ្រប់គ្រងមិនបានល្អ (TPS) ជាពិសេសនៅក្នុងខេត្តសៀមរាបដែលមានបញ្ហាបរិស្ថានដូចគ្នាជាច្រើនដែលបានលើកឡើងនៅកន្លែងចាក់សំរាមនិងពីការដឹកជញ្ជូនសំណល់តាមឡានដឹក។
<p>សង្គម</p>	<ul style="list-style-type: none"> • មិនមានការត្រួតពិនិត្យលើអ្នករើសសំរាមក្រៅផ្លូវការដែលធ្វើការនៅកន្លែងចាក់សំរាមក្នុងខេត្តសៀមរាបកណ្តាលនិងកំពង់ស្ពឺទេ។មិនមានបទប្បញ្ញត្តិដែលធានាសុខភាពនិងសុវត្ថិភាពរបស់ពួកគេទេ។អ្នករើសសំរាមទាំងនេះភាគច្រើនជាស្ត្រីនិងកុមារ។អ្នករើសសំរាមមួយចំនួនរស់នៅលើឬក្បែរកន្លែងចាក់សំរាមហើយទទួលបានប្រាក់ចំណូលចម្បងរបស់ពួកគេពីការរើសសំរាម។ • សហគមន៍ដែលរស់នៅក្បែរកន្លែងចាក់សំរាមនិងតាមបណ្តោយផ្លូវដឹកជញ្ជូនសំណល់ត្រូវបានរងផលប៉ះពាល់ជាប្រចាំដោយការបំពុលពីកន្លែងSWM និងប្រតិបត្តិការរបស់វា។ផលប៉ះពាល់ទាំងនេះរួមមានការបំពុលបរិយាកាសពីការដុតកាកសំណល់និងផ្សែងរថយន្ត។ការបំពុលដោយសំឡេងពីឡានដឹកសំរាមនិងការបំពុលប្រភពទឹក។ • ខ្វះផ្លូវចេញចូលដែលគ្រប់គ្រងបានទៅកាន់តំបន់គ្រោះថ្នាក់នៅកន្លែងចាក់សំរាមដែលអាចបង្កហានិភ័យដល់សុខភាពសុវត្ថិភាពរបស់អ្នករើសសំរាមនិងសមាជិកដទៃទៀតនៃសហគមន៍ជុំវិញ។ • សហគមន៍មានការយល់ដឹងតិចតួចអំពីតួនាទីនិងទំនួលខុសត្រូវរបស់ពួកគេក្នុងការគ្រប់គ្រងសំរាមអោយបានល្អការបែងចែកសំណល់ការកាត់បន្ថយសំណល់និងការកែច្នៃ

	ឡើងវិញ (3R)។ការដុតសំរាមនិងការបោះចោលក្នុងទីធ្លាចំហរនិងទឹកគឺជាការប្រព្រឹត្តិទូទៅ។យុទ្ធនាការផ្សព្វផ្សាយការយល់ដឹងជាសាធារណៈនៅមានកម្រិត។
សុខភាព និងសុវត្ថិភាពសាធារណៈនិងសហគមន៍ និងOHS	<ul style="list-style-type: none"> ប្រតិបត្តិការមិនល្អនៃកន្លែងចាក់សំរាមនិងការដាក់កាកសំណល់មិនល្អបណ្តាលឱ្យមានស្ថានភាពគ្រោះថ្នាក់នៅលើផ្ទៃចាក់សំរាមដែលគំនរសំណល់មិនស្ថិតស្ថេរងាយនឹងដួលរលំបង្កហានិភ័យដល់បុគ្គលិកអនាម័យអ្នករើសសំរាមនិងសហគមន៍ជុំវិញ។ កង្វះការបណ្តុះបណ្តាលការយល់ដឹងនិងការផ្តល់ឧបករណ៍សុវត្ថិភាព (PPE) ធ្វើឱ្យទាំងបុគ្គលិក អនាម័យនិងអ្នករើសសំរាមមានហានិភ័យ។ ការចោលសំរាមខុសច្បាប់ជាពិសេសសំរាមមន្ទីរពេទ្យនៅកន្លែងចាក់សំរាមធ្វើឱ្យសុខភាពនិងសុវត្ថិភាពរបស់កម្មករនិងអ្នករើសសំរាមមានហានិភ័យ។ ស្ថានីយ៍ផ្ទេរនិងឧបករណ៍ដឹកជញ្ជូនដែលដំណើរការមិនល្អបង្កហានិភ័យដល់សុខភាពនិងសុវត្ថិភាពរបស់បុគ្គលិកអនាម័យនិងអ្នករើសសំរាម។

ទោះបីជាគម្រោងនេះនឹងកាត់បន្ថយការបំពុលនិងការពារកែលម្អបរិស្ថានក៏ដោយវាអាចទៅរួចដែលថាផលប៉ះពាល់និងហានិភ័យនៃបរិស្ថាននិងសង្គមដែលអាចកើតមានអាចនៅតែមានកម្រិតខុសៗគ្នាក្នុងអំឡុងពេលសកម្មភាពជាក់លាក់នៃគម្រោង។អនុគម្រោងដែលរំពឹងទុកត្រូវបានពិនិត្យដើម្បីកំណត់នូវសារៈសំខាន់អំពីហានិភ័យបរិស្ថាននិងសង្គមដែលពាក់ព័ន្ធ។ការពិនិត្យនេះត្រូវបានធ្វើឡើងស្របតាមចំណាត់ថ្នាក់ហានិភ័យបរិស្ថាននិងសង្គមរបស់WB ESF ដែលមានហានិភ័យខ្ពស់បង្អួចរួមនិងទាបដោយផ្អែកលើកត្តាពាក់ព័ន្ធមួយចំនួន។

យោងតាមការវិភាគនៃកម្រិតហានិភ័យដែលអាចកើតមាននិងវិធានការកាត់បន្ថយរបស់អនុគម្រោងដែលរំពឹងទុកនៅក្រោមគម្រោងមេសេចក្តីសង្ខេបបឋមនៃហានិភ័យបរិស្ថាននិងសង្គមត្រូវបានរៀបរាប់ក្នុងតារាងទី៧។

តារាង៧៖ សេចក្តីសង្ខេបនៃការវាយតម្លៃបឋមចំពោះកំរិតហានិភ័យបរិស្ថាននិងសង្គម

សកម្មភាព	អត្រាហានិភ័យជាមុន
ការសាងសង់ទីលានចាក់សំរាមថ្មី	ខ្ពស់ (បរិស្ថាន និងសង្គម)
ការសាងសង់ស្ថានីយផ្ទេរ និងបែងចែក	មធ្យម (បរិស្ថាន និងសង្គម)
ការសាងសង់អគារកែច្នៃសម្ភារៈឡើងវិញ	បង្អួច (បរិស្ថាន និងសង្គម)
ការសាងសង់កន្លែង សំអាត ធ្វើដី និងកែច្នៃសំរាមឡើងវិញ	បង្អួច (បរិស្ថាន និងសង្គម)
ការស្តារឡើងវិញ / ការពង្រីកទីលានចាក់សំរាម	ខ្ពស់ (បរិស្ថាន និងសង្គម)
ការបិទកន្លែងសំរាម	ខ្ពស់ (សង្គម)

បរិក្ខារប្រមូលសំរាម សកម្មភាពTA ដូចជាការកសាងសមត្ថភាពការអភិវឌ្ឍន៍គោលនយោបាយសកម្មភាពផ្សព្វផ្សាយការកែលំអរទីក្រុងនៅក្នុងSWM ។ល។	ទាប ការពិនិត្យជ្រើសរើសE&S និងរួមបញ្ចូលនូវហេតុប៉ះពាល់ ដែលជាផ្នែកមួយ នៃ AT (បរិស្ថាននិងសង្គម)
វត្តមានអ្នករើសសំរាម(រួមទាំងកុមារ)	ខ្ពស់ (សង្គម)

ការវាយតម្លៃបរិស្ថាន និងសង្គមជាក់លាក់នឹងត្រូវបានអនុវត្តបន្ទាប់ពីទីលានត្រូវបានជ្រើសរើសហើយព័ត៌មាននិងការរចនាវិស្វកម្ម លម្អិតត្រូវបានកំណត់។នេះនឹងត្រូវបានកំណត់ក្នុងអំឡុងពេលឆ្នាំដំបូងនៃការអនុវត្តគម្រោង។ ការវាយតម្លៃហានិភ័យបឋមនឹងត្រូវបានពិចារណាឡើងវិញនៅដំណាក់កាលនោះផងដែរ។ សម្រាប់ខេត្តសៀមរាបESIA និងESMPបឋមត្រូវបានរៀបចំដើម្បីបញ្ចប់មុនការវាយតម្លៃដោយពិចារណាលើជម្រើសទីតាំងជំនួស កន្លែងចាក់សំរាមដែលមានស្រាប់ទិដ្ឋភាពបរិស្ថាននិងសង្គមនៃការទុកដាក់សំណល់រឹងហេដ្ឋារចនាសម្ព័ន្ធសម្អាតសំណល់រឹងនិងរួមទាំងការវាយតម្លៃសង្គម និងសេដ្ឋកិច្ចសម្រាប់សហគមន៍ដែលរងហេតុប៉ះពាល់ដោយគម្រោងនៅទីលានចាក់សំរាមបច្ចុប្បន្ននិងនៅទីតាំងជម្រើស។ ESIAលម្អិតនឹងត្រូវបានអនុវត្តបន្ទាប់ពីការជ្រើសរើសទីតាំង និងការរចនាលម្អិតត្រូវបានកំណត់ក្នុងអំឡុងពេលឆ្នាំដំបូងនៃការអនុវត្តគម្រោង។

សកម្មភាពជំនួយបច្ចេកទេស

សកម្មភាពជំនួយបច្ចេកទេសនៃគម្រោងនេះរួមមានសមាសភាគទី១និងសមាសភាគទី២។ សកម្មភាពជំនួយបច្ចេកទេសដែលបានស្នើឡើងមិនតម្រូវឱ្យមានការងារសំណង់ស៊ីវិលទេ។ ទោះជាយ៉ាងណាក៏ដោយការបង្កើត គោលនយោបាយនិងបទប្បញ្ញត្តិនៃសំណល់រឹង និងប្លាស្ទិកក្រោមសមាសភាគទី១និងសមាសភាគទី២អាចនាំឱ្យ មានសកម្មភាពដូចជាការលើកកម្ពស់ការកែច្នៃសំណល់ប្លាស្ទិក ដឹកប៉ុស ការកាត់បន្ថយការវេចខ្ចប់ប្លាស្ទិក ការសាងសង់កន្លែងកែច្នៃ ការផ្សព្វផ្សាយផលិតផលជំនួសបច្ចេកវិទ្យាឬផ្សេងៗទៀត។ ហេតុប៉ះពាល់នៃ សកម្មភាពTA ត្រូវបានចាត់ទុកថាជាហានិភ័យទាប។ ក្នុងករណីដែលក្រុមងាយរងគ្រោះណាមួយដូចជាអ្នករើស អេតចាយអាចរងផលប៉ះពាល់។ ផលប៉ះពាល់ទាំងនោះនឹងត្រូវបានវាយតម្លៃដោយផ្អែកលើសកម្មភាពគម្រោង លម្អិត និងការពិគ្រោះយោបល់នឹងតម្រូវអោយមានជាចាំបាច់។

ការវិនិយោគហេដ្ឋារចនាសម្ព័ន្ធ

ការវិនិយោគSWMអាទិភាព ដែលមានគោលដៅ សម្រាប់ថ្នាក់ក្រុង ដែលចូលរួមនឹងត្រូវបានផ្តល់ជូនក្រោមសមាសភាគទី៣។ នេះរួមមានការសាងសង់ហេដ្ឋារចនាសម្ព័ន្ធគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិក សម្រាប់ការប្រមូលការផ្ទេរការប្រព្រឹត្តិកម្មការកែច្នៃឡើងវិញ/និងការចោលសំណល់រឹង និងប្លាស្ទិករួមមានទីលាន ស្ថានីយ៍ផ្ទេរ និងទីតាំងប្រព្រឹត្តិកម្មសំណល់ដូចជាទីតាំងញែក និងទីតាំងកែច្នៃរួមមានផ្លូវចូល ដែលមានសក្តានុពលក៏ដូចជាការ ស្តារឡើងវិញនូវការបំពុលនៅទីលានចាក់សំរាមដែលមានស្រាប់។ ហានិភ័យ និងហេតុប៉ះពាល់ត្រូវបានវាយតម្លៃ សម្រាប់សកម្មភាពក្នុងអំឡុងពេលសាងសង់ និងក្នុងដំណាក់កាលប្រតិបត្តិការ។

ហានិភ័យបរិស្ថាន-ដំណាក់កាលសាងសង់

ហេតុប៉ះពាល់	ពិពណ៌នា	វិធានការដំណោះស្រាយបឋម
គុណភាពខ្យល់	ការងារស៊ីវិលនឹងត្រូវការក្នុងករណីបិទ/ការស្តារ/ការពង្រីកទីលានបច្ចុប្បន្ន អភិវឌ្ឍទីលានថ្មី MRF ជីកំប៉ុស ផ្លូវចូល និងកន្លែងផ្សេងទៀត។ សកម្មភាព សាងសង់អាចបណ្តាលឲ្យមានការបំពុលខ្យល់ជាបណ្តោះមួយរយៈពេល ។	<ul style="list-style-type: none"> •ការត្រួតពិនិត្យគុណភាពខ្យល់នៅតំបន់លំនៅដ្ឋានក្នុងអំឡុងពេលសាងសង់ត្រូវធ្វើនៅនឹងកន្លែង •កំណត់ម៉ោងសាងសង់(ម៉ោងថ្ងៃ) •ធ្វើឱ្យផ្ទៃដែលប៉ះពាល់មានស្ថេរភាព •កាត់បន្ថយសកម្មភាពដែលនាំឲ្យមានភាគល្អិតជាអតិបរមា •បាញ់ទឹកទៅតំបន់ ដែលត្រូវដឹកដឹកចេញចូល និងផ្លូវដី •អភិវឌ្ឍកន្លែងលាងសម្អាតកងឡាន នៅច្រកចូលការដ្ឋាន និងផ្លូវសាធារណៈ ឬផ្លូវចេញពីការដ្ឋានសាងសង់ទីលានចាក់សំរាម •អនុវត្តការត្រួតពិនិត្យល្បឿននៅការដ្ឋាន •រក្សាសមត្ថភាពផ្ទុកគ្រប់គ្រាន់របស់ឡានដឹកទំនិញ និងរបង ដើម្បីចៀសវាងការកំពប់ •គ្របដីដែលស្តុកទុកដោយប្រដាប់គ្របគ្រប់គ្រងសំណឹក •ទុកដាក់ឲ្យត្រឹមត្រូវ ដើម្បីចៀសវាងផលប៉ះពាល់ •អនុវត្តការអនុវត្តការសាងសង់ដ៏ប្រសើរ
សំឡេងរំខាន	ការងារស៊ីវិលនឹងត្រូវការក្នុងករណីបិទ/ការស្តារ/ការពង្រីកទីលានបច្ចុប្បន្ន អភិវឌ្ឍទីលានថ្មី MRF ជីកំប៉ុស ផ្លូវចូល និងកន្លែងផ្សេងទៀត។ សកម្មភាព សាងសង់អាចបណ្តាលឲ្យមានការបំពុលសម្លេងបណ្តោះមួយរយៈពេល។	<ul style="list-style-type: none"> •ជាទូទៅ គេរំពឹងថាសំឡេងរំខាននឹងមិនខ្ពស់គ្រប់គ្រាន់ដែលរំខានដល់ដំណេក ឬរំខានដល់សកម្មភាពធម្មតានោះទេ។ •គេរំពឹងថាសកម្មភាពសំណង់នឹងមិនដំណើរការក្នុងកំឡុងពេលយប់ជ្រៅឡើយ។ ដូច្នេះផលប៉ះពាល់នៅពេលល្ងាចជាមធ្យមនៃសំលេងរំខានជុំវិញនឹងមានតិចតួច។ •បង្កើនប្រសិទ្ធភាពការប្រើប្រាស់ម៉ាស៊ីន និងឧបករណ៍ដែលមានសំលេងរំខានទាប •ក្នុងករណីទទួលបានពាក្យបណ្តឹងពីតំបន់ជិតខាងទាក់ទងនឹងប្រតិបត្តិការ ដែលមាន សម្លេងរំខាន រនាំងការពារអាចត្រូវបានដាក់ •ការងារសាងសង់គួរតែត្រូវបានបញ្ឈប់នៅពេលយប់។

ហេតុប៉ះពាល់	ពិពណ៌នា	វិធានការដំណោះស្រាយបឋម
ក្លិន	ផលប៉ះពាល់ក្លិន នឹងកើតមានឡើង ដែលបង្កការពិការដល់សហគមន៍ជិតខាង ក្នុងអំឡុងពេលអនុវត្តការងារសាងសង់សម្រាប់ការស្តារឡើងវិញនូវទីតាំងដែលមានស្រាប់ ប៉ុន្តែវានឹងត្រូវកាត់បន្ថយយ៉ាងខ្លាំង បន្ទាប់ពីការងារត្រូវបានបញ្ចប់	<ul style="list-style-type: none"> •ការអនុវត្តគម្របសម្រាប់កាកសំណល់នៅកន្លែងចាក់សំរាមដែលមានស្រាប់ សម្រាប់ជម្រើសទំរាំពីរ •ការដំឡើងប្រព័ន្ធប្រព្រឹត្តកម្មខ្ពស់នៅកន្លែងចាក់សំរាម •ប្រព័ន្ធសម្អាតទឹកស្អុយ •ការប្រើប្រាស់ថ្នាំបំបាត់ក្លិន និង/ឬថ្នាំបាញ់រាតត្បាតក្នុងករណីក្លិន គឺជាបញ្ហារ៉ាំរ៉ៃ
សុវត្ថិភាពផ្លូវថ្នល់	ការងារសំណង់ស៊ីវិលនឹងត្រូវទាមទារឱ្យបិទ/ស្អាតឡើងវិញ/ការពង្រីកការចាក់សំរាម ការបង្កើនចរាចរណ៍ជាបណ្តោះអាសន្ននៅការដ្ឋាន	<ul style="list-style-type: none"> •ការត្រួតពិនិត្យយ៉ាងជិតស្និទ្ធ និងការអនុវត្ត បទបញ្ញត្តិផ្លូវថ្នល់ •ការបណ្តុះបណ្តាលសម្រាប់អ្នកបើកបរ •បទប្បញ្ញត្តិពេលពេលវេលាសម្រាប់សកម្មភាពផ្លូវ •ការប្រើប្រាស់ផ្លូវចូលក្រៅតំបន់មានលំនៅដ្ឋាន •ប្រព័ន្ធរាយការណ៍សម្រាប់ប្រជាពលរដ្ឋ
រចនាសម្ព័ន្ធនៃដី	ដីនឹងត្រូវខូចខាតក្នុងកំឡុងពេលធ្វើការជីកកកកាយ ដើម្បីស្តារឡើងវិញនូវទីតាំងដែល មានស្រាប់ ប៉ុន្តែគុណភាពដីទាំងមូលនឹង ប្រសើរឡើងវិញ បន្ទាប់ពីការងារត្រូវបាន បញ្ចប់។ ដីនឹងត្រូវជីកសម្រាប់ការ អភិវឌ្ឍរណ្តៅថ្មី ឬទីលានចាក់សំរាម និងសម្រាប់គម្របរណ្តៅចាស់	<ul style="list-style-type: none"> •តំបន់ដែលត្រូវបានបម្រុងទុកសម្រាប់ការស្តុកដី គួរតែត្រូវបានជ្រើសរើស ដើម្បីកុំឱ្យមាន គម្រូនៃការប្រមូលទឹកលើផ្ទៃដែលមិនអំណោយផលគួរតែត្រូវបានបង្កើតឡើង (ឧទាហរណ៍ ស្រះទឹកដែលនៅនឹង សម្រាប់ រយៈពេលវែង) •ត្រូវប្រាកដថាកម្ពស់របស់ខូច នឹងមិនបង្ក ឱ្យមានផលប៉ះពាល់ដែលមើលឃើញដែលមិនអាចទទួលបានទៅកាន់តំបន់ជាប់គ្នា •ប្រើប្រាស់ដីជីកកកកាយអភិវឌ្ឍន៍កន្លែងចាក់សំរាម និងប្រតិបត្តិការប្រចាំថ្ងៃ៖ ការប្រើប្រាស់គម្របសំរាមប្រចាំថ្ងៃ ឬការប្រើប្រាស់ក្នុងការបង្កើតទំនប់ទឹកសម្រាប់ផ្ទុកកាកសំណល់។ •ប្រើដីជីកហើយ សម្រាប់គ្របដណ្តប់ លើការបិទរណ្តៅចាស់ៗ (ការដាំដុះឡើងវិញ នូវស្រទាប់គម្របចុងក្រោយ) •ដីដែលបានជីកកកកាយនៅតំបន់ជុំវិញផ្ទាល់នៅកន្លែងចាក់សំរាមដែលមានស្រាប់ ត្រូវតែយកគម្រូតាម ដើម្បីវាយតម្លៃពី វិសាលភាពនៃការបំពុល។ ប្រសិនបើ រកឃើញមានមេរោគ វាត្រូវប្រើសម្រាប់តែ ប្រតិបត្តិការប្រចាំថ្ងៃប៉ុណ្ណោះ។

ហេតុប៉ះពាល់	ពិពណ៌នា	វិធានការដំណោះស្រាយបឋម
សំណឹកដី និង ហានិភ័យ ឬ UXOs	ការងារជីកកាយអាចបង្កឱ្យមានសំណឹកដី។ ទោះជាយ៉ាងណាក៏ដោយ នៅពេលដែល បញ្ចប់ការងារ ផលប៉ះពាល់ជាអវិជ្ជមាន នឹងមាន ភាពវិជ្ជមាន ដោយសារវិធានការរក្សា លំនឹងដី នឹងត្រូវធ្វើឡើងក្នុងកំឡុងពេល ស្ដារឡើងវិញនូវទីតាំងដែលមានស្រាប់។ នេះជាហានិភ័យនៃ UXO មិនទាន់ផ្ទុះ ។	<ul style="list-style-type: none"> • ការដំឡើងកម្រាលសំណឹកដីលើកន្លែងស្តុកទុក ប្រសិនបើការបង្រួមផ្ទៃបន្ថែម និង/ឬការបណ្តុះមិនជោគជ័យ • ការពារស្តុកពីការជន់លិច និងការហូរ ដោយដាក់ក្នុងធុង ឬសមមូលនៅជុំវិញខាងក្រៅកន្លែងចាំបាច់ • ការការពារដីផ្នែកខាងលើដែលងាយរងគ្រោះបំផុត • ការការពារបណ្តាញលូ • ការស្ទាបស្ទង់ពី UXOs
ការបាត់បង់ដីខាងលើ	ការបាត់បង់ដីខាងលើ អាចកើតឡើង ក្នុងកំឡុងពេលការងារសាងសង់ ដែលទាក់ទងនឹងការកំណត់ការដ្ឋាន រោងចក្រសម្ភារៈ និងហេដ្ឋារចនាសម្ព័ន្ធ ដែលពាក់ព័ន្ធ	<ul style="list-style-type: none"> • ការស្តុកដីខាងលើនៅកន្លែងស្តុកទុក • ទីតាំងស្តុកដី ដែលរារាំងការស្តុកទុកត្រូវ បានបង្រួមដោយចលនាយានយន្ត ឬកង្វែក • ការបំបែកចេញពីកន្លែងស្តុកដី • គ្មានកន្លែងស្តុកទុក ដែលមានសក្តានុពលសម្រាប់ទឹកជំនន់ • គ្មានកន្លែងផ្ទុកលនៅជិតដងស្ទឹង ហើយអាស្រ័យលើសណ្តានដីក្នុង
គុណភាពទឹក	ការងារសាងសង់ អាចបណ្តោយឱ្យមានការ ចម្លងរោគដល់ទឹកលើដី និងក្រោមដី។ ទោះជាយ៉ាងណាក៏ដោយ ផលប៉ះពាល់ ជាអវិជ្ជមាននឹងមានភាពវិជ្ជមានដោយសារការ ស្ដារឡើងវិញនូវទីតាំងដែលមានស្រាប់ នឹងបញ្ឈប់ការលិចទឹកស្អុយ ដែលមិនបាន សម្អាត និងកាកសំណល់ទឹក	<ul style="list-style-type: none"> • កាត់បន្ថយការរំខាននៃដី • គ្រប់គ្រងការហូរចេញ និងដីល្បាប់ចេញទៅតំបន់ដែលមានការរំខាន • គ្រប់គ្រងការបង្ហូរទឹកនៅតំបន់ដែលមានការរំខាន • គ្រប់គ្រងគម្របដី • នីតិវិធី និងការធានាគុណភាពសំណង់ កំឡុងពេលដំឡើងប្រព័ន្ធវិស្វកម្មbasal, lateral និង top container • ការសម្អាតទឹកស្អុយ
ការគ្រប់គ្រងកាកសំណល់មិនត្រឹមត្រូវ	កាកសំណល់ដែលមានប្រភពដើមផ្សេងៗគ្នា ដែលកើតឡើងក្នុងកំឡុងពេលការងារ សាងសង់ អាចត្រូវបានតម្រៀបរក្សាទុក ជីកជញ្ជូន និងបោះចោលដោយមិនត្រឹមត្រូវ ដែលបង្កឱ្យមានការបំពុលខ្យល់ ដី និងទឹក	<ul style="list-style-type: none"> • ផ្តល់កន្លែងចោលសំរាមជាមួយអាជ្ញាធរមូលដ្ឋាន។ អនុញ្ញាតឱ្យសហគមន៍មូលដ្ឋាន ប្រើប្រាស់ថ្មលើស ដែលទុកចោល បន្ទាប់ពី ប្រើឡើងវិញ • កាកសំណល់ទាំងអស់ដែលចេញពីការដ្ឋានត្រូវបោះចោលស្របតាមបទប្បញ្ញត្តិបរិស្ថានក្នុងតំបន់ និងកន្លែងដែលត្រូវបានអនុម័តដោយអាជ្ញាធរមូលដ្ឋាន។

ហេតុប៉ះពាល់	ពិពណ៌នា	វិធានការដំណោះស្រាយបឋម
		<ul style="list-style-type: none"> • កាកសំណល់គ្រោះថ្នាក់ (ក្រមាកខ្វក់ សំណល់ប្រេង ថ្នាំលាបជាដើម) ត្រូវបោះចោលដូចដែលបានព្រមព្រៀងជាមួយអាជ្ញាធរប្រតិបត្តិ និងអាជ្ញាធរបរិស្ថាន ។ • បុគ្គលិកដែលចូលរួមក្នុងការចាត់ចែងកាកសំណល់ដែលមានគ្រោះថ្នាក់ និងមិនមានគ្រោះថ្នាក់ នឹងត្រូវទទួលបានការបណ្តុះបណ្តាលជាក់លាក់ក្នុងការគ្រប់គ្រងកាកសំណល់ ការសម្អាតកាកសំណល់ និងរក្សាទុក សំណល់។
ការរំខានទេសភាព /ផលប៉ះពាល់ដែលមើលឃើញនិងសោភ័ណភាព	ការស្តារឡើងវិញនូវទីតាំងដែលមានស្រាប់ ត្រូវបានគេរំពឹងថា នឹងបណ្តោយឱ្យមាន ផលប៉ះពាល់ជាវិជ្ជមាន ទៅលើទេសភាព ដែលបច្ចុប្បន្ន ត្រូវបានរំខាននៅក្នុងទីក្រុង ទាំងអស់ ដោយមិនមានការគ្រប់គ្រងកន្លែង ចាក់សំរាម	<ul style="list-style-type: none"> • ការជ្រើសរើសទីតាំងឱ្យបានគ្រប់គ្រាន់ តាមរយៈដំណើរការវាយតម្លៃទីតាំងហ្មត់ចត់ • កំណត់តំបន់សាងសង់ដោយយោងតាមការរចនាវិស្វកម្មលម្អិតដែលបានគ្រោងទុក • កំណត់ទីតាំងខាងក្រៅជាតំបន់នៃជម្រក និងប្រព័ន្ធអេកូឡូស៊ីសំខាន់ៗ • ការត្រួតពិនិត្យវត្តមានប្រភេទសត្វ និងការបំពុល • វិធានការការពារទឹកជំនន់ ប្រសិនបើចាំបាច់
ការរំខានដល់ជីវចម្រុះ / រុក្ខជាតិ និងសត្វ	ការស្តារឡើងវិញនូវទីតាំងដែលមានស្រាប់អាចបណ្តាលឱ្យមានការរំខានជាបណ្តោះអាសន្ន ដល់រុក្ខជាតិ និងសត្វដោយសារតែការ អនុវត្ត ការងារសំណង់	<ul style="list-style-type: none"> • ការជ្រើសរើសទីតាំងឱ្យបានគ្រប់គ្រាន់ តាមរយៈដំណើរការវាយតម្លៃទីតាំងហ្មត់ចត់ • កំណត់តំបន់សាងសង់ដោយយោងតាមការរចនាវិស្វកម្មលម្អិតដែលបានគ្រោងទុក • ប្រព័ន្ធប្រមូល និងសម្អាតទឹកស្អុយ • ការដំឡើងប្រព័ន្ធស្រទាប់ការពារ • កំណត់ទីតាំងខាងក្រៅជាតំបន់នៃជម្រក និងប្រព័ន្ធអេកូឡូស៊ីសំខាន់ៗ • ការត្រួតពិនិត្យវត្តមានប្រភេទសត្វ និងការបំពុល • វិធានការការពារទឹកជំនន់
បេតិកភណ្ឌវប្បធម៌	ផលប៉ះពាល់ដែលអាចកើតមានលើតំបន់បេតិកភណ្ឌវប្បធម៌ ជាពិសេសក្នុងខេត្តសៀមរាប លើមណ្ឌលយដ្ឋានអង្គរ	<ul style="list-style-type: none"> • គ្មានផលប៉ះពាល់លើតំបន់បេតិកភណ្ឌវប្បធម៌ដែលគេស្គាល់ និងវត្ថុដែលត្រូវបានគិតទុក ជាមុន ពីការស្តារឡើងវិញនូវទីតាំងដែល មានស្រាប់ណាមួយឡើយ។ ដើម្បីកំណត់ បន្ថែមដោយ ESIA ជាក់លាក់នូវទីតាំងលម្អិត

ហានិភ័យបរិស្ថាន-ដំណាក់កាលប្រតិបត្តិការ

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
ទឹកស្អុយពីទីលាន	កន្លែងចាក់សំរាម ដែលមានស្រាប់នៅក្នុងខេត្តសៀមរាប កំពង់ស្ពឺ និងកណ្តាលសុទ្ធតែខ្វះប្រព័ន្ធប្រមូល និងប្រព្រឹត្តកម្មទឹកស្អុយ ដូច្នេះហើយទើបធ្វើឲ្យមាន ការបំពុលធ្ងន់ធ្ងរដល់បរិស្ថាន។ គម្រោងនឹងកាត់បន្ថយ ការបំពុលយ៉ាងខ្លាំងដោយសារតែការស្តារឡើងវិញការ/បិទកន្លែង ដែលមានស្រាប់។	<ul style="list-style-type: none"> •ស្រទាប់ការពារ និងប្រព័ន្ធ ប្រមូលទឹកស្អុយ •ការដាក់សំរាម និងគ្របប្រចាំថ្ងៃ •ការកាត់បន្ថយទឹកស្អុយ •អាងប្រព្រឹត្តកម្មទឹកស្អុយ •ធានាការទទួលបានការផ្គត់ផ្គង់ទឹកសុវត្ថិភាព សម្រាប់សហគមន៍ មូលដ្ឋាន •ការត្រួតពិនិត្យគុណភាពទឹក(ក្រោមដី)
ឧស្ម័នចេញពីទីលានចាក់សំរាម	កន្លែងចាក់សំរាម ដែលមានស្រាប់នៅក្នុងខេត្តសៀមរាប កំពង់ស្ពឺ និងកណ្តាលសុទ្ធតែខ្វះប្រព័ន្ធប្រមូល ឧស្ម័ន និងប្រព្រឹត្តកម្ម។ ដូច្នេះហើយទើបធ្វើឲ្យមាន ការបំពុលខ្យល់។ គម្រោងនឹងកាត់បន្ថយការបំពុល ឧស្ម័នយ៉ាងខ្លាំង។	<ul style="list-style-type: none"> •ការប្រមូល និងប្រព្រឹត្តកម្មឧស្ម័ននៅទីលានចាក់សំរាម (ការដុតភ្លើង) •កន្លែងធ្វើជីកំប៉ុស
អេកូឡូស៊ី ទឹកជីវចម្រុះ	ទីតាំងបច្ចុប្បន្នទាំងអស់ត្រូវបានអភិវឌ្ឍ និងប្រតិបត្តិការជាទីលានចាក់សំរាមចំហដោយគ្មានវិធានការណាមួយ ដើម្បីការពារការបំពុលឡើយ។ ទីតាំងដែល មានសក្តានុពលមួយចំនួនស្ថិតនៅក្នុងតំបន់រសៀបនៃសារៈសំខាន់នៃបរិស្ថានខ្ពស់។	<ul style="list-style-type: none"> •ដំណើរការវាយតម្លៃទីតាំងយ៉ាងហ្មត់ចត់ ដើម្បីទប់ស្កាត់ទីតាំងដែលមានទីតាំងស្ថិតនៅតំបន់រសៀប •គ្របសំណល់ប្រចាំថ្ងៃ •ប្រព័ន្ធប្រមូល និងប្រព្រឹត្តកម្មទឹកស្អុយ •ការដំឡើងប្រព័ន្ធស្រទាប់ការពារ •ការកំណត់តំបន់នៃជម្រក និងប្រព័ន្ធអេកូឡូស៊ីសំខាន់ៗ •ការត្រួតពិនិត្យវត្តមានប្រភេទសត្វ និងការបំពុល •វិធានការការពារទឹកជំនន់ •មិនទទួលយកកាកសំណល់គ្រោះថ្នាក់
ក្លិន	ទីតាំងដែលមានស្រាប់នៅក្នុងទីក្រុងទាំងបីបង្កឱ្យមានក្លិនស្អុយយ៉ាងខ្លាំងដោយសារតែប្រតិបត្តិការជាទីលានចាក់សំរាមបើកចំហ។ សកម្មភាពគម្រោងនឹងកាត់បន្ថយក្លិន យ៉ាងខ្លាំង	<ul style="list-style-type: none"> •គ្របកាកសំណល់ប្រចាំថ្ងៃ •ការដំឡើងប្រព័ន្ធប្រមូល និងប្រព្រឹត្តកម្មឧស្ម័ន •សម្ភារៈស្តារឡើងវិញ និងកន្លែងធ្វើជីកំប៉ុស

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
	បើប្រៀបធៀបទៅនឹងស្ថានភាពបច្ចុប្បន្ន។	
សំរាមគ្រោះថ្នាក់	បច្ចុប្បន្ននេះ មិនមានការត្រួតពិនិត្យលើការចោលសំណល់ គ្រោះថ្នាក់នៅទីលានដែលមានស្រាប់នោះទេ។ ការកាត់បន្ថយហានិភ័យនៃការចោលសំណល់គ្រោះថ្នាក់ លាយឡំជាមួយសំណល់ក្រុង តាមរយៈការកែលម្អនូវប្រតិបត្តិការ និងបទប្បញ្ញត្តិ	<ul style="list-style-type: none"> • បទប្បញ្ញត្តិក្រុងសម្រាប់ប្រតិបត្តិការចាក់សំរាម ដើម្បីផ្តល់បញ្ជី សំណល់ដែលអាចទទួលយកបាន និងមិនអាចទទួលយកបាន។ សំណល់ដែលមិនអាចទទួលយកបានចាំបាច់ត្រូវហាមឃាត់យ៉ាងតឹងរ៉ឹងពីការចូល • ការយល់ដឹងដើម្បីជៀសវាងការលាយឡំនៃសំណល់ • កម្មករទាំងអស់នឹងត្រូវបានផ្តល់ឧបករណ៍ការពារ ការបណ្តុះបណ្តាលក្នុងការគ្រប់គ្រងសំណល់ និងការត្រួតពិនិត្យយ៉ាងតឹងរ៉ឹង • រៀបចំផែនការឆ្លើយតបបន្ទាន់
ផលប៉ះពាល់នៃការមើលឃើញ និងសោភ័ណភាព	ការស្តារឡើងវិញនូវទីតាំងបច្ចុប្បន្ន និងវិធានការកាត់ បន្ថយ រួមទាំងការគ្របដណ្តប់កាកសំណល់ប្រចាំថ្ងៃ នឹងនាំទៅរកការកែលម្អសោភ័ណភាពបច្ចុប្បន្នជាពិសេសផលប៉ះពាល់ដល់សហគមន៍ក្បែរនោះ។	<ul style="list-style-type: none"> • គ្របសំណល់ប្រចាំថ្ងៃ • ដើមឈើបាំងខ្យល់ • របងហ៊ុមពីទូទៅតាំង និងតំបន់ទ្រនាប់
ផលប៉ះពាល់បន្ទាប់ពីការបិទទីលានចាក់សំរាម	ក្នុងករណីមានការអភិវឌ្ឍន៍កន្លែងចាក់សំរាមថ្មី កន្លែងចាក់សំរាមដែលមានស្រាប់ត្រូវបានចាត់ទុកថាជាកន្លែងពាក់ព័ន្ធ ហើយនឹងត្រូវការបិទឱ្យបានត្រឹមត្រូវ។ ផលប៉ះពាល់បរិស្ថានសំខាន់ៗដោយសារគ្មានការ បិទត្រឹមត្រូវ រួមមានការបំពុលបរិយាកាស ដោយសារការបន្តដំណើរការរលួយនៃកាកសំណល់ហានិភ័យនៃការឆេះ រាងកាយ និងការបំពុលទឹកក្រោមដីដោយសារទឹកស្អុយដែលមិនបានប្រមូល។	<ul style="list-style-type: none"> • ការគ្របបិទចុងក្រោយ៖ ការគ្របបិទចុងក្រោយគឺជាគន្លឹះក្នុងការកាត់បន្ថយ និងការពារការ បំពុលទឹកពីទឹកលេចចេញ ក៏ដូចជាកាត់បន្ថយផលប៉ះពាល់ក្លិន ការបង្កើតឧស្ម័ននៅកន្លែងចាក់សំរាម ផលប៉ះពាល់ដែលមើលឃើញ ការបង្កជំងឺ និងការការពារការបាក់នៃជម្រាល។ • ប្រព័ន្ធគម្របចុងក្រោយត្រូវបានដំឡើងជាបន្តបន្ទាប់តាមពេលវេលា បន្ទាប់ពីកាកសំណល់ត្រូវបានដាក់ដល់កម្រិតចុងក្រោយរបស់វាលើកឡើងនីមួយៗ ឬផ្នែករបស់វា។ • ការបង្កើតស្រទាប់ការពារមិនជ្រាបទឹក អាចត្រូវបានពិចារណា ក៏ដូចជាការអភិវឌ្ឍន៍ប្រភពទឹកជំនួសសម្រាប់លំនៅដ្ឋានជុំវិញ • វិធានការកាត់បន្ថយការបញ្ចេញទឹកលេចចេញដែលនៅសេសសល់ បន្ទាប់ពីការបិទនឹងអាស្រ័យលើការវាយតម្លៃលម្អិតលើការបំពុលទឹកក្រោមដី ការជ្រាបចូលទៅដី និងផលប៉ះពាល់លើតំបន់លំនៅដ្ឋានណាមួយដែលនៅជិតនោះ

ហានិភ័យសង្គម-មុន និងកំឡុងដំណាក់កាលសាងសង់

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
ការតាំងទីលំនៅថ្មី ការប្តូរប្រភពសេដ្ឋកិច្ច និងផលប៉ះពាល់ដល់ជីវភាពរស់នៅ	នេះអាចរួមបញ្ចូលផលប៉ះពាល់លើអ្នករើសសំរាមនៅកន្លែងចាក់សំរាមដែលមានស្រាប់។ ផលប៉ះពាល់លើជីវភាពរស់នៅរបស់កុមារផលប៉ះពាល់លើម្ចាស់ដី ផលប៉ះពាល់លើសហគមន៍ក្បែរនោះ។ អ្នករើសសំរាម ជាពិសេសកុមារអាយុក្រោម ១៤ឆ្នាំ មិនអាចត្រូវបានអនុញ្ញាតឱ្យចូលរួម ក្នុងសកម្មភាពកែច្នៃសំរាម ហើយនឹងត្រូវការ ការគាំទ្រការស្តារជីវភាពរស់នៅ និងជម្រើស គាំទ្រជីវភាពបន្ថែម	<ul style="list-style-type: none"> • ផលប៉ះពាល់ជាទូទៅលើអ្នករើសសំរាម នឹងផ្តល់ភាពវិជ្ជមាន ដោយសារអ្នករើសសំរាម នឹងបន្តទទួលបានធនធានកាកសំណល់ក្រោមលក្ខខណ្ឌការងារសុខភាព និងសុវត្ថិភាព ដែលប្រសើរឡើង។ • ការពិគ្រោះយោបល់ដ៏ល្អជាមួយសហគមន៍ជិតខាងអ្នករើសសំរាម និងមនុស្សដែលមាន សក្តានុពលផ្សេងទៀតដែលរងផលប៉ះពាល់នៅទីតាំងដែលមានសក្តានុពល • ការអភិវឌ្ឍន៍ផែនការតាំងទីលំនៅថ្មី និងផែនការ ស្តារជីវភាព និងការត្រួតពិនិត្យការអនុវត្ត • ជម្រើសទីលានអាទិភាពដែលធានាបាននូវការបន្តចូលទៅកាន់ធនធានកាកសំណល់សម្រាប់អ្នករើសសំរាម • ក្នុងករណីបាត់បង់លទ្ធភាពទទួលបានធនធានសំណល់ ការផ្តល់ជំនួយស្តារជីវភាពរស់នៅត្រូវបានបង្កើត • ជម្រើសគាំទ្រការចិញ្ចឹមជីវិតសម្រាប់អ្នករើសសំរាមរបស់កុមារ ស្របតាមក្របខណ្ឌគោល នយោបាយការតាំងទីលំនៅថ្មី និងក្របខណ្ឌការស្តារជីវភាពរស់នៅ និង ESF ។ • ធានាឱ្យមានការយល់ដឹងអំពីឱកាសការងារនៅក្នុងសហគមន៍ជុំវិញ និងការពិចារណាសម្រាប់ ក្រុមងាយរងគ្រោះ តាមរយៈសកម្មភាពគាំទ្រ ជីវភាពបន្ថែមទៀត។
ឱកាសការងារបណ្តោះអាសន្ន	ការស្តារឡើងវិញនិងការពង្រីកការងារនៅកន្លែងចាក់សំរាមដែលមានស្រាប់ និងការសាងសង់កន្លែងចាក់សំរាមផ្សេងទៀតអាចផ្តល់ឱកាសការងារសម្រាប់អ្នករស់នៅក្នុងភូមិ និងទីប្រជុំជនក្បែរនោះ។ នៅគ្រប់ករណីទាំងអស់ ប្រជាពលរដ្ឋដែល រស់នៅក្នុងតំបន់នោះបានចូលរួមក្នុងវិស័យកែច្នៃឡើងវិញក្នុងមូលដ្ឋានរួចហើយ។	<ul style="list-style-type: none"> • ដើម្បីបង្កើនអត្ថប្រយោជន៍ការងារសម្រាប់ប្រជាជនក្នុងតំបន់ កិច្ចខិតខំប្រឹងប្រែងគួរតែត្រូវបាន ធ្វើឡើងដើម្បីធានាថាឱកាសទាំងនេះត្រូវបាន ស្គាល់ដល់ប្រជាជនក្នុងតំបន់ ដែលអាច រួមមានការចែករំលែកព័ត៌មាន ប្រកបដោយ តម្លាភាពអំពីឱកាសការងារនាពេលខាងមុខ និងការស្វែងរកឱកាសដើម្បីលើកទឹកចិត្តដល់ ក្រុមហ៊ុនក្នុងស្រុកដែលជាផ្នែកមួយ នៃការចូលហ៊ុនគ្នាសម្រាប់ការដេញថ្លៃសាងសង់។

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
សុខភាព និងសុវត្ថិភាពសហគមន៍	ការស្តារឡើងវិញ និងការពង្រីកការងារនៅ កន្លែងចាក់សំរាម និងការសាងសង់កន្លែង ចោលសំរាមផ្សេងទៀត អាចជះឥទ្ធិពល អវិជ្ជមានដល់សុខភាព និងសុវត្ថិភាព សហគមន៍ជិតខាង រួមទាំងផលប៉ះពាល់នៃ លំហូរចូលនៃកម្មករ ភាពកាន់តឹងលើ ធនធានក្នុងស្រុកនិងអមដោយហានិភ័យចំពោះ SEA/SH ។	<ul style="list-style-type: none"> • ត្រួតពិនិត្យការងារសាងសង់ និងកាតព្វកិច្ចច្បាស់លាស់ និងក្រមសីលធម៌សម្រាប់ក្រុមហ៊ុន • ព័ត៌មានទៀងទាត់អំពីវឌ្ឍនភាព និងការអនុលោមតាមបរិស្ថាន និងសង្គមសម្រាប់សហគមន៍មូលដ្ឋាន • ការបង្កើតប្រព័ន្ធដោះស្រាយបណ្តឹងសារទុក្ខច្បាស់លាស់ • ត្រួតពិនិត្យនីតិវិធីគ្រប់គ្រងការងារ • ទំនាក់ទំនងព័ត៌មានអំពីម៉ោងសាងសង់ជាមួយប្រជាជនក្នុងតំបន់ • ត្រួតពិនិត្យការអនុវត្តបទប្បញ្ញត្តិ OH&S និងក្រមសីលធម៌នៅលើ SEA/SH • សវនាការសាធារណៈ និងការពិគ្រោះយោបល់ដ៏ល្អ។ • ការដាក់កំហិតពីការចូលទៅកាន់ការដ្ឋានសំណង់

ហានិភ័យសង្គម-កំឡុងពេលប្រតិបត្តិការ

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
សុខភាព និងសុវត្ថិភាពសហគមន៍ និងសុខភាព និងសុវត្ថិភាពការងារ	ការស្តារឡើងវិញ និងការពង្រីកកន្លែងចាក់សំរាមបច្ចុប្បន្នទៅជាកន្លែងចាក់សំរាមវិស្វកម្ម ឬការបិទទីតាំងដែលមានស្រាប់ និងការអភិវឌ្ឍន៍ទីតាំងថ្មី នឹងកាត់បន្ថយយ៉ាងធំធេង នូវហានិភ័យសុខភាព និងសុវត្ថិភាពដែលទាក់ទងនឹងការបំពុលសម្រាប់សហគមន៍ និងកម្មករជិតខាង ដោយសារ ការអនុវត្ត OHS ដែលបានធ្វើ អោយប្រសើរឡើង។	<ul style="list-style-type: none"> • ការអនុវត្តប្រតិបត្តិការចាក់សំរាមបែបទំនើប និងការដាក់បញ្ចូលសូចនាករការអនុវត្តសម្រាប់ការគ្រប់គ្រងកន្លែងចាក់សំរាម និងការអនុវត្តប្រតិបត្តិការក្នុង កិច្ចសន្យា ឧទាហរណ៍ដូចជា ការបង្រួមកាកសំណល់ និងការគ្របដីប្រចាំថ្ងៃ នឹងកម្រិតសក្តានុពលសម្រាប់ ការអភិវឌ្ឍន៍ប្រជាជនរស់នៅដែលមានសត្វល្អិត និងសត្វចង្រៃ។ • ការប្រមូលឧស្ម័ន និងដឹកប៉ុសដើម្បីមួយផ្នែកធំនៃ ប្រភាគសរីរាង្គចេញ • ការប្រមូល និងការប្រព្រឹត្តកម្មទឹកស្អុយ • ប្រព័ន្ធស្រទាប់ និងគម្រសំណល់ប្រចាំថ្ងៃ និងក្នុងករណីបិទគម្របកាកសំណល់ចុងក្រោយ • ហ៊ុមព័ទ្ធទីតាំង នីតិវិធីចុះឈ្មោះ • សមាហរណកម្មនៃអ្នករើសសំរាមទៅក្នុងកន្លែងស្តារសម្ភារៈសំណល់ និងដឹកប៉ុស តាមរយៈការផ្តល់ PPE ការបណ្តុះបណ្តាល និងការប្រកាន់ខ្ជាប់នូវនីតិវិធី OHS • ការផ្តល់ PPEs និងការបណ្តុះបណ្តាលសមស្រប • ការពិនិត្យសុខភាព

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
		<ul style="list-style-type: none"> • ការផ្គត់ផ្គង់ទឹកស្អាតដល់សហគមន៍ជុំវិញ • ផ្កាឈូកដូចទឹក អាងបោកគក់ បង្គន់អនាម័យ បន្ទប់ ផ្លាស់សំលៀកបំពាក់។ល។នៅទីលាន
ឱកាសការងារ	<p>គម្រោងនេះត្រូវបានគេរំពឹងថានឹងបង្កើតឱកាសការងារជាពិសេសសម្រាប់ភូមិនៅជិតកន្លែងចាក់សំរាម។នេះអាចរួមបញ្ចូលការងារសម្រាប់ប្រតិបត្តិការប្រចាំថ្ងៃនៅកន្លែងចាក់សំរាមការតម្រៀបសំណល់នៅកន្លែងប្រមូលយកមកវិញនូវសម្ភារៈកន្លែងធ្វើដឹកជញ្ជូនការប្រមូលនិងផ្ទេរផ្សេងទៀតតាមខ្សែសង្វាក់គ្រប់គ្រងកាកសំណល់។ប្រតិបត្តិការនឹងទាមទារការងារសម្រាប់សាវតា និងគុណវុឌ្ឍិផ្សេងៗ រួមទាំងសម្រាប់អ្នកក្រីក្រដែលមានជំនាញទាប និងមធ្យម</p>	<ul style="list-style-type: none"> • ធានាឱ្យមានការយល់ដឹងអំពីឱកាសការងារនៅក្នុងសហគមន៍ជុំវិញ និងការពិចារណាសម្រាប់ក្រុមក្រីក្រនិងងាយរងគ្រោះ។ • ការចែករំលែកព័ត៌មានប្រកបដោយតម្លាភាពអំពីឱកាសការងារដែលបានបង្កើត ជាពិសេសក្នុងតំបន់ • ស្វែងរកប្រភពផ្គត់ផ្គង់ និងសម្ភារៈក្នុងស្រុកនៅពេលណាដែលអាចធ្វើទៅបាន
ផលប៉ះពាល់ទៅលើតម្លៃអចលនទ្រព្យ	<p>គម្រោងនេះបានគិតទុកជាមុននូវវិធានការជាច្រើនដែលនឹងជះឥទ្ធិពលជាវិជ្ជមានដល់តម្លៃដីជុំវិញកន្លែងចាក់សំរាមដែលមានស្រាប់។</p>	<ul style="list-style-type: none"> • ដំណើរការជ្រើសរើស និងកន្លែងចាក់សំរាមសមស្រប • ការកាត់បន្ថយផលប៉ះពាល់បរិស្ថាន និងសង្គមបានត្រឹមត្រូវនៃការសាងសង់ និងប្រតិបត្តិការ ដោយកាត់បន្ថយផលប៉ះពាល់ ដល់សហគមន៍ជិតខាង និងអមជាមួយតម្លៃអចលនទ្រព្យ • ហ៊ុមព័ទ្ធ និងតំបន់ការពារដែលមានវិធានការប្រឆាំងនឹងផលប៉ះពាល់ដែលមើលឃើញ (រូបបាំងជាដើម ឈើ (Tree screens))

EXECUTIVE SUMMARY

Overview of the Environmental and Social Management Framework (ESMF)

The Environmental and Social Management Framework (ESMF) serves as the main instrument to assess and manage the environmental and social risks and impacts of the Cambodia Solid Waste and Plastics Management Project (the Project). Environmental and social management framework (ESMF) is an instrument that examines the risks and impacts when a project consists of a program and/or series of subprojects, and the risks and impacts cannot be determined until the program or subproject details have been identified. The ESMF examines the risks and impacts and contains a preliminary management plan to reduce and mitigate the impacts. The ESMF will guide the (a) preparation of site-specific Environmental and Social Impact Assessments (ESIAs) and Environmental and Social Management Plans (ESMPs) for each sub-project once the locations are identified alongside the detailed design for the infrastructure investments; and (b) preparation of related social risk management instruments that may be needed for each sub-project including the following documents: Detailed Resettlement Plans and Indigenous Peoples Plans.

Project Description

The Project aims to improve solid waste and plastic management in Cambodia. The Project aims to create selected municipalities throughout Cambodia that can: (i) demonstrate improved solid waste management performance adaptable and scalable to other municipalities in the country, (ii) support solid waste management policy and legislation, and (iii) support capacity development at both the national and the municipal levels. The project will include support for improvements in the waste collection, transport, and recovery, treatment, recycling, disposal and in cost recovery by improvement of waste fee collection. It will also support improved monitoring and enforcement of private waste management companies, information availability and reliability, and citizen engagement and public information. The project will also support plastic policies and improved plastics management to reduce the amount of waste that needs to be collected or landfilled, increase recovery and recycling, and contribute to reduced plastic leakage to the waterways and ocean.

At the local level, it will support the implementation of Cambodia's Sub-decree 113 as specified in Article 9 – "it is the municipal and district administration that has the role to manage municipal solid waste within their jurisdiction." The Project will focus on supporting the improvement of solid waste collection services, the improvement of waste fee collection and cost recovery, as well as increasing public awareness and citizen engagement through technical assistance prior to undertaking the infrastructure investments. The capacity building and technical assistance will focus on the improvement of the performance of the private sector through the provision of transaction advisory services. This is consistent with good international practice of solid waste being a service managed by the local government to ensure citizens can provide direct feedback for the services.

The Project consists of three main components and an emergency component that will be implemented over a six-year period, namely:

- Component 1:** Development and Strengthening of National Legislative, Regulatory, Policy, and Institutional Frameworks for Solid Waste and Plastic Management
- Component 2:** Integrated Solid Waste and Plastic Management, Planning, Monitoring and Capacity Building for the Participating Municipalities
- Component 3:** Solid Waste and Plastic Management Infrastructure
- Component 4:** Contingent Emergency Response

Component 1: Development and Strengthening of National Legislative, Regulatory, Policy, and Institutional Frameworks for Solid Waste and Plastic Management

Carry out a program of activities aimed at developing and strengthening the legislative, regulatory, policy, and institutional frameworks related to solid waste and plastic management, including: (a) development and strengthening of laws, regulations, sub-decrees, policies, and guidelines related to solid waste management with respect to, among others (i) waste classification, planning, reporting, monitoring, enforcement, rural and community waste collection, and database management, and (ii) cost calculation of waste fees, and waste accounting and financial systems; (b) development and strengthening of relevant laws, regulations, sub-decrees, policies, and guidelines related to plastic management to increase reduction, reuse and recycling of plastics; and (c) capacity building of relevant institutions, including the Ministry of Environment (MOE), the Ministry of Interior (MOI), and the Ministry of Public Works and Transportation (MPWT).

Component 2: Integrated Solid Waste and Plastic Management, Planning, Monitoring and Capacity Building for the Participating Municipalities

Carry out a program of activities aimed at building the capacity of the Participating Municipalities for solid waste and plastic management, including through support with: (a) waste and plastic management planning, transaction advisory services, and designing of performance indicators for waste management contracts; (b) development of waste information, financial, and geospatial systems for (waste) fee collection to increase cost recovery; and (c) operational management, and public outreach, awareness, education and citizen engagement activities.

Component 2 is for municipalities/districts that meet the agreed eligibility criteria to (a) reform the SWM sector in line with Cambodia's Sub-decree 113 on Management of Municipal solid waste, where municipalities take responsibility for solid waste management; (b) reform solid waste operations, specifically revise contracts with private sector waste collector companies to include key performance indicators, operational plans, and reporting requirements in the contracts together with establishment of relevant payments for these services in the contracts; (c) agree that the municipality monitors the private solid waste sector and that government takes responsibility for the waste fee collection for households and businesses that will be used to pay the private waste companies for the waste collection, transport, treatment, and disposal systems and (c) develop an (operational) cost recovery plan for solid waste services.

Component 3: Solid Waste and Plastic Management Infrastructure

Carry out a program of activities for the Participating Municipalities and select districts, including: (a) preparation and construction of solid waste and plastic management infrastructure for proper collection, transfer, treatment/recycling, and disposal of solid wastes

and plastics, including landfills, transfer stations, and intermediate waste treatment facilities such as material recovery facilities and composting facilities, including potential access roads as well as remediation of contamination of existing dumpsites and (b) development of relevant guidance documents, such as landfill related regulations, landfill design and operation standards, and contract templates and manuals for landfill management and operation.

Eligibility criteria for participation for Component 3 are based on: (i) the requirement of cost-effective solid waste treatment and disposal infrastructure for which more than 100,000 population equivalent waste generators are needed, (ii) willingness for cost recovery for at least operational costs of the landfill disposal and landfill management contracts with performance indicators and payments for operation and management of waste disposal; and (ii) land available for solid waste landfills and other treatment infrastructure, in line with WB ESF requirements.

The sanitary landfill investments are based on modern landfill including all applicable infrastructure, such as (i) Landfill cells and extension area with sufficient capacity for a 10-year to 20-year lifespan, given potential expansion; (ii) bottom sealing system; (iii) internal road network; (iv) leachate capture and recirculation and treatment system; (v) landfill gas capture system; (vi) entrance and general administration; (vii) weighbridge; and (viii) garage and workshop.

Material Recovery Facility, Transfer Stations and Composting Plants are also planned for the following purposes:

- a. Recovery and reuse of recyclable materials
- b. Generation and continuation of waste-based livelihoods
- c. Reduction in volume of waste being disposed in landfills
- d. Reduction in greenhouse gas (GHG) generation

Recyclables are sorted at a transfer station, where these may be transferred to off-takers so that disposal sites will only receive non-recoverable wastes. Waste-pickers will be integrated in the material recovery facility to continue to have access to the recyclables through construction of a safe materials recovery facility (MRF) that will provide waste-pickers safer working conditions and will prevent them from potential health risks.

Recyclable materials that may be sorted and recovered include the following:

- a) Cardboard, b) Paper, c) PET bottles, d) Plastics, e) Glass, f) Nonferrous materials, g) Rubber/leather, h) Wood, i) Aluminum can, j) Other materials

Sortation will depend on the quantity, particle size, and presence of impurities of these materials. Recovered materials will be sent to recyclers and the rest will be sent for final disposal at the landfill.

Composting plants will also serve to help in reducing waste volume and GHG emissions and create waste-based livelihoods and the production of compost for parks, gardens, and cover for landfills and depending on the quality potentially agriculture.

Component 4: Contingent Emergency Response

This zero-dollar component is designed to provide immediate response to an Eligible Crisis or Emergency, as needed.

A CERC Manual is under preparation that will become part of the Project Operational Manual for the Project. Once the CERC is triggered and Environmental and Social Management Framework Addendum will be prepared to supplement the Project's ESMF and an Environmental and Social Management Plan.

Implementation arrangements

The Project will be implemented through Component Management Units (CMU). The Ministry of Environment will be the lead Ministry of Component 1. The Ministry of Interior will be the implementing agency for the Component 2. The Ministry of Public Works and Transport will be the implementation agency for Component 3.

As part of Component Management Unit-2, **each municipality participating in the project, will establish a Municipal Implementation Unit** as an operational Solid Waste Management/Urban Service unit for the implementation at local level.

Selection of Eligible Municipalities and Provinces

A thorough selection process for identifying preliminary eligible municipalities and provinces was carried out jointly with the Ministry of Economy and Finance (MEF), MOI, MOE, and MPWT to select preliminary eligible municipalities. Eligibility for selection will be confirmed as part of Project implementation based on the selection criteria. Every participating municipality receiving investment financing will first be supported with the technical assistance support and capacity building. As preparation of investment for Component 3, all project site-specific E&S assessments and plans will be prepared for the sub-projects in a proportionate manner considering the project's risks and impacts due to low to high environmental and social risk impacts that may result from the activities such as investing in infrastructure and landfill rehabilitation under the component. During the preparation of the ESIAs/ESMPs, environmental and social impacts and mitigation measures should be presented and as well as consulted with the project-affected groups/individuals. The Project should aim to avoid, minimize and/or mitigate these impacts and make the design process inclusive to the needs and concerns of those who will be affected. Under Component 2, the preliminary eligible municipalities of Siem Reap, Kampong Speu, Kandal, Battambang, and Sihanoukville are expected to receive technical assistance and capacity-building financing. As for Component 3, the preliminary eligible municipalities of Siem Reap, Kampong Speu, and Kandal are expected to receive waste management and infrastructure investment financing.

Key Annexes to the ESMF

Resettlement Policy Framework (RPF). There are potential land acquisition and/or livelihood impacts to occur during the civil works and construction activities under Component 3. Many of the sub-projects will undergo rehabilitation for the continued utilization and/or closure and decommissioning of the existing dump sites which could require additional land for expansion. With the presence of waste-pickers, nearby communities, vulnerable groups, and other stakeholder groups, a Resettlement Policy Framework has been prepared to consider the potential impacts on land, livelihood and source of income due to sub-projects that would cause physical or economic displacement due to land acquisition or impacts due to restriction

of access to resources (such as waste resources). As an integral part of this ESMF, the RPF is presented as Annex G and includes guidelines on addressing and mitigating land acquisition and livelihood impacts.

Indigenous Peoples Planning Framework (IPPF). At the current stage of the Project, the specific and technical details of the subprojects are unknown and will be identified during the project implementation stage; thus, there may still be the possibility of the presence of indigenous peoples in the vicinity of the subprojects. An Indigenous Peoples Planning Framework (IPPF) has been prepared to develop site specific Indigenous Plans in case Indigenous Peoples are identified in each of the subproject's site-specific Environmental and Social Impact Assessment (ESIA). As an integral part of this ESMF, the IPPF is presented as Annex H to serve as a basis in the preparation of the Indigenous Peoples Plan (IPP) of each subproject, if identified as necessary.

Labor Management Procedures (LMP). The Project will be engaging different types of workers whose expertise will be needed for the project implementation activities, capacity building and institutional strengthening across all project components. Labor Management Procedures (LMP) have been prepared to ensure that all project workers have a clear understanding of what is required when specific labor issues arise during the project activities. As an integral part of the ESMF, the LMP is presented as Annex F to provide the main labor requirements, identify the risks associated with labor, and determine the resources necessary to address project labor concerns.

Stakeholder Engagement activities and consultations for the ESMF. The ESMF has been consulted (see ANNEX J) with the national-level stakeholders, non-government organizations, and representatives from the regions where the sub-projects would be implemented. The Executive Summary of the ESMF is prepared and presented in the local language, Khmer, to be able to efficiently and clearly relay the necessary information included in this document. The contact details for the Implementing Agencies and local government representatives were presented in each consultation venue in line with the Grievance Redress Mechanism (GRM).

Environment and Social Background

Cambodia is situated in the southern portion of the Indochinese peninsula in Southeast Asia. It has a land area of 181,035 sq.km. and bordered by Thailand to the northwest, Laos to the northeast, Vietnam to the east, and the Gulf of Thailand to the southwest.

The detailed geographical location of Siem Reap, Kandal, and Kampong Speu is shown in Figure 1.

Cambodia has a climate that is tropical: hot all year around, with a rainy season from May to October due to the south-west monsoon and a dry season from November to April. For a typical year, the rainfall in the inland areas is about 1,300 to 1,800 mm. The climate is a bit cooler in the highlands, where slopes are covered by an impermeable forest (and forest covers) and are protected by a nature reserve. The mountainous areas are also the rainiest, which receive up to 5,000 mm of rain per year and experience some showers in the afternoon even before the monsoon season from February to April.



Figure 1: Geographical Location of Cambodia

Siem Reap is the second largest municipality, located on the northwestern part of Cambodia ($103^{\circ} 51' 37.1268''$ E and $13^{\circ} 21' 50.5692''$ N) and bordered by Oddor Meanchey province to the North, Preah Vihear and Kampong Thom provinces to the East, Banteay Meanchey province to the West, and Tonle Sap Lake to the south. Spanning a total area of 10,299 sq.km., Siem Reap is comprised of 12 districts, 100 communes, and 875 villages.

Kandal is a province in Cambodia located in the southern portion of the country. It is surrounded by the Cambodian capital of Phnom Penh and borders the provinces of Kampong Speu and Takeo to the west, Kampong Chhnang and Kampong Cham to the north, Prey Veng to the east, and shares an international border with Vietnam to the east and partially south. It is one of the largest populated and wealthier provinces in the country. A new Phnom Penh International airport, approximately 30km from the municipal center, is being constructed and will be operated in 2025. It is recorded one of the largest airports in terms of land area. The capital city of Kandal is Ta Khmao, which is approximately eight kilometers south of Phnom Pehn, connected with each other via a very vibrant and dynamic commercial and industrial corridor to the south.

Kampong Speu is a province in Cambodia bounded by the provinces of Pursat and Kampong Chhnang to the north, Kandal to the east, Takeo to the southeast, Kampot to the south, and Koh Kong to the west. Its capital town is Chbar Morn.

Demography. As of 2019, the total population in Siem Reap was recorded at 1,006,512 (NIS 2020). The female population (51.2%) is slightly higher than the male population (48.8%). The province has an average household size of 4.48 and a household population of 224,672. The Province of Kampong Speu has a total population of 877,523 of which 51.6% are female. The province has 195,882 and has an average household size in the province is 4.47. The Province of Kandal, which surrounds the capital Phnom Penh and is the second most populous province in Cambodia, has a total population of 1,201,581 of which 51.6% are female. It has a household population of 265,803 and an average household size of 4.52. Population density in Siem Reap grew from 87 to 98 persons per sq.km. from 2008 to 2019. The province is significantly more densely populated in comparison to Cambodia as a whole as there are only 84 persons per sq.km. in the whole of Cambodia as of 2019, an increase of from 74 persons per sq.km. in 2008 (NIS 2008).

In terms of ethnicity and language the majority of the population have Khmer as their mother tongue at 97.1%. There are over 300,000 or 2.3% of the population whose mother tongue fall within the minority languages. In Siem Reap, the Khmer people populate the majority of the population of Siem Reap Province. In Kampong Speu and Kandal, those whose mother tongue is Khmer hold the majority at 99.3% and 99.2% respectively.

Persons with Disability. In the 2019 Census, disability was measured in terms of physical and/or mental difficulties experienced in daily life for people aged 5 years and over. Among the three (3) provinces, Kandal had the greatest number of persons with disabilities at 52,724 individuals, or 7.6% of its population, placing the province with fourth of the 25 provinces in Cambodia with the greatest number of disabilities. This is followed by Siem Reap at 40,585, and Kampong Speu at 35,620

Female-headed Households. Female-headed households are more prominent in the southeastern provinces. In Siem Reap Province, 13% of the households are headed by females, while for the provinces of Kandal and Kampong Speu, 15% of the households are female-headed.

Poverty. In Cambodia, almost one in five households (18.98%) are considered poor (MOP 2019). In Siem Reap Province, 30,579 households or 12.19% of its total households are poor, most of which are under Poor Level 2. In Kandal Province, 30,972 households or 9.91% of its total households are poor, a third of which are under Poor Level 2 in line with the sub-decree on the identification of poor households (nr 291) in which there are two levels of poverty classification. Lastly, in Kampong Speu, 23,569 households are poor, which represents 4.81% of its total households. The poor households are almost split between Poor Level 1 and Level 2.

Disaggregated data by sex of the household head, 42.2% of the poor households in Cambodia are headed by females. The share of female-headed poor households in Siem Reap are significantly lower than the national average at 35.6%, while in Kandal Province, it is only marginally lower at 41.8%. In contrast, Kampong Speu's share of female-headed households among the poor population is almost half at 47.5%.

In Siem Reap, about a third of the poor households (62.6%) are engaged in rice farming. Similarly, rice farmers are also the main income activity of most poor households in Kampong Speu at 72.1%. On the other hand, 60.3% of the poor households in Kandal are engaged in

other income activities apart from farming and fishing. Agriculture sector declined, while service and industrial sectors increase.

Access to Water Supply. The percentage of families with access to clean water in Siem Reap, Kampong Speu and Kandal is 39.4%, 27.2% and 44.8% respectively. This represents those equipped through piped water, private pump well or private ring well which is available in all year and is accessed in or less than 150 meters from their house. In Siem Reap, water supply networks have been constructed by the Siem Reap Water Supply Authority (SRWSA), mainly in the city center.

Access to Sanitation. From the 2016 data in the commune database, the ratio of family to toilet facility is below 1:1 the Provinces of Siem Reap, Kampong Speu and Kandal. In Kandal, the average is 0.7 toilet per family. On the other hand, the ratio in Siem Reap Province is 0.6 toilet per family. Kampong Speu is among the provinces with the lowest toilet to household ratio at 0.5.

Economy, Livelihood and Employment. The top three (3) leading industries in Cambodia are Agriculture, Forestry & Fishing, Wholesale & Retail Trade, and Manufacturing. Much like majority of Cambodia, the Agriculture, Forestry & Fishing industry contributes to the largest portion of employment in Siem Reap as of 2013 at 63.0% of the total employment. There were more females employed in the three (3) industries, with the biggest difference with males in the Wholesale & Retail Trade. The females employed in the manufacturing sector is greater in Kampong Speu (26.5%) and Kandal (26.0%) in contrast to the national average of 10.3%.

Tourism. Travel restrictions due to the COVID-19 pandemic has significantly affected the sector. In 2020, only 1.3 million international tourist arrivals were recorded, or a decrease of 80% from the previous year. In the same year, domestic tourist arrivals held 78% of the total tourist arrivals, in contrast to the previous years where share of domestic and international tourist were fairly close. Among the destinations, Siem Reap showed the highest decrease in arrivals for both local and international tourists at a decrease of 65.8% and 80.8% respectively. Specifically, there is impact of COVID on socio-economic conditions of people (more hardship, lacked employment, income, reduced nutrition).

Cultural Heritage Areas. The Angkor Zone is one of the cultural heritage sites in Cambodia that has been inscribed in the World Heritage List of the United Nations Educational, Scientific, and Cultural Organization (UNESCO). The site in Banteay Srei, Roluos, and the core segment of Angkor falls under Zone 1, while the surrounding areas of Angkor fall under Zone 2 (APSARA National Authority 2011). Apart from these cultural heritage sites, Tonle Sap Biosphere Reserve (TSBR) is UNESCO Biosphere Reserve and is protected under the Royal Decree on the Establishment and Management of Tonle Sap Biosphere Reserve (2001). It is under the authority and protection of the General Department of Administration for Nature Conservation and Protection in the MOE.

Gap Analysis of Environmental and Social Framework

The policies of the World Bank and the related legislation of the RGC at the national and local scale were reviewed and analyzed to identify gaps and measures to bridge them, as detailed in **Table 1**.

Table 1: Gap Analysis of Existing World Bank and Cambodia Policies

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Primary Responsible Party
General	Paragraph 11: Associated Facilities ” means facilities or activities that are not funded as part of the project and, in the judgment of the Bank, are: (a) directly and significantly related to the project; and (b) carried out, or planned to be carried out, contemporaneously with the project; and (c) necessary for the project to be viable and would not have been constructed, expanded or conducted if the project did not exist.		<p>The existing dumpsite will need to be closed or integrated in the new sanitary landfills to prevent further adverse environmental impacts and because without closing the existing dumpsite, a new landfill with gate fee will not receive any waste for disposal if an open dump is still around for free</p> <p>If the current dumpsites would be closed by the GOC, in line with the WB ESF, the closure and remediation or rehabilitation existing dumpsites are associated facilities to the development of new landfill sites since the objective of development, operation and use of new sanitary landfills cannot be achieved without closure of the existing dumpsites. The new sanitary landfills will have a gate fee for the disposal of waste for the proper investments, operation and maintenance of the new sanitary landfill and without closure of the existing dumpsites (for which no gate fee is applied), waste will not be transported and disposed at the new landfill making the new landfill project unviable. As an alternative to closure, rehabilitation and extension of the existing dumpsite into a sanitary landfill is possible.</p>	MPWT, MoE
Environmental and Social Impact Assessment	ESS1: The conduct of an assessment of the environmental and social risks and impacts (i.e., direct, indirect, cumulative) is required for proposed World Bank-financed and associated facilities across its project phases (i.e., preconstruction, construction, operation, decommissioning, closure, and reinstatement/restoration phases, whichever are relevant). Borrowers are required undertake the following:	<p>Law on Environmental Protection and Natural Resource Management (1996) includes the formulation of sub-decrees for environmental management, including policies related to the Environmental Impact Assessment Process.</p> <p>Sub-decree 72 on Environmental Impact Assessment Process (1999) serves as the legal basis that established the guidelines for the I/EIA for projects in waste processing, burning</p>	WB ESS and RGC policies on EIA are aligned in terms of assessing environmental impacts of projects as a whole, focusing on the natural environment as well as on the socio-economic aspects. The national legislation on EIA excludes significant aspects related to social impact assessment and management. Also, the focus on vulnerable groups is not as strongly provided in the RGC policies as in the WB ESS. Apart from the inclusion of public participation in the RGC's EIA	MoE

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	<p>(1) <u>Environment and Social Assessment</u>, identification and evaluation of potential environmental and social risks and impacts;</p> <p>(2) <u>Stakeholder Engagement</u>, preparation of stakeholder engagement plans (SEP), information disclosure, and meaningful consultation as provided by ESS-10;</p> <p>(3) <u>Environmental and Social Commitment Plan (ESCP)</u>, timebound planning of actions and measures for identified potential risks and impacts; and,</p> <p>(4) <u>Monitoring and Reporting</u>, performance tracking and evaluation of actions identified in the ESCP.</p> <p>For projects that include existing facilities for rehabilitation, a review and audit must be conducted to identify corrective actions to align the existing facility with the requirements of the ESS and must be indicated in the ESCP. All high-risk projects and sub-projects must be in accordance to ESS, while Substantial-risk to low-risk projects must be in accordance to national laws and the ESS deemed relevant by WB.</p> <p>A CBA or other analyses will be required for instances wherein selected option in site, design or technology poses higher environmental and social risks compared to other options.</p> <p>The necessary capacity and trainings related to the implementation and monitoring of the ESCP must be included as part of its measures.</p>	<p>activities, wastewater treatment plants, and drainage systems greater than 5,000 ha.</p> <p>Prakas 376 on General Guideline for Preparing Initial Environmental Impact Assessment and Full Environmental Impact Assessment Report (2009) sets the guidelines and scope of I/EIAs.</p> <p>Prakas on Delegation of Power to Municipal/Provincial Department of Environment to Decide on Project Development (2005) delegates the review of I/EIAs of private individuals or companies, joint ventures, public companies and government agencies to the municipal or provincial department of environment.</p> <p>Prakas 21 on the Classification of Environmental Impact Assessment for Development Projects (2020)</p> <p>The Prakas provides an amended listing of the impact classification of projects to identify whether they will be required to submit an environmental protection agreement / contract (projects with small E&S impact), initial environmental and social impact assessment (projects with medium E&S impact), or full environmental and social assessment (projects with serious E&S impact).</p>	<p>process, there is no prescription on its strategic conduct, including the conduct of mapping and the preparation of a stakeholder engagement plan.</p> <p>The ESIs and ESMPs that will be developed for the sub-projects will specifically include focus on social assessment and management plus vulnerable groups as well as will include specific stakeholder engagement plans.</p>	

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	<p>This application of this ESS is contingent to ensuring the compliance to ESS10, and the other ESS as necessary within the context of the project.</p> <p>(ESS-1 Par 1011, 15, 23, 28-30; ESS-1 Guidance Notes GN 15.1-GN17.2)</p>			
Labor Conditions and Occupational Safety	<p>ESS1: Environmental and social assessment must include relevant risks and impacts including implications to health, safety and wellbeing of workers of the facility (ESS-1 Par 28)</p>	<p>Labor Law (1997) includes occupational health safety provisions not provided for sanitary landfills and other waste management facilities. The law also establishes the responsibility of employers in the workplace, including: provision of protective equipment, ensuring safe and clean work environment and safety of the workers, and bearing responsibility in work-related accidents, including compensation. (Labor Law 1997, Chapter VIII and IX)</p> <p>The minimum allowable age for <i>wage employment</i> is set at 15 years, and 18 years for hazardous work. For child laborers from 15 to 17 years old working wage employment are now allowed to perform night work,</p> <p>Children between 12 to 15 years old can be hired to do light work as long as the nature of work fulfils the following:</p> <p>(1) work is not hazardous to their health or mental and physical development.,</p> <p>(2) work will not affect their regular school attendance, their participation in guidance programs or vocational training approved by a competent authority. The definition of light work is provided in a separate prakas.</p> <p>The law is applicable to all employment contracts within the territory of the Kingdom of Cambodia, regardless of where the contract was made and</p>	<p>Both the WB ESS and RGC laws prohibits the employment of children under the age of 18 in hazardous work. However, national laws only cover children employed in the formal sector. Children waste pickers in the informal sector occur in Cambodia and in poor and unhealthy labor conditions.</p> <p>To address this gap, the ESMF recommends a minimum working age of 18 years old for contractors (details in the LMP). Specific guidelines will also be developed to require the contractors to comply as well as monitor their compliance.</p> <p>For the sub-projects involving waste-pickers, Detailed Resettlement Plans (DRPs) will be prepared, adopted and implemented with meaningful consultation with affected persons in accordance with ESS5 and consistent with the requirements of the Resettlement Policy Framework (RPF) and in agreement with the General Department of Resettlement (GDR) under the Ministry of Economy and Finance (MEF). This will include both physical displacement and economic displacement and include livelihood restoration and support for affected persons. Specific attention will be paid to children waste-pickers and their families.</p>	<p>MOI, with MOE, MPWT, GDR, under MEF Contractors, construction supervisors</p>

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		<p>what the nationality and residences of the contracted parties are. This law applies to every enterprise or establishment across all industries and sectors</p> <p>Prakas No. 002 on Category of Occupation and Light Work Permitted for Children (2008) Light work for child laborers aged 12 to 15 years old, pertaining to those that does not affect the health as well as mental and physical development of the employed children and does not affect their regular school attendance, involvement in orientation programs, or vocational trainings required by the competent authorities, includes</p> <ul style="list-style-type: none"> • Working at some shopping malls such as selling booth, vegetables and fruit selling stall, or news stand and stall of other similar goods; • Receiving, packing, selecting and classifying goods as well as assembling light things, including opening or taking goods out of the package; • Lifting, carrying and holding light things. <p>The prakas provides a full listing of the types of light work for children aged 12-15 years old and is detailed in Section 3.2.2.</p> <p>Those who employ children from 12 to 15 years old for light work shall allow their parents or guardian to understand the terms and conditions of employment, including the children's working time, school attending time, vulnerability to work-related accidents and diseases, adopted measures on hygiene and work safety.</p> <p>Work hours for these children shall not exceed four (4) hours for school days, and seven (7)</p>		

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		hours for school-free days. They are also prohibited from working between 8:00 pm to 6:00 am. They are entitled to two (2) consecutive days off per week.		
	<p>ESS2: Labor management procedures for all types of workers to be employed or engaged by the project must include minimum benefits, termination agreements, principle of nondiscrimination and equal opportunity, minimum age of workers, occupational health and safety, and grievance mechanism to establish labor standards in the workplace.</p> <p>ESS 2 para 19, and footnote 13, notes that a child under the age of 18 may be employed or engaged in connection with the project if there is no hazardous work, an appropriate risk assessment is conducted prior to the work commencing, and the recipient conducts regular monitoring of health, working conditions, hours of work</p>	<p>Prakas No. 106 on the Prohibition of Hazardous Child Labour (2004) prohibits the employment of children below 18 years old on jobs involving hazardous works involving construction and demolition (with exception to designated safe areas with permit from labor inspector), exposure to hazardous chemicals and substances, exposure to fumes, dust gas and other ambient substances, heavy machinery and equipment</p> <p>Employers considering to employ children of 16 years of age to do hazardous work are required to secure a permit from the Ministry and must adhere to the following:</p> <ul style="list-style-type: none"> • No work between 10:00pm to 5:00am • Children undergo training • Consultation with Labor Advisory Committee • Annual health checkups with Department of Labor Health to certify that they are in the proper health condition to engage in hazardous work 	The sub-projects LMPs to contain specific provisions relating to the restriction of any child labour within the Project either as Direct, Contracted or Primary Supply Workers. In addition to age verification measures, it is also to require that no exceptions for involvement in hazardous work can be provided, and that any forms of work by children below the age of 14 will not be permitted. Further details on gaps and measures for labor are in the LMP.	MOI, with participating municipalities, contractors and construction supervisor
	<p>EHS Guidelines for Waste Management Facilities on Occupational Health and Safety: Occupational Safety Procedures for the landfill operation must include provisions related to: (1) accidents and injuries, including those involving trucks and moving equipment, unstable disposal site surfaces, and fires and explosions (2) chemical exposure, including exposure to</p>	<p>Law on Suppression of Human Trafficking and Sexual Exploitation (2008) declares forms of human trafficking and sexual exploitation, including forced labor or services, slavery or practices similar to slavery, debt bondage, involuntary servitude, and child labor, for profit-making as unlawful. In the explanatory note on the law by the Ministry of Justice, forced labor is defined as all work or service which is exacted</p>		

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	<p>chemical burns (3) exposure to pathogens and vectors that can be health hazards. For informal living near waste management facilities, they often have poor living conditions with only minimal water and sanitary facilities. They are also especially at risk to exposure to hazardous and toxic waste and fumes. As much as possible, the economic displacement of these must be avoided, especially without provision of any alternatives.</p> <p>Facilities managing municipal solid waste must work together with government entities to allow the collection and sorting of solid waste, if possible, initiatives to help them form formal entities, such as cooperatives or micro-enterprises, can be done to formally contract them into the process of the facility. Once such work is formalized, the workers must be officially registered, provided with protective equipment, provided with washing and sanitation facilities, and receive regular health examinations and vaccinations under a health surveillance program. The design of the facility must also consider easier access to the recyclables and reduce their contact to wastes that pose hazards. (p. 23-26)</p>	<p>from any person under the menace of any penalty and for which the said person has not offered himself voluntarily (IJM 2016).</p>		
Pollution	<p>ESS3: Policies related to requirements and standards related to the sustainable use of resources in the various stages of the project must be laid out. Additionally, measures for prevention and mitigation short and long-term pollution (i.e., air,</p>	<p>Law on Environmental Protection and Natural Resource Management (1996) mandates the formulation of sub-decrees on Air Pollution Monitoring and Noise Disturbance, Water Pollution Control, and Environmental Impact Assessment Process.</p>	<p>Resource efficiency and pollution prevention and management measures shall be developed under the ESMP to be prepared, submitted and implemented.</p>	<p>MWPT, MOI, MOE</p>

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	<p>water, noise) and waste (i.e., hazardous, nonhazardous, and chemical) must also be provided.</p> <p>General EHS Guidelines: International Standards on Air Quality and Noise Level was included in the guidelines:</p> <p><u>Ambient Air Quality:</u> WHO Ambient Air Quality Standards set in 2005 were adopted.</p> <p><u>Noise Level:</u> WHO Guidelines on Community Noise set in 1999 was adopted.</p> <p>(p.4, 53)</p>	<p>Sub-decree 42 on Air Pollution Monitoring and Noise Disturbance (2000) establishes the standard on ambient air quality and maximum allowable noise level as follows:</p> <p>Noise: Vehicles</p> <table><tr><th>Type of Vehicles</th><th>Max Limit (dB (A))</th></tr><tr><td><125cm3</td><td>85</td></tr><tr><td>≥125cm3</td><td>90</td></tr><tr><td><12 seats</td><td>80</td></tr><tr><td>≥12 seats</td><td>85</td></tr><tr><td><3.5 tons</td><td>85</td></tr><tr><td>≥3.5 tons</td><td>88</td></tr><tr><td>≥150kw</td><td>89</td></tr><tr><td>Others not included above</td><td>91</td></tr></table> <p>Noise: Residential Areas and Public Places</p> <table><tr><th>Location</th><th>6am-6pm</th><th>6pm-10pm</th><th>10pm-6am</th></tr><tr><td>Non-residential: Hospital, school, kindergarten</td><td>45</td><td>40</td><td>35</td></tr><tr><td>Residential: Hotel, house,</td><td>60</td><td>50</td><td>45</td></tr><tr><td>Commercial and services,</td><td>70</td><td>65</td><td>50</td></tr><tr><td>Industry mixing with residential</td><td>75</td><td>70</td><td>50</td></tr></table> <p>Noise: Standard at Work Place and Industries</p>	Type of Vehicles	Max Limit (dB (A))	<125cm3	85	≥125cm3	90	<12 seats	80	≥12 seats	85	<3.5 tons	85	≥3.5 tons	88	≥150kw	89	Others not included above	91	Location	6am-6pm	6pm-10pm	10pm-6am	Non-residential: Hospital, school, kindergarten	45	40	35	Residential: Hotel, house,	60	50	45	Commercial and services,	70	65	50	Industry mixing with residential	75	70	50		
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	<p>EHS Guidelines for Waste Management Facilities on emission and noise management: Additional guidelines on emission management specific for Waste Management Facilities include: (1) inclusion of landfill gas collection system and its use if practical, (2) use of gas blowers, and (3) installation and regular sampling of boreholes.</p> <p>Additional guidelines on noise management specific for Waste Management Facilities include: (1) construction of a buffer zone,</p>	<p>Technical guideline on municipal solid waste management (2016) includes the detailed guidelines and instructions related to the operations, maintenance, and closing of landfills, including composing methods, management and treatment of medical and chemical waste</p>																																																											

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	(2) road quality maintenance (3) use of equipment with low-noise emission levels, (4) use of sound-insulating materials, acoustic screens and silencing equipment, (5) enclose inherently noisy equipment in a fixed structure, and (6) inclusion of noise considerations in the design process. EHS Guidelines for Waste Management Facilities on Landfill Siting: Proximity of groundwater and recharge area, surface water. Private or public drinking, irrigation, or livestock water supply, and perennial stream must be considered Exposure of the site option to hydrometeorological and seismic hazards, must be considered in the site selection. (Section 1.1.1, p.10-11, 14)																									
Community Health and Safety	ESS1: Environmental social assessment must include relevant risks and impacts in in the health, safety and well-being of project affected communities, along with the community safety provisions of the EHS Guidelines. (ESS-1 Par 28)	Sub-decree 42 on Air Pollution Monitoring and Noise Disturbance (2000) establishes the standard on ambient air quality and maximum allowable noise level as follows: <u>Noise: Vehicles</u> <table><tr><th>Type of Vehicles</th><th>Max Limit (dB (A))</th></tr><tr><td><125cm3</td><td>85</td></tr><tr><td>≥125cm3</td><td>90</td></tr><tr><td><12 seats</td><td>80</td></tr><tr><td>≥12 seats</td><td>85</td></tr><tr><td><3.5 tons</td><td>85</td></tr><tr><td>≥3.5 tons</td><td>88</td></tr><tr><td>≥150kw</td><td>89</td></tr><tr><td>Others not included above</td><td>91</td></tr></table> <u>Noise: Residential Areas and Public Places</u> <table><tr><th>Location</th><th>6am-6pm</th><th>6pm-10pm</th><th>10pm-6am</th></tr></table>	Type of Vehicles	Max Limit (dB (A))	<125cm3	85	≥125cm3	90	<12 seats	80	≥12 seats	85	<3.5 tons	85	≥3.5 tons	88	≥150kw	89	Others not included above	91	Location	6am-6pm	6pm-10pm	10pm-6am	As part of the site-specific ESIA's and ESMPs, prepare, adopt, and implement measures and action to assess and manage specific risks and impacts to the community arising from Project activities, such as remediation of dumpsites or rehabilitation of dumpsites into landfills with extension, construction of waste transfer and/or treatment facilities, as described in the ESMPs for the sub-projects to be prepared in accordance with the ESMF, in a manner acceptable to the Association. The ESMPs will include labor influx management, GBV and road safety during construction phase.	MPWT, with MOE, MOI, participating municipalities, contractors, construction supervisors
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		Residential: Hotel, house,	60	50	45		
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	<p>ESS4: The risks and impacts to the health, safety, and security of the identified project-affected persons and community must be identified and minimized. All potential risks across all phases of the projects must be identified and evaluated while taking into consideration the circumstances of disadvantaged and vulnerable groups.</p>	<p>Labor law of the Kingdom of Cambodia (1997) includes Chapter VIII, Health and Safety of Workers, articles 228 to 247</p>					
	<p>EHS Guidelines for Waste Management Facilities: <u>Long-term Operation, Decommissioning or Closure:</u> Specific procedures on closure must emphasize preservation of long-term integrity and security of the site. The closure and post-closure plan must include mitigating impacts to human health and environment after the closure. All plans must be aligned with the defined post-closure use.</p> <p><u>Landfill Siting:</u> In the identification of landfill sites, the nearest residential developments must be over 250 meters from the site option.</p> <p><u>Community Health and Safety:</u> The following impacts likely to occur during the operation and decommissioning phases must be looked into: (1) <i>Waste scavenging:</i> should not be allowed under any circumstances in</p>	<p>Sub-Decree on Municipal Solid Waste Management (2017) The purpose of this sub-decree is to regulate the solid waste management with proper technical manner and safe way in order to ensure the protection of human health and the conservation of bio-diversity. This sub-decree applies to all activities related to disposal, storage, collection, transport, recycling, dumping of garbage and hazardous waste. The collection, transport, storage, recycling, minimizing and dumping of waste in the provinces and cities are the responsibility of the authorities of provinces and city.</p>					

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	<p>hazardous and non-hazardous industrial waste management facilities. Only facilities handling municipal solid waste may consider incorporating the employment of waste pickers.</p> <p>(2) <i>Physical, chemical, and biological hazards</i>: access to facilities, especially for areas that hold toxic waste, must be restricted and implement security procedures.</p> <p>(3) <i>Litter</i>: garbage outside the facility must be managed to avoid the exposure of the adjacent community to hazardous substances and potentially spread disease.</p> <p>(4) <i>Noise</i>: measures to management noise should be taken to void causing nuisance to the adjacent areas.,</p> <p>(5) <i>Dust and odors</i>: Buffer areas must be included in the design, especially between processing areas and potential receptors, especially residences, hospitals and schools. Processing areas must be located in areas at the downwind from these areas to manage and control exposure of community to dust and odors.</p> <p>(Section 1.1.1, p.10-11, 14; Section 1.3 p.26)</p>			

Land Acquisition and Livelihood Restoration	<p>ESS5</p> <p>Objectives of ESS5 are:</p> <ul style="list-style-type: none"> • To avoid involuntary resettlement or, when unavoidable, minimize involuntary resettlement by exploring project design alternatives. • To avoid forced eviction. • To mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by: (a) providing timely compensation for loss of assets at replacement cost and (b) assisting displaced persons in their efforts to improve, or at least restore, their livelihoods and living standards, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher. • To improve living conditions of poor or vulnerable persons who are physically displaced, through provision of adequate housing, access to services and facilities, and security of tenure. • To conceive and execute resettlement activities as sustainable development programs, providing sufficient investment resources to enable displaced persons to benefit directly from the project, as the nature of the project may warrant. • To ensure that resettlement activities are planned and implemented with appropriate disclosure of information, meaningful consultation, and the informed participation of those affected 	<p>2018 Land Acquisition and Involuntary Resettlement reflects RGC's laws and regulations relating to the acquisition of land and the involuntary resettlement of AP and the safeguard policies, standards and procedures of Development Partners (DPs) as applied to public infrastructure investment projects.</p> <p>The SOP includes references to international good practices in resettlement planning, implementation, monitoring and reporting. The SOP has been promulgated under Sub Decree No. 22 ANK/BK on 22 February 2018 and applies to all externally financed projects in the Kingdom of Cambodia. The GDR of the Ministry of Economy and Finance (MEF) is responsible for providing guidance and clarification to users of the SOP.</p> <p>Inter-Ministerial Resettlement Committee and the General Department of Resettlement at Ministry of Economy and Finance. In 1997, the Inter-Ministerial Resettlement Committee (IRC) was established with the mandate to review and evaluate the impacts on resettlement and land acquisition for public physical infrastructure development projects in Cambodia. It is a collective entity that exercises the authority of the Expropriation Committee under the 2010 Expropriation Law. The IRC consists of the MEF, Ministry of Land Management, Urban Planning and Construction (MLMUPC), Ministry of Economy and Finance (MEF) and Ministry of Agriculture, Forestry and Fisheries (MAFF). It is permanently chaired and led by the MEF, and with members from different line ministries, including consists of the MEF, Ministry of Land</p>	<p>The specific gap analysis, measures and clarifications for ESS5 is included in the Resettlement Policy Framework</p>	<p>GDR with MPWT and MOI</p>
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	<ul style="list-style-type: none"> no displacement (or construction works leading to displacement) can start until full compensation has been received by PAPs. <p>ESS5: The risks and impacts related to the permanent or temporary physical and economic displacement of project-affected persons across various tenure arrangements shall be assessed and evaluated. It is specifically mentioned that this includes people with no recognizable form of tenure.</p> <p>ESS5 upholds the avoidance of involuntary resettlement, and for instances wherein it cannot be avoided, measures to minimize and mitigate the adverse impacts to the displaced shall be established.</p>	<p>Management, Urban Planning and Construction (MLMUPC), and Ministry of Agriculture, Forestry and Fisheries (MAFF). The IRC carries out its role and responsibilities through the IRC-WG which is established for each public investment project by MEF. The powers of the IRC are delegated to its permanent Chairman.</p> <p>The General Department of Resettlement (GDR) serves as the secretariat of the IRC and the lead for land acquisition and resettlement for public investment projects. The Sub-Decree No.115 enacted in 2016 promoted the Resettlement Department of the MEF to GDR and defines its functions and responsibilities to the IRC and in land acquisition and resettlement</p>		
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Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Primary Responsible Party
Biodiversity and Ecology	ESS1: Environmental social assessment must include relevant risks and impacts including threats to natural habitats and biodiversity, ecosystem services, fisheries and forests. (ESS-1 Par 28)	Law on Nature Protection Area (2008) specifies the eight (8) categories of natural protected areas: natural park, wildlife sanctuary, protected landscape, multi-purpose use management area, biosphere reserve, natural heritage site, marine park, and Ramsar site.	During construction activities, there will be possible significant impacts on natural habitats and biodiversity. The impact on biodiversity will be analyzed in detail during the environmental and social impact assessment study and the corresponding mitigating measures will be formulated in the ESMPs for the sub-projects.	MPWT, contractors, construction supervisors
	ESS6: The assessment must include the identification, assessment, and evaluation of direct and indirect threats and potential impacts to biodiversity, and natural, critical, modified and habitats. As deemed necessary, a Biodiversity Management Plan may be developed.	<p>Law on Water Resources Management (2007) includes regulation on discharge, disposal or deposit of polluting substances that can impact water quality. Proper authorization from the Ministry of Water Resources and Meteorology must be secured prior to any activities aligned to this.</p> <p>Law on Forest (2002) establishes framework and regulatory measures to protect and conserve forests and their biological diversity, and places forest management under the function of the MAFF. The same law requires the conduct of environmental and social impact assessments for any activities that may have potentially significant impacts to the forest ecosystem.</p>	The project will not finance waste management, treatment and disposal infrastructure that could provide access to critical habitats such as wildlife sanctuary and protected areas	
Indigenous Peoples	ESS7: Aims to avoid adverse impacts.... And provide culturally appropriate benefits. Proposed projects must include an assessment of the nature and degree of the expected direct and indirect economic, social, cultural and cultural heritage, and environmental impacts of the project to indigenous peoples, including potential encroachment, transformation and degradation of their land and resources. Meaningful consultations must be ensured for projects that will be directly or indirectly	<p>The Constitution of Cambodia (1993) guarantees that all Khmer citizens are equal above the law and shall enjoy the same rights freedom, and duties regardless of race, color, sex, language, beliefs, religions, political tendencies, birth of origin, social status, resources, and any position (Art. 31). It also guarantees all Khmer citizens and legal entities, individually or collectively, have the right to own land (Art. 44).</p> <p>National Policy on the Development of Indigenous Peoples (2009) serves as an umbrella framework for government policies</p>	<p>An Indigenous Peoples' Planning Framework (IPPF) is included in the ESMF to ensure compliance with WB ESS that calls for the meaningful/culturally appropriate consultations with indigenous communities, if necessary. When required, considering the criteria included in the ESF, these will include meaningful consultations based on Free and Prior Informed Consent.</p> <p>Screen any proposed subproject in accordance with the Environmental and Social Management Framework (ESMF) and reflect whether indigenous peoples are present in or have</p>	MPWT, with MOI and MOE and participating municipalities

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Primary Responsible Party
	<p>be affected indigenous peoples and traditional local communities. (ESS7 Par 7, 11-13)</p>	<p>related to indigenous peoples and communities, particularly in culture, education, health, environment, land, agriculture, water resources, infrastructure, justice, tourism, industry and mines and energy. The policy details strategy across these sectors, including:</p> <ol style="list-style-type: none"> 1. Use of local languages in multilingual primary education, the media, and public consultation “Indigenous peoples shall be fully entitled to express their comments and opinions and to make any decisions on the development of the economy, society and their cultures towards growth in the society” 2. Conduct of impact assessments for all infrastructure projects: “Development projects in the living areas of indigenous peoples can function only if there has been an environmental and social impact assessment and publicity to relevant indigenous peoples' communities in advance in order for those people to have an opportunity to provide input about their need” <p>The defines the parameters of the registration of indigenous communities as legal entities to enable them to formally own their communal land and assets, and allow them to participate in economic development.</p> <p>Land Law (2001) govern the rights to land and property as defined by the 1993 Constitution, and defines the scope of ownership of immovable properties, such as land, trees and fixed structures, including the rights of indigenous communities to collective ownership (Art. 23-26).</p>	<p>collective attachment to the proposed subproject area.</p> <p>In the case if ESS7 is relevant to specific subproject, prepare, adopt, and implement IPPs consistent with the requirements of ESS7, in a manner acceptable to the Association.</p>	

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Primary Responsible Party
		<p>The law defines indigenous communities as “a group of people who (1) manifest ethnic, social, cultural and economic unity, (2) practice a traditional lifestyle, and (3) cultivate the lands in their possession according to customary rules of collective use.” (Art. 23)</p> <p>Indigenous community lands are defined under the 2001 land law as “lands where the said communities have established their residencies and where they carry out their traditional agriculture”, and these lands “include not only lands actually cultivated but also includes reserves necessary for the shifting cultivation which is required by the agricultural methods they currently practice.” These Indigenous Community Lands are granted to indigenous communities as collective property and is protected by the same rights and ownership of private owners. (Art. 25-26)</p>		
		<p>Circular No. 2 on Measures against Illegal Holding of State Land (2007) sets the definition, measures and procedures for reclamation of state-owner lands under illegal possession. The circular reiterates that those considered as illegal occupants of state land will not be entitled for any compensation as provided by the 2001 Land Law. For lands where indigenous groups have asserted collective ownership, the claim of the State over the land must be postponed until it is legally registered as State-owned.</p>		
		<p>2008 Organic Law recognizes indigenous peoples’ vulnerability. Councils at provincial and district levels (capital, municipal and khan levels</p>		

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Primary Responsible Party
		in urban areas) are requested to formulate development plans that identify the needs of vulnerable groups including indigenous peoples. Law on Forestry (2002) recognizes the customary rights of formally registered indigenous communities to forest products and by-products.		
Cultural Heritage	ESS1: Environmental social assessment must include relevant risks and impacts including those that will cause significant adverse risks to cultural heritage. (ESS-1 Par 28)	Royal Decree on the Establishment of Protected Cultural Zones in the Siem Reap/Angkor Region and Guidelines for their Management (1993) established five (5) cultural zones and what structures are within them: 1. Core Zone: Monumental sites 2. Buffer Zone: Protected Archaeological Reserves 3. Protected Cultural Landscapes 4. Sites of Archaeological, Anthropological or Historic Interest, or sites outside of the core and buffer zones 5. Socio-Economic and Cultural Development Zone Royal Decree on the creation of the APSARA National Authority (1995) serves as the legal basis in the establishment of the Authority for the Protection of the Site and Management of the Region of Angkor (APSARA) that has the jurisdiction in the protection and conservation of the Angkor Heritage Sites, Law on Protection of Cultural Heritage (1996) protects natural cultural heritage and property, whether movable or immovable, publicly or privately owned. against illegal destruction, modification, alteration, excavation, alienation, exportation or importation. It stipulates the following:	A Chance Find Procedure will be prepared and included in the ESMPs for sub-projects	MPWT, MOE, MOI Contractor and APSARA for Siem Reap
	ESS8 specifies that risks and impacts to tangible and intangible cultural heritage are required to be identified and assessed, including potential changes in the physical environment, movement of earth; proximity to protected area and their respective buffer zones; and proximity to recognized cultural			

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Primary Responsible Party
	heritage site. Avoidance of any adverse impact to cultural heritage should be upheld whenever possible.	<ul style="list-style-type: none"> <u>Definition of Cultural Property</u>: Cultural property is defined (Chap. 1, Article 4) <u>Change Discoveries</u>: in the event of discovery of any cultural property during construction, it must immediately be turned over to and local police, to the Provincial Governor, then to cultural heritage authorities (i.e., APSARA) without delays. Within 30 days that the item is verified as cultural property by the authorities, a temporary suspension of construction works and an announcement of safeguarding measures will be taken (Section 7, Article 37-39). <p>No. 70 SSR government Decision (2004) defined the land use in the Angkor Park, wherein its Zones 1 and 2 are considered State properties.</p>		
Stakeholder Engagement	<p>ESS1: As part of the information disclosure, the findings of the E&S assessment of high-risk and substantial risk projects shall be provided prior to appraisal.</p> <p>ESS10: Meaningful engagement and consultation of stakeholders must be conducted across all stages of the project cycle, thus ensuring that timely, relevant, understandable information are provided to all the identified project-affected parties.</p>	<p>Guidebook on Environmental Impact Assessment in the Kingdom of Cambodia (2012) defines public participation and highlights the stages in the project cycle wherein stakeholder engagement is essential: project scoping, mitigation measurement, report review, and project monitoring. The guidebook provides that the identification of mitigating measures on environmental impacts should also be based on the results of public consultation.</p> <p>Prakas on Public Participation in Environmental Impact Assessment (2017) establishes the key principles to ensure public participation in the EIA process: Principle of Access to Information; Principle of Public Participation; Principle of Access to Social Justice and Effective Remedies; and Principle of</p>	<p>A Stakeholder Engagement Plan (SEP) that complies with the provisions of WB ESS10 has been prepared to ensure sustained stakeholder engagement, and appropriate conduct of information disclosure and consultations.</p> <p>The Stakeholder Engagement Plan will be updated, adopt and implemented throughout implementation.</p> <p>Prepare, disclose, and implement the SEPs for subproject activities, consistent with ESMF and ESS10</p>	MPWT, MOI and MOE

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Primary Responsible Party
	Specific measures for the identified PPAPs must be identified and laid out in a Stakeholder Engagement Plan.	Gender Equality in Public Participation; and Principle of Promoting Indigenous People in Public Participation		
Vulnerable Groups	<p>ESS1: Environmental social assessment must include adverse risks and impacts that may disproportionately affect certain groups, especially the disadvantaged and vulnerable.</p> <p>As necessary, separate consultation to identify the risks, impacts, and specific needs of these groups can be arranged. (ESS-1 Par 28-29; ESS-1 Guidance Notes GN 28.3-29.1)</p>	<p>Law on the Protection and the Promotion of the Rights of Persons with Disabilities, which states that “Persons with disabilities: refers to any persons who lack, lose, or damage any physical or mental functions, which result in a disturbance to their daily life or activities, such as physical, visual, hearing, intellectual impairments, mental disorders and any other types of disabilities toward the insurmountable end of the scale.”</p>	<p>Focus on vulnerable groups in the ESIA process is not as strongly provided in the RGC policies as in the WB ESS.</p> <p>For the sub-projects involving vulnerable groups which may be impacted through involuntary resettlement or economic displacement, resettlement plans will be prepared, adopted and implemented with meaningful consultation with affected persons in accordance with ESS5 and consistent with the requirements of the Livelihood Restoration Framework (LRF) and in agreement with the General Department of Resettlement (GDR) under the Ministry of Economy and Finance (MEF). This will include both physical displacement and economic displacement and include livelihood restoration and improvement programs for affected persons. Specific attention will be paid to woman and children waste-pickers to develop suitable measures in line with ESF on the basis of social baseline studies for each of the applicable sub-projects</p>	MPWT, MOI, MOE
	<p>Directive on Addressing Risks and Impacts on Disadvantaged or Vulnerable Individuals or Groups: the bank directive defines disadvantaged or vulnerable individuals as “individuals who, by virtue of, for example, their age, gender, ethnicity, religion, physical, mental or other disability, social, civic or health status, sexual orientation, gender identity, economic disadvantages or indigenous status, and/or dependence on unique natural resources, may be more likely to be adversely affected by the project impacts and/or more limited than others in their ability to take advantage of a projects benefits” (World Bank 2016)</p>	<p>National Policy on Ageing 2017-2030 defines 60 years as the cut-off age for older persons.</p>		
		<p>Prakas on the Prohibition of Hazardous Child Labour (2004) of the Ministry of Social Affairs, Labor, Vocational Training and Youth Rehabilitation that defines minors as individuals below 18 years of age.</p> <p>Law on the Prevention of Domestic Violence and the Protection of Victims (2005) establishes the legal mechanisms in preventing domestic violence and protecting victims and assigns “legal qualification as the judiciary police and can act as the complaining party instead of the victims” to the Ministry of Women's Affairs. The scope of the law includes domestic violence and acts affecting life, physical integrity, torture, and sexual aggression, towards husband or wife, dependents, and any persons living under a single roof and who are dependent of the</p>		

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Primary Responsible Party
		households. The law sets out the intervening measures by commune authorities, municipal administrators, and courts for cases of domestic violence		

Overview of Solid Waste Management in Cambodia and target cities

Projections based on 2013 to 2020 assumptions pegged Cambodia's waste generation at 4 to 7 million tons per year. Waste collection is largely limited to urban and peri-urban areas as housing development is sprawling and changing land use pattern and reducing agriculture productivity. Waste collected and transported to dumpsites in urban areas was approximately 317,550 tons in 2004, increasing to 630,679 tons in 2011, and rising to 1.3 million tons in 2016. The increase of municipal solid waste disposal to 106 landfills across the country is caused by economic growth, increased urbanization, and tourism. In urban areas, waste collection is carried out by private companies under the supervision of local authorities and technical line agencies. Private companies collect the waste and dispose off at dumpsites. There is limited monitoring and regulation of private waste collection and disposal companies, and local governments, who are in charge of solid waste management under sub-decree 113, lack the capacities and financial means for taking responsibility.

Siem Reap

In Siem Reap, waste collection and disposal is contracted out to GAEA company. They collect approximately 200 tons/day, of the estimated 394 tons/day generated. CINTRI has been operating since mid-2019 to collect waste from Damdek Market. Large amount of waste, estimated around 34% of the total waste generated, is leaked into outer environment (i.e. open dumping or to water channels). It is estimated that only 50% of the population in Siem Reap City has access to waste collection services and most of the collection is only available and conducted in limited urban central areas and for businesses/commercial areas where regular payment is guaranteed.

The existing dumpsite at Anlung Pir Village is in poor condition. It is located within a former soil borrow quarry and constructed and operated as an open dumpsite without any measures in place to prevent environmental pollution. There are no engineered or lined cells, no environmental monitoring or control measures, and no gas collection in place. There is no design or engineered leachate collection or treatment system, thus leachate currently pools in the waste mass and a worked-out quarry cell. The site will need full rehabilitation to prevent ongoing environmental, social and public health impacts.

Kampong Speu

Kampong Speu Province has seven districts and one municipality with a total population of 872,219 people as of 2019. The total daily waste generation estimate in Kampong Speu Province is 205 tonnes per day. Waste collection is outsourced by local government to private sector waste collection companies. Veng Seng Green Company Limited reportedly collects 31 tonnes per day for Chbar Mon Municipality and 8 tonnes per day for Samraong Tong Town.

The existing main dumpsite is located in Sampov Village, Sangkat Chbar Mon, Chbar Mon City in Kampong Speu, and can be accessed by earth road, about 0.3 km south of Road No. 44 (DBST). It is located close to town within a high value residential and industrial development zone. No engineered infrastructure is in place. The waste leachate is not collected and forms a severe environmental hazard due to surface and groundwater pollution, the produced methane is not collected, and the surrounding environment is being littered due to windblown waste, in particular plastics. There is no site fencing, or access control, allowing

informal collectors to reside on and around the site. Waste is also left in open piles in the current open dumpsite with substantial fires. The existing waste mass has been extensively burnt. Fires have been started by waste-pickers aiming to recover metals. As a result, there is limited remaining organic content and little sign of any leachate generation. The site is underlain by heavy clay/sand/silts with low permeability. The site needs to be closed and rehabilitated to prevent further pollution and related environmental, social and health impacts and new potential sites need to be identified.

Kandal

Kandal Province completely surrounds the Cambodian capital of Phnom Penh. It has 10 districts and one municipality (Ta Khmao City) with a total population of 1,195,547 people as of 2019. Two private companies provide waste services in Kandal Province with a primary focus on Ta Khmao City. CINTRI is responsible to collect the wastes from 8,270 households (out of a total of 13,259 households, i.e. 62.4%), 2,689 business area places, and five markets in Ta Khmao City. Sarom Trading collects waste from factories and industrial facilities. Community-based groups also collect waste from local markets but numbers are not known.

The total daily waste generation estimate in Kandal Province is variously reported due to unreliable data on waste collection. It is estimated that waste generated from Ta Khmao City was 408 tonnes/day in 2018 and increased to 441 tonnes/day in 2021. CINTRI reports to collect as much as 273 tonnes/day. No data is available from Sarom Trading. A total of 279 tons per day of waste are estimated to be dumped at the site each day, although there is no accurate record of the waste received.

The existing dumpsite at Kandal is 7km south of the main city and is located within a zone of expanding high value residential development. The site has limited area (2ha), no engineered infrastructure or environmental controls. There is a waste incinerator on the site but does not operate on any controlled standards for temperature or emissions. The incinerator has an estimated capacity of 5 tons per day. The site was on fire during both team site visits and shows signs of long-term extensive burning, causing tension with surrounding settlements. The site needs to be closed and rehabilitated to prevent further pollution and related environmental, social and health impacts.

Battambang

Battambang Provincial Hall currently outsources waste collection for Battambang City to two main private operators, CINTRI and Leap Lem. A third has been hired for Bavel market, called Pov. Formal collection includes CINTRI for 8 sangkats, Leap Lem for 2 sangkats- they also run the MRF station- and self-service collection for Boeung Chhouk Market. Leap Lem Current dumpsite is located 7.5 km away from Battambang city centre. CINTRI landfill is located 6 km from the city land fill.

The project is not foreseen to finance a new landfill for Battambang as this is already financed by ADB, but support under Component 2 to extend service areas and improve collection and solid waste management as well as potentially adding material recovery facilities and transfer stations could be considered, subject to confirmation of eligibility criteria.

Sihanoukville

The current waste company, KSWM- Kampong Som Waste Management Co, contracted by Sihanoukville Municipality since August 2019, took over operations from CINTRI who were previously operating in the city for 10 years. According to the KSWM's report in March 2020, there are 6,500 costumers as they have a limited capacity, and the company is currently looking to expand waste collection services. KSWM provides collection and transportation for urban city waste around Sihanoukville city. Waste collections services cover Sangkat 4 and all roads (both main roads and small roads) in the four villages/ Sangkats surrounding Sihanoukville Municipality.

Sihanoukville has one landfill that received 80.3 tons/day in 2011 and 284.5 tons/day recently. In July 2020, the MPWT and the MEF announced that they will inject US\$5 million of the 2020 fiscal budget to build a new landfill on 17 hectares of land in Sihanoukville. The landfill is to be located in Ota Sek village, Ou Oknha Heng commune, Prey Nob district, about 3km from National Road 4.

The project is not foreseen to finance a new landfill for Sihanoukville as this is already financed by other sources, but support under Component 2 of the Project to extend service areas and improve collection and solid waste management as well as potentially adding material recovery facilities and transfer stations could be considered, subject to confirmation of the eligibility criteria.

Landfill Site Suitability Process and Options Assessment

A key element of the Environmental and Social Impact Management and major risk mitigation measure the implementation of a through site assessment process. This is still an ongoing process and is expected to continue throughout the first year of project implementation.

For the site assessments, twenty-four (24) screening criteria have been developed and include key environmental and social aspects. The criteria are divided into five (5) categories:

1. Transport (including distance from service area and access road conditions)
2. Physical site Conditions for landfill and waste treatment location development (Geotechnical / hydrological / hydrogeological)
3. Current land use, ownership and development zoning
4. Social impacts, safety and acceptability
5. Environmental and cultural heritage

The site screening process is based on a two-stage approach: (1) preparation of a modelling and negative mapping process and (2) a series of site visits to ground-truth data and gather new information from walk-over surveys. The modelling, negative mapping and site investigations were guided by the Cambodian government Guidelines on Selection of Landfill Sites (2016) and the WB landfill siting criteria.

A model using the screening criteria in a multi-criteria decision-making process was developed (ArcGis). The output of the model includes a visual map of each City and surrounding area with coloured Suitability Banding in four (4) categories: Restricted, Less Suitable, Suitable, Most Suitable.

Siem Reap

The ESMF provides a short summary of the landfill site options being assessed, a more detailed assessment is included in the preliminary Environmental and Social Impact Assessment for Siem Reap.

Overview of existing site

The existing dumpsite is situated in Anlong Pir Village, Trapeang Thom Commune, Prasat Bakong District, Siem Reap Province, and occupies a series of worked out quarries across an area of approximately 8 hectares. It is privately owned and operated without key performance indicators for the operation and management of the landfill. The dumpsite itself is bordered to the east and south primarily by agricultural fields, with the north and west bordered by Anlong Pir Village.



Existing Dumpsite in Anlong Pir Village, Trapeang Thom Commune (13°18'22"N latitude and 104°2'2"E longitude)

This existing open dumpsite has been operating for more than 10 years, with the approximate volume of waste at the dumpsite in the order of ~1,000,000 cu.m. Around 250 to 300 tons of waste per day are disposed in the existing dumpsite. The existing dump site at Aulung Pir Village is currently operating as an open dump. Under a 'Do Nothing' scenario, the Aulung Pir Village dump site will continue to pose a significant environmental, social and public health risk to workers, the surrounding community and the environment. Methane gas will continue to be emitted uncontrolled; uncontrolled leachate discharge into ground and surface water will continue; odor, wind-blown waste and disease vectors (rats, flies, etc.) will continue to affect workers, waste pickers and the surrounding community with all related environmental, social, and public community health risks.

Option 1: Rehabilitation and Extension of Existing Dumpsite in Anlong Pir Village, Trapeang Thom Commune

Under this option, the current dumpsite would be rehabilitated and expanded with the construction of new cells and related landfill infrastructure on land of existing site gained through rehabilitation as well as on adjacent land. This option means to rehabilitate existing

waste dumpsite, introduce leachate collection system; construct leachate treatment, landfill gas treatment/utilization, sorting, composting and other infrastructure by reshaping and stabilizing the existing waste mass and extend the landfill area away from the villages.

Rehabilitation and extension of the current site has been assessed as in principle feasible. This land is currently used as agricultural land but likely impacted already from pollution. The area is surrounded mostly by agricultural land used mostly for rice production without residential structures. New potential extension areas to the South-East would also put the site further away, to around 400-1000+ meters, from the residential areas of the nearby Anlong Pir village to the North-West of the current site. The open leachate pond close to residential structure would be remediated. The ecologically sensitive Tonle Sap Lake is located 13.5 km to the south of the site. Detailed assessments will be needed for specific land area required in a detailed design and site specific Environmental and Social Impact Assessment following agreement and completion of landfill site selection process. Regardless of whether the site is closed or extended, the existing dump will need to be rehabilitated to prevent any further environmental impact.

Main advantages, disadvantages and preliminary conclusions on Option 1: Rehabilitation of the Existing Dumpsite are listed below.

Table 2: Advantages, Disadvantages, and Preliminary Assessment of Option 1: Rehabilitation of the Existing Dumpsite

Advantages	Disadvantages	Preliminary Assessment
<ul style="list-style-type: none"> Existing site already zoned for landfill use. Additional area available Rehabilitation of the current site may yield further space Existing dumpsite will require closing in any case, therefore cost savings can be made through continued use and site extension Good road access and well located from city service area No flood risk or near environmentally sensitive receptors or cultural heritage sites Not within city expansion area for commercial/residential zones Current pollution will be resolved through rehabilitation A significant proportion of the community is engaged in waste-picking at the dumpsite and will continue to have access to the recyclables but with controlled access and safe working conditions 	<ul style="list-style-type: none"> Communities in relatively close distance (<1.0 km) Part of the community has complained and requested site closure. Current dumpsite has no environmental controls and utilises worked out quarry pits leading to environmental impact on soils, ground/surface water, air etc. Extensive rehabilitation required 	<ul style="list-style-type: none"> The existing dumpsite will need to be closed or integrated in the new sanitary landfills to prevent further adverse environmental impacts and because without closing the existing dumpsite, a new landfill with gate fee will not receive any waste for disposal if an open dump is still around for free. If the closing of the current dumpsite is financed by GOC, it would still be considered as an associated facility to the Project and required adherence to the WB ESF¹. Current environmental and public health issues will be addressed through the Project (leachate treatment; smell; noise; piped clean water supply for communities; etc.) Rehabilitation of the current existing dumpsite would allow waste-pickers, except children, to continue having access to recyclables at the same location and be able to work under improved occupational health and safety working conditions. Community inhabitants may gain additional income through jobs created at the landfill, material recovery, and composting facility. Cost savings would be made through shared site management systems required for closure

¹ Financing for the clean-up costs and rehabilitation for the closure of the existing dumpsites is included in the Project financing. A some point in time during the WB project will the day to day operation of the dumpsite become subject to ESF requirements and this will be explicitly established in the detailed design and accompanying site specific Environmental and Social Impact Assessment.

Advantages	Disadvantages	Preliminary Assessment
		and extension (leachate treatment system, gas treatment, access control) <ul style="list-style-type: none"> • A more elaborate comparison between options and preliminary environmental and social impacts is included in the preliminary ESIA

Option 2: Closure of existing dumpsite and development of new landfill at Trapeang Tim Village, Kandaek Commune

Potential new Landfill Site Option 2 is located in Trapeang Tim Village, Kandaek Commune, in the Prasat Bakong District of Siem Reap Province. It is located approximately 11 km south-southeast of Siem Reap municipality. The potential location is a greenfield site, adjacent to a proposed wastewater treatment plant and surrounded by agricultural land (paddy field), flood prone land, and rapid urbanization (land subdivision projects). The nearest village is currently more than 2 km away to the north, and the potential site is currently occupied by scrubland and informal private owned and/or community fishing ponds.

The site is a flat, low-lying area with a suspected high groundwater table and prone to flooding. The entire area is part of a major city expansion plan for high value residential development. It is bounded to the south by the Tonle Sap UNESCO biodiversity reserve. The access road is along a poor-quality earth/laterite track which, in its current state, would be difficult to navigate during the wet season. A planned municipal ring roads would ensure good access to the site and improved flood protection but is likely to encourage developments and encroachment into the area.



Figure 2: Potential new Sanitary Landfill Site Option in Trapeang Tim Village, Siem Reap

Left image: Drone image of potential site (right), including flood protection bund & rice cultivation area (left)

Right image: Rice fields (right), Flood Protection Bund (center), landfill site (left)

The potential site under Landfill Site Option 2 is located in the middle of Zone 2 which is set aside as a protection buffer zone with restricted land use excluding landfill development. Under this option, the landfill site would be squeezed between the city expansion zone and the Tonle Sap UNESCO and Tonle Sap biodiversity reserve.

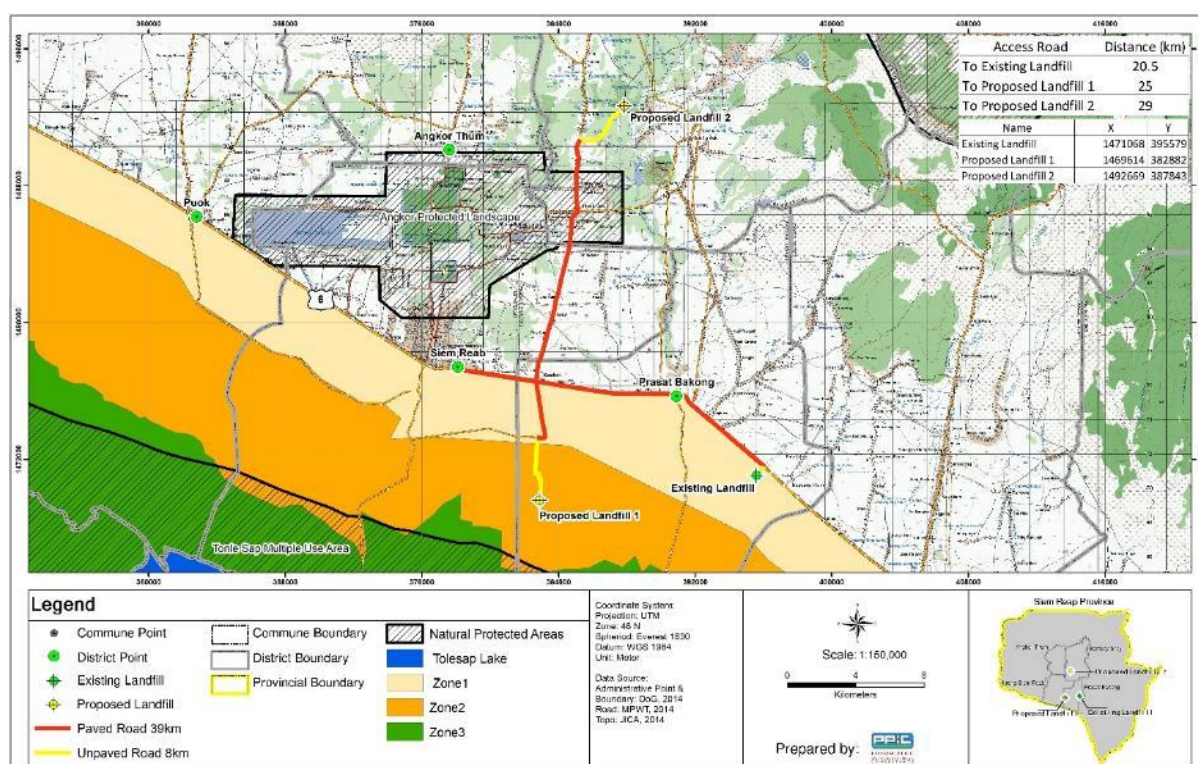


Figure 3: Tonle Sap Biosphere Reserve (TSBR) Zone Map

Main advantages, disadvantages and preliminary conclusions on Option 2: Closure of existing dumpsite and development of new landfill are provided below

Table 3: Advantages, Disadvantages, and Preliminary Assessment of Option 2: Closure of existing site and development of new landfill Site in Trapeang Tim Village

Advantages	Disadvantages	Preliminary Assessment
<ul style="list-style-type: none"> Co-located with the new wastewater treatment plant has advantages: (i) shared land use/zoning; (ii) discharge leachate to and combining it with wastewater; and (iii) WWTP to dispose sludge in Landfill Large area (+50Ha) of public land available. Currently >2 km away from the nearest residential settlement. The site is flat and appears to be underlain by a clayey soil material. Planned ring-road construction, site access will be good, suitable distance (>11 km) from city center. 	<ul style="list-style-type: none"> High value residential city expansion area to the North, Tonle Sap UNESCO biodiversity reserve and restricted development zone (South). The existing site access is in poor condition and passes through dense residential development. Shallow groundwater and potential flood risk area. During the wet season, leachate discharge will need to be stored or pumped offsite. High social costs and risks as current waste-pickers would lose access to recyclables Community Fishery present 	<ul style="list-style-type: none"> The potential new site has advantages from being co-located with the proposed new WWTP and for having an extensive area (+50 ha) available. However the site poses high environmental and social risks and is therefore overall considered not very suitable for development. This is due to being located in a prime residential and industrial development zone, being situated on the edge of a flood zone, being situated within the UNESCO development restriction zone of the of Tonle Sap Biosphere Reserve, and due to the impacts on waste pickers and workers at the existing site.

Kampong Speu

Option 1: Rehabilitation and Extension of Existing Dumpsite in Sampov Village, Sangkat Chbar Mon, Chbar Mon municipality

The approximate size of the dumpsite area is 11 ha, 4.5 ha of which is in operation and the remaining 6.5 ha are rice fields. The site is located close (~10 km) to the Chbar Mon municipality in an area zoned for rapid industrial and residential development. The site is currently surrounded by scrub land; however, a high value residential development is currently under construction immediately west and south of the existing dumpsite. There is insufficient further land available for expansion around the existing site. The current open dump will require extensive rehabilitation to minimize environmental impacts. There are approximately 18 waste-pickers working at the dumpsite. Further groundwork assessment is needed to provide detailed information regarding the situation of the waste-pickers once the sub-project is defined.



Figure 4: Existing Dumpsite in Sampov Village, Sangkat Chbar Mon, Kampong Speu

Main advantages, disadvantages and preliminary conclusions on Option 1: Rehabilitation of the Existing Dumpsite are listed below.

Table 4: Advantages, Disadvantages, and Preliminary Assessment of Option 1: Rehabilitation of the Existing Dumpsite in Sampov Village, Kampong Speu

Advantages	Disadvantages	Preliminary Assessment
<ul style="list-style-type: none"> • The site has good access to the nearby main (paved) NR44 road and the solid waste service area. • No reported flooding and not close to any environmentally sensitive receptors or cultural heritage sites. • The site is underlain by heavy clay/sands/silts with low permeability and good engineering construction properties. 	<ul style="list-style-type: none"> • Immediately adjacent to a new residential development within a high value commercial and residential development zone. • There is no further land available for expansion around existing site. • A closure and remediation of the existing site would have high social impacts as the current waste-pickers of the site would need to travel to the new landfill site to continue collecting recyclables and require 	<ul style="list-style-type: none"> • The existing landfill site is located within a high value residential and industrial development zone with insufficient space for extension. • Preliminary conclusion is that most suitable option is to close the site for landfill disposal and potentially develop a transfer station, material recovery and composting facility in this location. • Alternatively to fully close the waste dump and remediate land

Advantages	Disadvantages	Preliminary Assessment
	compensation through livelihood restoration project.	<p>back to a point where it is suitable for future high value residential or industrial development. This will be a large financial revenue due to increased property value.</p> <ul style="list-style-type: none"> • In case of full closure, current waste-pickers would need to be integrated into new facilities, provided with access to new site, or other livelihood support • Further analysis to be based on ongoing site identification process

Option 2: Closure of existing dumpsite and development of new landfill

Two site options were provided by the municipal administration for development of a new landfill. One site west of Chbar Mon municipality in Samroang Tong (11°30'29.13"N, 104°19'3.22"E), and one site in Kong Pisey district. The first of these options is in a remote location over 30km from the city center and with very poor access dirt road and thus not suitable for landfill development. The site at Kong Pisey is approximately 15 km (direct) from the Chbar Mon City center. However, the site can only be reached by National Highway 4 and National Highway 41, with a combined travel distance of 36 km. It is thus not suitable due to distance from city center and also being located in an environmentally and culturally sensitive area. Further site options are being discussed with the provincial and municipal administration of Kampong Speu; these are not expected to be assessed prior to appraisal.

Kandal

Option 1: Rehabilitation and Extension of Existing Dumpsite in Prekho Village, Sangkat Prekho, Ta Khmao

The existing main dumpsite is located in Prekho Village, Sangkat Prekho, approximately 6 kilometers from Ta Khmao and can be accessed by earth road, about 0.8 km from the city road. The land is publicly owned and is located within a residential area, with a total reported plan area of 2 ha being operated on government land. There are there are approximately 100 individuals engaging in waste picking activities for all or part of their livelihoods and who mainly live in a village around the dump with limited access to water and sanitation. There is a small incinerator on the site without environmental controls. Land for extension is insufficient due to surrounding developments and location in a high value development zone.



Figure 5: Existing Dumpsite in Prekko Village, Sangkat Prekko, Kandal

Main advantages, disadvantages and preliminary conclusions on Option 1: Rehabilitation of the Existing Dumpsite are listed below.

Table 5: Advantages, Disadvantages, and Preliminary Conclusions of Option 1: Rehabilitation of the Existing Dumpsite in Kandal

Advantages	Disadvantages	Preliminary Conclusions
<ul style="list-style-type: none"> • The existing site is already used as a landfill and will require further investment for rehabilitation. • The site has good access to a nearby main (paved) road and city service area. • Additional land around the site is available. • Cost savings can be made through expanding the existing site and shared infrastructure and environmental management systems (E.g. roads, drainage, leachate treatment plant, etc.) with the current cells. • The site is not reported as prone to flooding and generally not close to environmentally sensitive receptors or cultural heritage sites. • The site (from initial investigations) is underlain with impermeable clays 	<ul style="list-style-type: none"> • Site is less than 1.0 km from residential settlements, which are rapidly expanding; community has complained of being directly impacted. • Site has shallow groundwater. • Current open dump has no environmental controls and will require extensive rehabilitation. • The incinerator has no environmental controls. • Current waste 'cells' have no liner, leachate collection or treatment, leading to potential pollution of groundwater. • A closure and remediation of the existing site would have high social impacts as the current waste-pickers of the site would need to travel to the new landfill site to continue collecting recyclables and require compensation through livelihood restoration project. 	<ul style="list-style-type: none"> • Preliminary Conclusion: Closure with rehabilitation of existing dumpsite – including small incinerator- appears to be the most suitable option as there is insufficient space for continued use as waste disposal. • Transfer station, composting and recycling facility could be located at the existing site to continue to provide access to the waste resources to the waste pickers. The small incineration facility would need to close due to the lack of environmental controls. • The existing landfill site is within a high value development zone. • The current site can be rehabilitated back to a point where it is suitable for future residential / industrial development with substantial revenues. • In case of full closure, current waste-pickers would need to be integrated into new facilities, provided with access to new site, or other livelihood support • Further analysis based on alternative landfill site options

Option 2: Closure of existing dumpsite and development of new landfill

Three sites were originally provided by the municipal government as potential options for new landfill development,

Figure x: Site options assessed for Kandal



Figure 6: Original landfill site options a (left) and b (right) in Kandal

Both sites a and b are not suitable as these are worked out quarries and thus not suitable for development as a landfill. Quarries and excavations that go below groundwater level (majority of cases) will backfill with water. If a liner was provided and the site were below the groundwater level, the inflow of water would lift the liner (when waste is not yet in place) and cause failure points. Even if a stable lined cell could be created in the quarry, because the cell would be below ground level, it would require constant pumping to extract leachate as there would be no gravity flow. Significant engineering and associated cost would be required.

Further site options are being discussed with the provincial and municipal administration of Kandal; these are not expected to be assessed prior to appraisal.

Potential Environmental and Social Risks, Impacts, and Mitigation Measures

Risks and impacts of existing sites

Under a 'Do Nothing' scenario, the dumpsites in Siem Reap, Kampong Speu and Kandal will continue to pose a significant environmental, social and public health risk to workers, the surrounding community and the environment. Overall, the project is expected to be beneficial to the country and the people by reducing pollution and protecting the environment, with significantly positive environmental and social benefits. Key existing environmental and social concerns at the sites in the priority project areas of Siem Reap, Kampong Speu and Kandal include the following:

Table X: Environmental, Social and Public Health Concerns at the Existing Dumpsites

Environmental	<ul style="list-style-type: none"> • None of the existing sites in Siem Reap, Kampong Speu, and Kandal comply with national and/or international minimum sanitary landfill infrastructure and operating standards; • Sites lacking lined engineered cells, leachate collection, drainage, and leachate treatment has resulted in environmental impacts to surface and ground water quality and soil through uncontrolled, untreated leachate discharge; • Lack of intermediate cover and capping and closing of full cells impacts air quality and surrounding environment through odor, GHG discharge, and flies and windblown waste;
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	<ul style="list-style-type: none"> • Fires are common through lack of proper landfill management; this again impacts air quality;. Odor, dust, and smoke are seriously an issue which has not been managed • Plastics are about 10% of the total waste, the Mekong River is among the most polluted rivers worldwide, with Phnom Penh being one of the major sources of this pollution and impacts of plastic pollution to obstructing wastewater run-off, causing air pollution in case of burning and impacts to ecosystems. Recycling activities are only evidenced for plastics, plastic bottles and aluminum cans. Municipal waste recycling is almost nonexistent. • Unregulated dumping of hazardous waste, it has been regulated by laws and regulations, but practices have not been enforced. Medical waste is required to be disposed of separately. These have an impact on the dumpsites both in terms of water quality and provides a public health risk; villagers typically rely on underground, or surface water and water pollution affects community health and safety; and • Noise and pollution result from poorly managed transfer stations (TPS) particularly in Siem Reap, which share many of the environmental problems cited at the landfill, and from transportation of waste on open trucks.
Social	<ul style="list-style-type: none"> • There is no monitoring of informal waste-pickers working in landfill sites in Siem Reap, Kandal, and Kampong Speu. There are no regulations that ensure their health and safety. Many of these waste-pickers are women and children. Some of the waste-pickers live on or near the waste dumps and derive their main income from waste picking. • Communities living near landfills and along waste transport routes are routinely impacted by pollution from the SWM sites and its operations. These impacts include air pollution from burning of waste and vehicle exhaust; noise pollution from trucks; and pollution of water sources. . • There is lack of controlled access to dangerous areas in landfill sites, which may pose risks to the health and safety of waste-pickers and other members of the surrounding communities. • Communities have limited awareness of their role and responsibility in good solid waste management, waste segregation, waste reduction, and recycling (3R). Burning of waste and dumping in open spaces and water courses are common practices. Public awareness campaigns are limited.
Public and Community Health and Safety and OHS	<ul style="list-style-type: none"> • Poor operation of the landfills and poor waste placement result in dangerous conditions on landfill cells where unstable waste masses are prone to collapse especially in wet season, posing risks to sanitation workers, waste-pickers, and surrounding communities. • Lack of training, awareness, and provision of safety equipment (PPE) put both sanitation staff and waste-pickers at risk. • Illegal dumping of hazardous waste, in particular hospital waste, on the landfill put the health and safety of workers and waste-pickers at risk. • Poorly operated transfer stations and transport equipment pose risks to health and safety of sanitation workers and waste-pickers.

Though the project will reduce pollution and protect and improve the environment, it is possible that potential environmental and social impacts and risks may arise with varying degrees during the specific activities of the project. The anticipated activities have been preliminary screened to determine the significance of associated environmental and social risks. The screening has been undertaken in line with the WB ESF Environmental and Social Risk Classification rating risks High, Substantial, Moderate and Low Risks, based on a range of relevant factors.

As per the analysis of potential risks and mitigation measures of activities subprojects envisaged under Project, the summary of the preliminary environmental and social risks is shown below. For each participating municipality, there will be one detailed design and one site specific ESIA for all infrastructure activities within that municipality, so while the risk rating for transfer stations, composting and material recovery facilities is lower, they all will be included in one Environmental and Social Impact Assessment and Management Plan.

Table X: Summary of Preliminary Ratings of Environmental and Social Risks

Activity	Preliminary Risk Rating
Construction and operation of a new landfill	Substantial (Environment) and High (Social)
Operation of landfill	High (Environment) and High (Social)
Construction and operation of transfer stations	Moderate (Environment and Social)
Construction and operation of material recovery facilities	Substantial (Environment and Social)
Construction and operation of composting facilities	Substantial (Environment and Social)
Rehabilitation/extension of a landfill	High (Environment and Social)
Risk that poorly implemented closure of a dumpsite will result in source of pollution and contamination and impacts on waste pickers	High (Environment and Social)
Collection equipment, TA activities, including capacity building, policies development, outreach activities, strengthening municipalities in SWM, etc.	Low, E&S screening, and inclusion of potential impact as part of the TA (Environment and Social)
Risks that closure of the dumpsite will cause disruption to the access to waste resources to waste-pickers (including children) and that the OHS condition in the material recovery facilities will not be properly implemented	High (Social)

The site-specific environmental and social assessment will be carried out after sites have been selected, including also the environmental and social selection criteria, and the specific details and detailed engineering design are defined. This will be determined during the first year of the project implementation. The preliminary risk rating will also be reconsidered at this stage.

For Siem Reap, a preliminary ESIA and ESMP are prepared prior to appraisal, considering alternative site options to the existing dumpsite, the environmental and social aspects of solid waste disposal, solid waste treatment infrastructure, and including social and economic assessments for the potential project-affected community at the current open dumpsite and site options. A detailed ESIA will be carried out after site selection and detailed designs are defined during first year of project implementation.

Technical Assistance Activities

The technical assistance activities of this project include Component 1 and Component 2. The proposed technical assistance activities require no civil construction works. However, establishment of solid waste and plastics policies and regulations under Component 1 and Component 2 may lead to downstream activities such as promoting plastic waste recycling, composting, reduction of plastic packaging, construction of processing facilities, promotion of alternative products or technologies, or others. Impacts of TA activities are considered as low risk. In cases where particularly vulnerable groups, such as waste-pickers may be affected, potential downstream impacts will be assessed based on detailed project activities and consultations be required.

Infrastructure Investments

Targeted priority lower-costs SWM investments for participating municipalities will be provided under Component 3. This includes construction of solid waste and plastic management infrastructure for proper collection, transfer, treatment/recycling, and disposal of solid wastes and plastics, including landfills, transfer stations, and intermediate waste treatment facilities such as material recovery facilities and composting facilities, including

potential access roads as well as remediation of contamination of existing dumpsites. Risks and impacts are assessed for activities during construction and during operation phase.

Environmental Risks – Construction phase

Impact	Description	Preliminary mitigation measures
Air quality	Civil works will be required in case of closing/rehabilitation/ extension of existing dumpsite, development of new landfill, MRF, composting facility, access road, and other facilities. Construction activities can cause temporary ambient air pollution.	<ul style="list-style-type: none"> • Monitoring of air quality in residential areas during construction phase to be put in place • Limit construction hours (day times) • Stabilize the exposed surfaces • Minimize activities that suspend dust particles • Apply water to the areas to be excavated, loading and unloading areas and unpaved roads • Develop a wheel wash at the entrance to public roads or exit of the landfill construction site • Implement speed controls on-site • Maintain enough loading capacity of lorries and barges to avoid spillage • Cover soil stockpiles with erosion control blankets • Use hoarding to avoid wind-blown dust • Apply good construction practices
Noise	Civil works will be required for closing/ rehabilitation/ extension of landfill, development of new landfill, MRF, composting facility, access road, and other facilities. Construction activities can cause temporary noise pollution.	<ul style="list-style-type: none"> • Generally, it is expected that the noise will not be high enough to interrupt sleep or disrupt normal activity. • It is anticipated that construction activities will not be operational during the late hours; therefore the impact on evening averages of ambient noise will be little. • Optimize the use of machines and noisy equipment • In case of receiving complaints from neighboring areas regarding noisy operations acoustic barriers can be placed • Construction works should be stopped at night-time;
Odor	Odor impact will occur, causing nuisance to neighboring communities during the implementation of the construction work for the rehabilitation of the existing site but will be significantly minimized after the works are completed	<ul style="list-style-type: none"> • Application of cover for the waste at existing dumpsite for both options. • Installation of landfill gas treatment system • Leachate treatment system • Use of odour counter actant and/or masking sprays in case odor is a chronic problem.
Road safety	Civil works will be required for closing/ rehabilitation/ extension of landfill, temporarily increasing traffic at construction area	<ul style="list-style-type: none"> • Close monitoring and enforcement of road regulations • Training for drivers • Time regulations for road activities • Usage of access roads outside of settlement areas • Reporting system for residents
Soil integrity	Soil will be damaged during the excavation works for the rehabilitation of the existing site but the overall soil quality will be improved after the works	<ul style="list-style-type: none"> • The area allocated for soil storage should be selected so that no un-favored pattern of surface water collection should be developed (e.g. stagnant water ponds for long times). • Ensure that the height of the spoil will not cause unaccepted visual impacts to adjacent areas

	are completed. Soil will need to be excavated for the development of new cells or landfill and for cover of old cells	<ul style="list-style-type: none"> • Use excavated soil in the landfill development and daily operations: usage as daily cover of waste, or usage in establishing side embankments for containing the waste. • Use excavated soil for coverage for closing of old cells (re-cultivation layers of the final cover) • Soil excavated in the direct vicinity of the existing dump site has to be sampled to assess the extent of contamination. If found contaminated, it shall only be used for daily operation
Soil erosion and risks or UXOs	<p>The excavation works can trigger soil erosion. However, upon completion of the works, the overall impact will be positive, as soil stabilization measures will be taken during the rehabilitation of the existing site</p> <p>There is a risk of unexploded UXOs</p>	<ul style="list-style-type: none"> • Installing erosion matting over the stockpiles if further surface compaction and/or seeding fails • Protect the stockpiles from flooding and run-off by placing berms or equivalent around the outside where necessary • Protection of most susceptible soil surfaces • Protection of drainage channels • Survey of UXOs
Topsoil losses	Topsoil losses may occur during the construction works mobilization in relation with setting camps, materials plants and other related infrastructure	<ul style="list-style-type: none"> • Storage of topsoil in stockpiles • Storage locations that prevent the stockpiles being compacted by vehicle movements or contaminated • Segregation from subsoil stockpiles • No storage where there is a potential for flooding • No storage close to streams, subject to local topography
Water quality	The construction works can cause contamination of surface and underground water resources; however, the overall impact will be positive as the rehabilitation of the existing site will stop leakages of untreated effluents and waste waters	<ul style="list-style-type: none"> • Minimize land disturbance • Manage run-off and sediment exiting to disturbed areas • Manage drainage within the disturbed areas • Manage ground cover • Good construction quality assurance procedures and protocol during installation of the basal, lateral and top containment engineering systems • Leachate treatment
Improper management of wastes	Wastes of various origin to be generated during the construction works might be improperly sorted out, stored, transported and disposed, causing pollution of air, soil and water	<ul style="list-style-type: none"> • Provide for disposal facilities with local authorities. Allow local communities to utilize any excess rock, which may be left following reuse • All waste from the construction site will be disposed of in accordance with local environmental regulations and at sites approved by the local authorities • Hazardous wastes (contaminated rags; oil residue, paints etc.) will be disposed as agreed with local executive and environmental authorities • The personnel involved in the handling of hazardous and non-hazardous waste will undergo specific training in waste handling, waste treatment and waste storage
Landscape disturbance/Visual and aesthetic impacts	The rehabilitation of existing sites is expected to cause positive impact on landscapes which are	<ul style="list-style-type: none"> • Adequate site selection through thorough site assessment process • Limit the construction area according to the planned detailed engineering design

	currently disturbed in all cities by unregulated landfills Construction also has negative aesthetic impacts (dust, movement of heavy machinery, quarrying and other extraction of construction materials, stockpiles, etc)	<ul style="list-style-type: none"> • Location outside of zoning of vital habitats and ecosystems • monitoring of species presence and pollution • flood protection measures, if needed • Construction of a buffer zone with tree screening
Disturbance to biodiversity/ flora and fauna	Rehabilitation of existing sites might cause temporary disturbance to flora and fauna due to the implementation of construction works.	<ul style="list-style-type: none"> • Adequate site selection through thorough site assessment process • Limit the construction area according to the planned detailed engineering design • leachate collection and treatment system • installation of lining systems • zoning outside of vital habitats and ecosystems • monitoring of species presence and pollution • flood protection measures
Cultural heritage	Potential impacts on cultural heritage sites particularly in Siem Reap on Angkor sites.	<ul style="list-style-type: none"> • No impacts on the known Cultural Heritage sites and objects are envisaged from the rehabilitation of any existing sites. To be further defined by detailed site-specific ESIA

Environmental Risks – Operation phase

Impact	Description	Preliminary mitigation measures
Landfill leachate	Existing dumpsites in Siem Reap, Kampong Speu and Kandal all lack leachate collection and treatment systems, thus causing severe pollution to the environment. Project will strongly reduce pollution due to rehabilitation/ closure of existing sites.	<ul style="list-style-type: none"> • Lining and Leachate Collection System • Waste placement and daily cover • Leachate Reduction • Leachate Treatment Plant • Ensure access to safe water supply for local communities • (Ground)water quality monitoring
Ecosystems, water, biodiversity	All current sites are developed and operated as open dumpsite, without any measures in place to prevent pollution. Some potential sites are located in sensitive areas of high ecological significance.	<ul style="list-style-type: none"> • Thorough site assessment process to prevent sites to be located in sensitive areas • Daily waste coverage • Leachate collection and treatment system • Installation of lining systems • Zoning of vital habitats and ecosystems • Monitoring of species presence and pollution • Flood protection measures • Not accepting hazardous waste
Landfill gas	Existing dumpsites in Siem Reap, Kampong Speu and Kandal all lack gas collection and treatment systems, thus causing air pollution. Project will significantly reduced emissions.	<ul style="list-style-type: none"> • Landfill Gas Collection and Treatment (flaring) • Composting facilities
Odor	Existing sites in all three cities cause significant odour due to operations as open dumpsite. Project activities	<ul style="list-style-type: none"> • Daily waste cover • Installation of gas collection and treatment system • Material recovery and composting facility

	will significantly reduce odour compared to current status.	
Hazardous waste	Currently no monitoring of disposal of hazardous waste at existing sites. Reduced risk for disposal of hazardous waste mixed with municipal waste due to improved operations and regulations	<ul style="list-style-type: none"> • Municipal regulations for landfill operation to provide a list of acceptable and nonacceptable waste. Non-acceptable waste needs to be strictly forbidden from admission • Awareness to avoid a mixing of waste • All workers to be provided with protection equipment, training in waste handling, and strict supervision. • Prepare emergency response plan
Visual impacts and aesthetics	Rehabilitation of the current sites and mitigation measures (incl. daily waste coverage) will lead to improvements in current aesthetics, particularly affecting nearby communities	<ul style="list-style-type: none"> • Daily waste coverage • Windbreak trees • Fencing of site and buffer zone
Impacts after Landfill Closure	In case of development of new landfills, the closing of the existing dumpsites are regarded as an associated facility if done by GOC and subject to ESF. Key environmental impacts without adequate closure include air pollution due to continuing waste decomposing processes, risks of open fires, and contamination of groundwater due to uncollected leachate	<ul style="list-style-type: none"> • Final closure cover: final closure cover is key to reduce and prevent water pollution from leachate as well as minimizing odour impacts, landfill gas generation, visual impacts, disease vectors, and prevention of slope collapsing. • Final capping system be installed progressively through time after the waste has been placed to its ultimate level over each cell or portion thereof. • Establishment of impermeable linings may be considered, as well as development of alternative water sources for surrounding residential a • Measures to minimize remaining leachate after closure will depend on detailed assessments on groundwater pollution, soil permeability, and impacts on any nearby residential areas.

Social Risks – Prior and during construction phase

Impact	Description	Preliminary mitigation measures
Resettlement, economic displacement and livelihoods impacts and Occupational Health and Safety	<p>This may include impacts on waste pickers at the existing dumpsite; livelihood impacts on children; impacts on landowners; impacts on nearby communities.</p> <p>Children waste pickers specifically under 14, cannot be permitted to participate in waste recycling activities and will require livelihood restoration support and further livelihood support options</p> <p>Impacts due to insufficient applicable OHS procedures</p>	<ul style="list-style-type: none"> • General impact on waste pickers impact will be positive as waste pickers will continue to have access to the waste resources under improved Occupational, Health and Safety conditions. • Significant attention to OHS procedures and supervised by supervising engineer • Meaningful consultations with neighbouring communities, waste pickers and other potential affected people a potential site • Development of Resettlement Plan and Livelihood Restoration Plan and monitoring of implementation • Priorities site options that ensure continued access to waste resources for waste pickers • In case of lost access to waste resources provision of Livelihood restoration assistance

		<ul style="list-style-type: none"> • Framework and Livelihood Restoration Framework and the ESF. • Ensure awareness of job opportunities within surrounding communities and consideration for vulnerable groups through further livelihood support activities
Temporary job opportunities	Rehabilitation and extension works at the existing dumpsites and construction of other waste facilities can provide job opportunities for residents of nearby villages and towns. In all cases, residents living in the vicinity are already engaged in the local recycling sector.	<ul style="list-style-type: none"> • To maximise the job benefits for the local population, efforts should be made to ensure that these opportunities are known to the local population, which could consist of transparent information sharing about upcoming job opportunities and exploring of opportunities to encourage local firms as part of consortia for construction tenders.
Community Health and Safety	Rehabilitation and extension works at the dumpsites and construction of other waste facilities can have negative impact to neighboring communities health and safety including impacts of influx of workers; strain on local resources; and accompanying risks to SEA/SH.	<ul style="list-style-type: none"> • Supervision of the construction works and clear obligations and code of conduct for firms. • Regular information on progress and Environmental and Social compliance for local communities • Establishing a clear grievance redress system • Monitor labor management procedures • Communicate information about the hours of construction with the local population • Supervise application of OH&S regulations and code of conduct on SEA/SH • Public hearings and meaningful consultations. • Restriction from access to the construction site

Social Risks – During operations phase

Impact	Description	Preliminary mitigation measures
Community Health and Safety and Occupational Health and Safety	Rehabilitation and extension of current dumpsites into engineered landfills, or closure of existing sites and development of new sites, will greatly reduce pollution related health and safety risks for neighboring communities and workers due to improved OHS practices.	<ul style="list-style-type: none"> • The application of modern landfill operations and inclusion of performance indicators for landfill management and operation performance in contracts, for instance waste compaction and daily soil coverage, will limit the potential for the development of resident populations of vermin and pests • Landfill gas collection and composting to remove larger part of the organic fraction • Leachate collection and treatment • Lining system and daily waste cover and in case of closure final waste cover • Fencing of site, registration procedures • Integration of waste pickers into the waste material recovery and composting facilities through provision of PPE, training and adherence to OHS procedures • Provision of appropriate PPEs and training • Health checks • Provision of safe water supply to surrounding communities • Showers, washing basins, clean toilets, changing rooms, etc. at facilities

Job opportunities	The project is foreseen to created various job opportunities particularly for villages in close vicinity to the landfills. This may include jobs for daily operations at the landfill, waste sorting at the material recovery facility, composting facility, collection, and other areas along the waste management chain. Operations will require jobs for various backgrounds and qualifications including for poor people with low and medium skills	<ul style="list-style-type: none"> • Ensure awareness of job opportunities within surrounding communities and consideration for poor and vulnerable groups. • Transparent information sharing about the created job opportunities particularly in local areas • Local sourcing of supplies and materials whenever possible
Impacts on property value	The project foresees a wide range of measures that will positively affect land prices around the existing dumpsites.	<ul style="list-style-type: none"> • Suitable landfill siting and selection process. • Proper mitigation of environmental and social impacts of construction and operation thereby minimizing impacts to neighboring communities and accompanying property values. • Fencing and buffer zones with measures against visual impacts (tree screens

1 PROJECT DESCRIPTION

1.1 PROJECT BACKGROUND

Cambodia has experienced remarkable economic growth over the past two decades. Its urbanization rates are still relatively low but are expected to further increase in the coming years. Over the past two decades, Cambodia has undergone a significant transition, reaching lower-middle-income status in 2015 and aspiring to attain upper-middle-income status by 2030.

The impressive increase of tourism² in Cambodia has allowed the sector to become an important engine for growth, employment generation, and investment attraction. Cambodia received an estimated 6.6 million tourists in 2019, up from less than 250,000 in 1995 (MOT, 2020). In 2017, the tourism industry contributed around 32.4% of Cambodia's GDP, making tourism an important source of foreign exchange, investment, and employment (OECD, 2019). Siem Reap, with its world-famous Angkor Wat, received 1.6 million tourists by air alone, which represents about 25% of the total international tourist arrivals in 2019.

The COVID-19 shock, propagated through falling global demand, supply chain disruptions, and nationwide lockdowns, is expected to hit Cambodia's economy and tourism hard. Close to 51,000 jobs in Cambodia have disappeared from the once thriving tourism sector as 2,838 tourism-related businesses have shut down or temporarily closed due to the COVID-19 crisis as of September 2020, according to the Ministry of Tourism (MOT) (World Bank, 2020). It is estimated that about 62% of COVID-19-affected tourism businesses are based in Siem Reap Province, and Siem Reap accounts for 14,702 workers who are out of work. The total foreign arrivals in Cambodia in the first nine (9) months of 2020 dropped by 74.1% to 1,247,680, according to the ministry's report, but tourism is expected to rebound once vaccines are deployed throughout 2021 (Panha, 2020).

The continued growth of cities in the country will require higher levels of infrastructure and municipal service levels, which are currently facing underinvestment together with weak institutional capacity in policy, planning, implementation, and enforcement. There is a risk that the lack of municipal services can hamper growth and have an impact on Cambodia's tourism assets that are an important engine for growth.

Over the years, a substantial increase in solid waste generation has been observed. In 2017, 3.65 million tons were generated, or over 10,000 tons daily. Per capita waste generation in urban areas is twice that of the rural areas, at 1 kilogram and 0.5 kilogram per capita respectively (UNEP and COBSEA, 2020). Of these generated municipal wastes, 48% are dumped in bodies of water or burnt, 41% are brought to dumpsites and landfills, and only 11% are recycled (UNCRD, 2019).

Plastic leakage into the environment, waterways, and ocean forms a particularly crucial part of solid waste mismanagement. About 20% of the generated municipal solid wastes are

² The COVID-19 pandemic and its impacts in falling global demand, supply chain disruptions, and nationwide lockdowns, is expected to significantly affect Cambodia's economy and tourism industry. The MOT reported that about 62% of COVID-19-affected tourism businesses are based in Siem Reap Province, and Siem Reap accounts for 14,702 workers who are out of work (Vannak, 2020).

plastic, which are mainly produced in cities. Of the waste generated in Phnom Penh, 17.3% are plastic, while share of plastic among the municipal solid waste of Sihanoukville and Siem Reap are 34% and 20.7% respectively. Increasing evidence suggests that unique and endangered ecosystems found in these regions are suffering under increasing quantities of marine pollution, in particular plastics.

1.2 PROJECT DESCRIPTION

The Cambodia Solid Waste and Plastic Management Improvement Project (the Project) aims to improve solid waste and plastic management in Cambodia. To achieve the objective of improving solid waste and plastic management and capacity in selected cities and nationally, the project will support an approach that combines support for policy development, regulatory improvements, and monitoring at the national level with support for selected provinces and municipalities. At the local level, the project will support the implementation of Cambodia's Sub-decree 113 that specifies in Article 9 that "it is the cities and district administration that have the role to manage municipal solid waste within their jurisdiction." This is consistent with good international practice of solid waste being a service managed by the local government to ensure citizens can provide direct feedback for the services. The project will include support for improvements in the waste collection, transport, and recovery/treatment/recycling/disposal and improvements in operational cost recovery by improving waste fee collection. It will also support improved monitoring and enforcement of private waste management companies, information availability and reliability, and citizen engagement and public information. The project will also support plastic policies and improved plastics management to reduce the amount of waste that needs to be collected or landfilled, increase recovery and recycling, and contribute to reduced plastic leakage to the waterways and ocean.

The objectives will be achieved through systemic interventions and activities financed through the IDA Credit to three main components and one contingency component: (a) a central component at the national level (Component 1) focusing on policies, regulations, and institutional strengthening at the national level; (b) a subnational policy and institutional strengthening component (Component 2) comprising local policy, regulations, and monitoring of technical assistance and capacity building for participating municipalities; and (c) investments to improve solid waste and plastic management and increase recycling and treatment (Component 3). Component 4 is the Contingent Emergency Response Component. The project will be implemented over a six-year period.

The Project consists of four (4) components that will be implemented over a six-year period, namely:

- Component 1:** Development and Strengthening of National Legislative, Regulatory, Policy, and Institutional Frameworks for Solid Waste and Plastic Management
- Component 2:** Integrated Solid Waste and Plastic Management, Planning, Monitoring and Capacity Building for the Participating Municipalities
- Component 3:** Solid Waste and Plastic Management Infrastructure
- Component 4:** Contingent Emergency Response

The design of the project is based on a flexible and adjustable approach that allows for coordination and collaboration with other financing sources for the solid waste infrastructure for the selected municipalities and districts. The design of the project is also based on confirmation of eligibility of participating municipalities for Component 2 and Component 3; these criteria will be included in the POM. The solid waste sector development through the national- and local-level institutional capacity development, funded by the project, has also been designed to allow for replication of the approach to improve the solid waste management (SWM) performance adaptable for a variety of different urban and more rural contexts in Cambodia.

1.3 PROJECT SCOPE

The objective of the Project is to improve solid waste and plastic management, and in case of an Eligible Crisis or Emergency, respond promptly and effectively to it.

The project scope is defined in the following three (3) main components and one (1) contingency component.

Component 1: Development and Strengthening of National Legislative, Regulatory, Policy, and Institutional Frameworks for Solid Waste and Plastic Management

Carry out a program of activities aimed at developing and strengthening the legislative, regulatory, policy, and institutional frameworks related to solid waste and plastic management, including: (a) development and strengthening of regulations, sub-decrees, laws (if applicable) policies, and guidelines related to solid waste management with respect to, among others (i) waste classification, planning, reporting, monitoring, enforcement, rural and community waste collection, and database management, and (ii) cost calculation of waste fees, and waste accounting and financial systems; (b) development and strengthening of relevant laws, regulations, sub-decrees, policies, and guidelines related to plastic management to increase reduction, reuse and recycling of plastics; and (c) capacity building of relevant institutions, including the Ministry of Environment (MOE), the Ministry of Interior (MOI), and the Ministry of Public Works and Transportation (MPWT).

Component 2: Integrated Solid Waste and Plastic Management, Planning, Monitoring and Capacity Building for the Participating Municipalities

Carry out a program of activities aimed at building the capacity of the Participating Municipalities and districts for solid waste and plastic management, including through support with: (a) waste and plastic management planning, transaction advisory services, and designing of performance indicators for waste management contracts; (b) development of waste information, financial, and geospatial systems for (waste) fee collection to increase cost recovery; and (c) operational management, and public outreach, awareness, education and citizen engagement activities.

Component 3: Solid Waste and Plastic Management Infrastructure

Carry out a program of activities for the Participating Municipalities and select districts, including: (a) preparation and construction of solid waste and plastic management infrastructure for proper collection, transfer, treatment/recycling, and disposal of solid wastes and plastics, including landfills, transfer stations, and intermediate waste treatment facilities

such as material recovery facilities and composting facilities, including potential access roads as well as remediation of contamination of existing dumpsites and (b) development of relevant guidance documents, such as landfill related regulations, landfill design and operation standards, and contract templates and manuals for landfill management and operation.

Component 4. Contingent Emergency Response

Provide immediate response to an Eligible Crisis or Emergency, as needed.

A CERC Manual is under preparation that will become part of the Project Operational Manual for the Project. Once the CERC is triggered and Environmental and Social Management Framework Addendum will be prepared to supplement the Project's ESMF and an Environmental and Social Management Plan.

Every participating municipality receiving investment financing will first be supported with the technical assistance support and capacity building. This is a key aspect of increasing the quality of solid waste services and enabling sustainability of investments and has been proven effective in other World Bank-financed projects.

The eligibility of the Participating Municipalities for support under Component 2 and 3 will be reconfirmed as part of the Project Implementation as per the criteria to be defined in the POM. The key criteria developed to identify preliminary eligible municipalities for Component 2 included:

- Reform the SWM sector in line with Cambodia's Sub-decree 113 on Management of Municipal solid waste (Sub-decree 113 defines the Municipality to be responsible for SWM)
- Reform of the solid waste operations, specifically revise contracts with private sector waste collector companies to include key performance indicators, operational plans, and reporting requirements in the contracts together with establishment of relevant payments for the services in the contract
- Development and agreement of a cost recovery plan for solid waste services, specifically for operational costs
- Establish a waste management or urban unit at the municipal level, can start as component implementation unit as part of the project.
- Take responsibility for the waste fee collection for households that will be used to pay for the waste collection systems. This can include the establishment of a geo-spatial waste information (registration and accounting) system for waste (and potentially other) fee collection and urban planning.

For Component 3, additional eligibility criteria are applicable, to be further confirmed as per the POM:

- Minimum of 100,000 people with current access to waste collection services (~20,000 households) or, if less, sufficient waste generation from tourism, commercial, institutional, or industrial (non-hazardous) sectors to enable at least operational cost recovery
- For financing of landfills/transfer stations and intermediate treatment facilities: (i) available suitable land either through purchase or negotiated agreement and closure

of old dumpsites or (ii) suitability to rehabilitate the current dumpsite into a sanitary landfill and agreement of purchase or negotiated agreement for the land

- Development and agreement on cost recovery plan for transfer, disposal and intermediate treatment, specifically for operational costs
- Contracts revision with the private landfill management companies to include performance indicators and payments through gate fees

Preliminary identified municipalities foreseen to receive technical assistance and capacity building financing under Component 2 are: (i) Siem Reap, (ii) Kampong Speu; (iii) Kandal, (iv) Battambang and (v) Sihanoukville. The preliminary identified municipalities foreseen to receive waste management and infrastructure investment financing under Component 3 are (a) Siem Reap, (b) Kampong Speu, and (c) Kandal.

Component 3 will also support investment preparation for the solid waste and plastic management investments for proper transfer, treatment/recycling, and disposal of plastics and waste as well as the accompanying environmental and social impacts and management and resettlement/livelihood restoration documents. This investment preparation is envisioned to take place in the first year of project effectiveness, while at the same time the technical assistance and capacity building support to participating municipalities will take place to improve the waste management collection contracts, payments and determine the final waste volumes and composition for which waste equipment and transport, recovery/recycling/treatment and landfill infrastructure is required.

Such preparation of investment for Component 3 comprises of: (i) solid waste management and performance specification designs for the waste management, transport/treatment and landfill infrastructure, (ii) site-specific Environmental and Social Impact Assessments (ESIAs)/Environmental and Social Management Plan (ESMP), Detailed Resettlement Plans (DRPs) and possibly Indigenous Peoples Plans (IPPs), in line with the Environmental and Social Management Framework; and (iii) bidding documents, etc. At national level, development of transport/treatment and landfill design and operation standards for construction operation, closure and aftercare for waste treatment and disposal will be developed, together with landfill management and operation contract template -including payment-, operational manuals.

1.4 IMPLEMENTATION ARRANGEMENTS

1.4.1 Institutional and Implementation Arrangements

The project will be prepared and implemented by existing sector institutions in alignment with sector institutional mandates and in accordance with the government's standard operating procedures on project management for all externally financed projects/programs in Cambodia³. Component Management Units at national level will be established at the MOE, MOI, and MPWT who will be responsible for the implementation of the components for which they are leading as Implementing Agencies and in line with their respective legal mandates. The MOE will be the lead Ministry of Component 1 and establish the Component Management Unit 1 (CMU-1), led by its Department of Solid Waste Management under the

³ Royal Government of Cambodia, Standard Operating Procedures on Project Management for all externally financed Projects/Programs in Cambodia, 2019

General Directorate of Environmental Protection. The MOI will be the implementing agency for the Component 2 and establish the Component Management Unit 2 (CMU-2), led by its Department of Function and Resources under the General Department Administration. The MPWT will be the implementation agency for Component 3 and will establish the Component Management Unit 3 (CMU-3)⁴. Specialized consultants will be required to support project implementation and management. Specifically, in the CMU-3 under the MPWT, qualified social and environmental consultants will be added to be responsible for the Environmental and Social Commitments under the Project.

As part of CMU-2, each municipality participating in the project, will establish a municipal Implementation Unit (MIU) as an operational Solid Waste Management unit that will be part of CMU-2 and also report to CMU-1 and CMU-3. The Municipal Implementation Unit will be responsible for implementation of project activities at municipal level, specifically related to (i) inclusion of performance indicators into waste collection contracts and landfill management contracts; (ii) payment to private waste collection companies and landfill management companies for solid waste collection and disposal services; and (iii) collection of waste fees from households and businesses as required payments for solid waste municipal services and establish a GIS-based (waste) information, monitoring and payment system (financed under Project); (iv) implement regulations, capacity building, public awareness and citizen engagement for solid waste and plastic management at the municipal level; (v) local Project implementation for solid waste system and infrastructure development and, specifically (a) site selection; (b) waste information and payment systems; (c) infrastructure development and supervision/monitoring; (d) environmental and social impacts and mitigation measures, support to land acquisition where needed and livelihood restoration and support, grievance reporting mechanism, citizen engagement and consultations, communication. These activities will be executed under Component 2 under overall management of MOI and the Municipal Implementation Units sustainably embedded in the Municipal Administration for the continuing responsibility and accountability of operation, management and monitoring of solid waste management in the respective municipalities, in line with sub-decree 182.

Given the objective of the project to improve solid waste and plastic management, specifically at the local government level, the Ministry of Interior will be the Executive Agency of the Project to provide overall management, coordination and (consolidated) reporting. As per the Standard Operating Procedures on Project Management for all externally financed Projects, when more than one line ministry is involved in the implementation of a Project, one line ministry is designated as the Executive Agency while the others are the Implementing Agencies. The Executive Agency will provide overall management, coordination and consolidating reporting of the Project, including consolidated audit report.

Steering Committee. The project will be supervised by a Steering Committee (SC) chaired by the MOI as the Executive Agency of the Project. This committee will provide the strategic direction and guidance on the management and operations of the project and will include high-level representation from the MOE, MPWT, Ministry of Economy and Finance (MEF),

⁴ It is to be confirmed during appraisal stage whether this unit will be led by its Sewerage Management and Construction Department, under the General Directorate of Public Works or established separately within MPWT or integrated with the unit responsible for the implementation of the Solid Waste Projects financed by ADB and the national budget.

and the respective provincial governors and municipal mayors of the provinces and municipalities included in the project. The SC will hold semiannual meetings to monitor overall project progress, facilitate inter-ministerial coordination and the removal of any obstacles to the timely and effective implementation of the project, facilitate policy discussion, and provide strategic guidance. The SC will be supported by the CMU-2 in undertaking its tasks including arranging for the meetings.

The roles, responsibilities, and procedures for the project will be detailed in the Project Operation Manual (POM). The manual will be maintained and updated from time to time as needed. It will detail the project management, institutional arrangements with clear roles and responsibilities, financial procedures and management fiduciary responsibilities, staff selection and management, results monitoring and evaluation (M&E), risk assessment and mitigations, environmental and social management, and any other specific reporting requirements imposed by the Bank and Government policies.

1.4.2 Results Monitoring and Evaluation Arrangements

The respective Component Management Units under MOE (Component 1), MOI (Component 2) and MPWT (Component 3) are responsible for collecting and reporting the data/indicators relevant to their specific components. The primary reference for the project's monitoring and evaluation (M&E) activities is the Results Framework (RF). Based on the Theory of Change, the RF describes the PDO-level indicators and the component-specific intermediate indicators, including the measurement, respective baselines, cumulative target values, frequency, data source and methodology, and responsibility for data collection.

The CMUs under the ministries will submit six-month progress reports on implementation progress to the Executive Agency to report progress on implementation of the project and towards meeting the Project Development Objective. The CMUs will also submit quarterly environmental, social, health and safety monitoring reports. These regular monitoring reports will include reporting on the environmental, social, health and safety (ESHS) performance of the Project, including but not limited to the implementation of the ESCP, status of preparation and implementation of environmental and social (E&S) documents required under the ESCP, stakeholder engagement activities as per the SEP, functioning of the grievance mechanism(s). A midterm review of project performance will be carried out by the MOE, MOI and MPWT and the Bank no later than 30 months after project effectiveness.

The project supports greater transparency and accountability to citizens through the incorporation of the Social Accountability Framework (SAF) by promoting community-led monitoring of the quality of solid waste collection services provided by the waste collection companies in the participating eligible municipalities. The ministries will coordinate in developing, implementing, monitoring, and reporting the SAF in the project.

1.4.3 Sustainability

Government commitment and ownership. As detailed earlier, improvement of SWM is a strong government priority and strong buy-in was witnessed from key sector ministries (MEF, MOI, MOE, MPWT, and municipal administrations) during the preparation of this program. There have been a series of missions, meetings, and workshops with key government stakeholders that have shaped program priorities and objectives (summaries listed in Annex).

Government ministries played a prominent role in designing the proposed Project readily demonstrated by the stated demand for strong capacity building and institutional strengthening, prioritized infrastructure investments, and the process of preliminary selecting municipalities. The Project was also coordinated and collaborated with other development partners, international organizations and selected NGOs and private waste companies to identify required types of technical assistance, capacity building and solid waste infrastructure financing. The program is designed to support both short-term and long-term government commitments.

A thorough selection process for identifying preliminary eligible municipalities and provinces was carried out jointly with the MEF, MOI, MOE, and MPWT to select preliminary eligible municipalities and provinces willing and able to develop sustainable SWM services in line with the established eligibility criteria. An overview of the project and participation criteria were presented to all provinces and municipalities during two workshops jointly hosted by the MOI, MOE, MEF, MPWT, and the World Bank in 2019 and subsequent meetings and discussions on site selection, preparation of preliminary ESIA, and prefeasibility study. Municipalities/provinces were required to submit signed letters of intent to the MOI by the provincial governor and interested and potentially suitable municipalities fulfilling key criteria were assessed by the World Bank jointly with the Government of Cambodia. The eligibility of the municipalities and provinces for support under Component 2 and 3 will be reconfirmed as part of the Project Implementation as per the criteria to be defined in the POM.

Strengthening the local governments' capacity, monitoring and enforcement function, and public outreach/citizen engagement. Increased responsibility and capacities by municipal governments will help sustainability of SWM and are thus a key focus of the project (specifically under Component 2). Every municipality receiving investment financing will thus be supported with technical assistance and capacity building. The project will increase the technical and organizational capacity of participating selected municipalities to (a) enhance the performance of the private solid waste collection services with improved waste collection and sorting; (b) improve the financial sustainability of SWM through local government regulations and establishment of a system for collection of (waste) fees and focus on operational cost-recovery plan; (c) improve waste planning, financial and environmental evaluation of waste services, procurement, monitoring, inspection, and control; and (d) increase the public awareness and citizen engagement for waste management and waste/plastics prevention, reduction, and recycling as well as cleanliness.

Improving financial sustainability with focus on operational cost-recovery. Municipal units will be strengthened in line with Sub-decree 113 and supported. Municipal and central government will also be supported to take the responsibility for collection of the waste fees as a municipal service and allowing for payments to the private solid waste collection companies in return for incorporation of key performance benchmarks in the solid waste contracts. The project will emphasize strengthening the local and national governments' ability to effectively increase revenues for waste management. Cost recovery plans will be mandatory for participating municipalities to ensure improvement of (operational) cost recovery. Investments will focus on adequate lower-cost technologies in line with the financial capacities, and respective tariff models will be developed. A geospatial information, financial management, and a waste information system as well as supporting legislation and guidance methodologies from the national level will be established. This geospatial and waste

information system suitable for collecting waste fees from households is planned to be suitable for other revenue collection and spatial/environmental planning purposes.

Environmental and social sustainability. Project implementation will involve strong participatory mechanisms at the municipal and national ministry level, based on the SEP (including its GRM). Sub-projects financed under the project will require environmental and social screening, an assessment of potential environmental and social risks and impacts, and the preparation and implementation of acceptable environment and social instruments including free and informed consultations with potential affected people/communities for mitigation measures. Environment and social training will be provided regularly as part of the program's capacity-building activities to all stakeholders, including project staff of the participating local governments and consultants (capacity assessment and training needs are incorporated in the ESCP). Regular monitoring reports on the ESHS performance of the Project, including but not limited to the implementation of the ESCP, status of preparation and implementation of E&S documents required under the ESCP, stakeholder engagement activities, functioning of the grievance mechanism(s) will be prepared by implementing ministries for their respective component and reported to Executive Agency. Sustainability will be further ensured through the substantial inclusion and participation of urban poor communities with local municipalities in the lead. Consultations will be based on the SEP, with mechanisms for monitoring diversity and levels of participation. This will include disaggregated information on participants and the feedback provided by women and vulnerable groups in consultations, surveys that may be used to inform the design and implementation of proposed waste management interventions.

1.5 THE GOALS AND SCOPE OF THE ESMF

The purpose of this Environmental and Social Management Framework (ESMF) is a management tool whose format is in line with the requirements of the World Bank's Environmental and Social Framework and the laws and regulations in Cambodia. The ESMF provides: (i) the framework for environmental and social assessment of subprojects, (ii) initial screening and potential significance of environmental and social risks of sub-projects foreseen under the Project; and (iii) identifying appropriate methods and tools and the principles, rules, guidelines, and procedures to assess and manage the environmental and social risks and impacts of the sub-projects under the Project. It clarifies the measures and plans to avoid, minimize, reduce, mitigate and/or offset adverse risks and impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for addressing project risks and impacts, including on its capacity to manage environmental and social risks and impacts.

The World Bank's (WB) new Environmental and Social Framework (ESF), which came into effect in October 2018, is applied to the proposed project, along with World Bank Group (WBG) Environmental, Health, and Safety (EHS) Guidelines on waste management facilities and examples of Good International Industry Practice (GIIP).

The ESMF serves as a mechanism for the management of environmental and social impacts of the sub-projects under the Project. The ESMF will guide the following:

Preparation of (i) site-specific ESMPs; (ii) Detailed Resettlement Plans in case of physical or economic displacements and (iii) Indigenous Peoples Plans in case of presence of indigenous peoples for the sub-projects under the Project;

The ESMF aims to (i) provide a preliminary analysis of environmental and social risks and impacts of the technical assistance and investments foreseen to be financed under the project; (ii) describe procedures and responsibilities for undertaking site-specific ESIAs/ESMPs and clearing and disclosing respective documents; and (ii) specify the appropriate roles and responsibilities, and outline the necessary reporting procedures for managing and monitoring environmental and social concerns related to the activities for all components, Components 1, 2 and 3 and emergency component of the Project. Finally, the ESMF aims to establish the project funding required to implement the ESMF requirements.

The ESMF, a framework approach, is an appropriate instrument for the Project approval, as the municipalities and investments to be selected for the project will be determined partly through preparation and partly during implementation based on agreed eligibility criteria. The project will follow a framework approach and as such municipalities and investments are subject to confirmation on the basis of the agreed eligibility criteria in the first year of project effectiveness. Municipalities that will receive solid waste landfill and treatment infrastructure under component 3 will first receive financial technical assistance support under component 2 for investment preparation in the first year of implementation. There are no final sites selected for Project investments by appraisal of the Project as per the Environmental and Social Policy definition (ESF, para 7).

In addition to the ESMF, a preliminary but robust ESIA for Siem Reap, including social risks and impacts, community health and safety measures and consistent with the ESMF is prepared prior the project appraisal.

1.6 CURRENT SITUATION OF SOLID WASTE MANAGEMENT IN CAMBODIA AND TARGET CITIES

Overview of Solid Waste Management in Cambodia

Projections based on 2013 to 2020 assumptions pegged Cambodia's waste generation at 4 to 7 million tons per year. Waste collection is largely limited to urban areas. Waste collected and transported to dumpsites in urban areas was approximately 317,550 tons in 2004, increasing to 630,679 tons in 2011, and rising to 1.3 million tons in 2016. The increase of municipal solid waste disposal to 106 landfills across the country is caused by economic growth, increased urbanization, and tourism.

In urban areas, waste collection is carried out by private companies under the supervision of local authorities and technical line agencies. Private companies collect the waste and deposit at landfills. There is limited monitoring and regulation of private waste companies, and local governments, who are in charge for solid waste management under sub-decree 113, lack the capacities and financial means for taking responsibility.

Even when solid waste is collected, waste treatment and disposal remain a major challenge. Most landfills in Cambodia are generally in poor condition and operated as open dumps

without any compaction and periodic soil coverings/layering. Many are at the end of their capacity limit. Most landfills have unsafe working areas for waste-pickers, that is, steep slopes and open waste masses where there is a risk of fire, subsidence, and exposure to hazardous waste. Waste-pickers in landfills traditionally attract the marginalized poor and vulnerable sectors of the community including women and children. Therefore, landfill conditions negatively affect the health, safety, and social conditions of waste-pickers. Basic infrastructure, such as leachate treatment systems, gas capture systems, weighbridges, and others, is often lacking. At many landfills, such as in Siem Reap, a 'waste pool' and 'leachate pond' are severe environmental hazards. Toxic waste components are contaminating surface water and groundwater, including adjacent farmland. Uncollected methane significantly contributes to national greenhouse gas (GHG) emissions and provides a high risk of landfill fires.

The non-collected waste is often openly burned; informally buried; or disposed in streets, canals, rivers, and parks. Solid waste burning can be a significant and costly source of air pollution in urban areas. Waste burning contributes to respiratory infections for urban residents, resulting in significant health damages and lost working days. Uncollected waste leads to increased pests and diseases and lower property values and decreases the city's attractiveness to outside investments. Poor and vulnerable populations are the most likely to suffer from inadequate sanitation due to uncollected waste, which can be a heavy financial burden through health-related expenditures and lost productivity.

Cambodia does not separate hazardous waste from household and does not also have landfills specifically for hazardous waste. The flowchart in Error! Reference source not found. shows the process as to how the current solid waste management in Cambodia operates. The waste generated from industrial and general sectors has a probability of falling to illegal dumping while a certain portion of the wastes generated from these sectors would fall into its proper dumpsites. A certain portion of general wastes also falls to waste buyers, which would eventually land to waste recyclers. The waste-pickers also get waste from waste storages, as these wastes would eventually be sold or traded to waste recyclers for waste buyers and waste-pickers makes use of the generated waste from various sectors as their day-to-day livelihood.

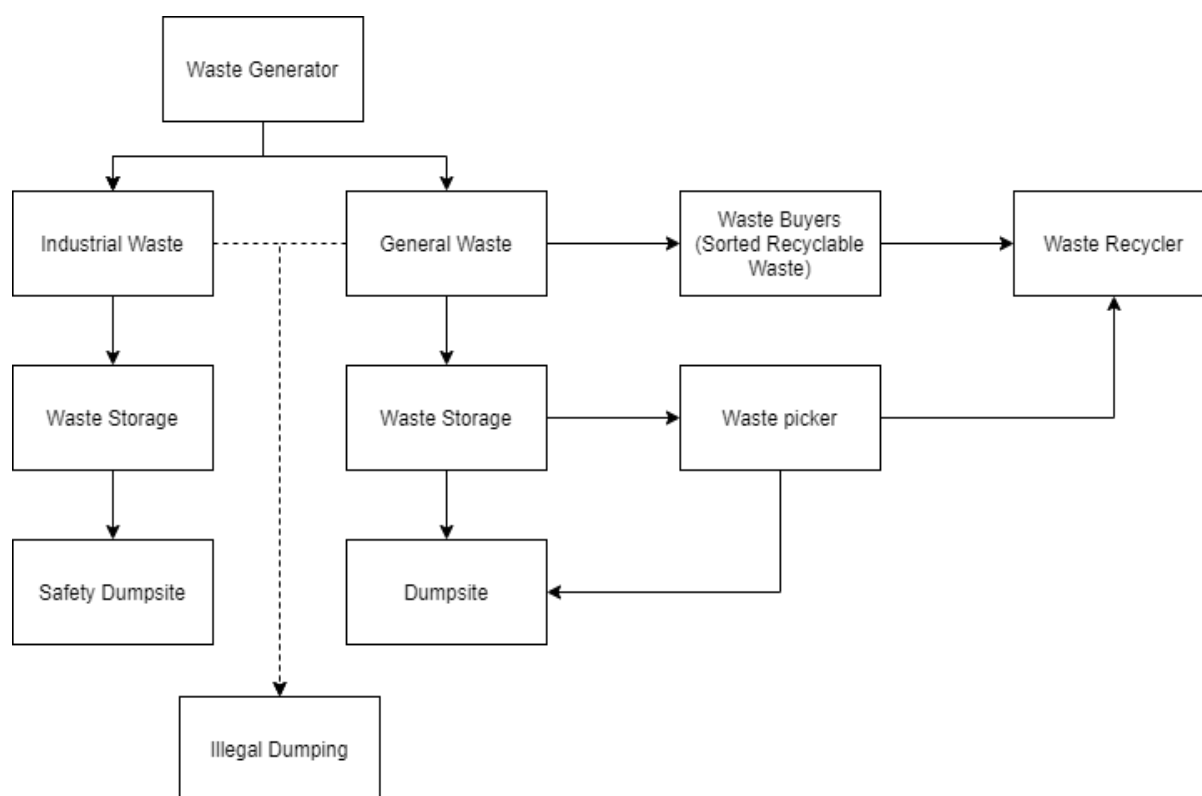


Figure 1.6-1: Flowchart of Solid Waste Management in Cambodia

Source: Department of Environmental Pollution Control, MOE, Cambodia

Siem Reap

Background

Siem Reap with total area of 44,147 hectares (12 districts) was crowned the ASEAN City of Culture for the period 2021-2022 in October 2020 by ASEAN Ministers Responsible for Culture and Arts. Key industries in Siem Reap are agriculture, tourism, food & beverage processing, and construction. The city centre is located 318 kilometers northwest of Phnom Penh. Based on 2019 census the province comprises 491,568 males and 514,944 females with 218,659 households. Total annual population growth in 1998-2008 was 2.5, while the population growth in 2008-2019 was lesser, as at 1.1. Population density in 2008 was 87 people per sq.km. while in 2019 increased at 98 people per sq.km. The gender ratio, which is defined as the number of males per 100 females, shows that gender ration in 2019 (95.5) is lower than in 2008 (96.4).

Waste Generation and Composition

Based on 2019 survey, there are 1,006,512 people living in Siem Reap. The average urban waste generation in the country is estimated at 0.61 kilograms per person per day, resulting in a waste generation of around 600 tons of waste per day that has been produced in Siem Reap in 2019.

The private company GAEA collects between 240 to 270 tons per day, recording a steady growth of 3% waste annually. Thus, waste collection is only at around 45%, with the majority of the remaining waste being illegally dumped or burned.

The domestic waste classification in Siem Reap is as follows:

- Organic Waste - 40%
- Paper/Cardboard - 4%
- Plastic - 9%
- Glass - 9%
- Others - 38%

The main types of waste generator are restaurants (26%), hotels (23.1%), households (22.9%), markets (8.4%), guest houses (7.8%), small services (3.6%), handicraft producers (1.9%), food shops (1.7%), clinics (0.8%), companies (0.7%), KTV (0.7%), supermarkets (0.6%), street sweeping waste (0.5%), hospitals (0.4%), clubs (0.4%), banks and microfinance institutions (0.3%), and night markets (0.2%).

Waste Management

There are three (3) private contractors present in Siem Reap to provide solid waste management services: GAEA Company (GAEA), VGREEN, and CINTRI.

GAEA is the private entity contracted by the local government for the collection, transport and disposal of solid waste within Siem Reap Municipality. Their waste collection covers households and establishments, along with street waste sweeping along main roads and commercial areas. About one third of Siem Reap Municipality area (36.2%) is within the solid waste service area of GAEA (MOP, 2019). Their agreement is a long-term service contract from 2007 to 2057. This agreement, however, does not cover the landfill operations.

On the other hand, a different service provider collects waste in the tourist areas in Siem Reap. VGREEN is responsible in collecting and transporting waste coming from the Angkor areas.

CINTRI, another private solid waste company, has been operating informally since mid-2019, providing waste management services to Damdek Market on the outskirts of Siem Reap City and transporting it to the allocated open dumpsite.

Disposal

Siem Reap has one landfill located 30 kilometers east of the city centre and is directly accessed by earth road, about 0.7 km from National Road No. 6 (NR6). The site is constructed and operated as an open dumpsite, without adequate measures to address environmental and social impacts. The site is reaching capacity limits but land for extension is in principle available.

Kampong Speu

Background

Kampong Speu is the province with the tallest peak (Phnom Aural), and the largest number of factories (271 factories) in Cambodia. Key industries in the province are textile/garment & footwear, agro-industry (milling and factories) and manufacturing. The province's total area is 701,700 hectares, and the city centre is located 76.5 kilometers west of Phnom Penh, some 2.5-hour drive. Based on 2019 census the province comprises 424,039 males and 448,180 females with 187,835 households. Total annual population growth in 1998-2008 was 1.8, while the population growth in 2008-2019 was the same, as at 1.8. Population density in 2008 was

102 people per sq.km. while in 2019 increased at 124 people per sq.km. The gender ratio shows that gender ratio in 2019 (94.6) is the same with 2008 (94.6). Kampong Speu Province consists of 8 districts with 87 communes and 1,358 villages.

Waste Generation and Composition

Waste generation in Kamong Speu is rapidly increasing due to economic developments and particularly due to the rapid growth of factories in the province. It is particularly waste from the strongly increasing number of factory workers, which contributes to the increase in municipal waste generation. Solid numbers are not available, however household waste generation is estimated at around 75 tons per day from the key cities Chbar Mon and Samraong Tong; 75 tons per day; additional 150 tons per day from the province; and 130 tons per day from factory workers' municipal waste. Waste composition is estimated at around 60-65% organic waste; 4% paper; 10% plastics; 9% glass; 13% others.

Waste Management

Kampong Speu Provincial Hall currently outsources waste collection to two private operators to collect waste from Chbar Mon (Veng Seng Green) and Samraong Tong (local markets) and transport it to the current dumpsite. Veng Seng Green was founded in 2010 and has been providing waste collection services to Chbar Mon City as well as the collection of wet/food waste to 20 out of the 271 factories. Samraong Tong town sends around 8 tons per day to the landfill through local farmer tractors twice a day.

Disposal

The existing main landfill is located ~10 kilometers to the central Kampong Speu town in an area zoned for rapid industrial and residential development. It is not designed or operated as an engineered, controlled or sanitary landfill; therefore, it is considered to be an open dumpsite. It is located in Sampov Village with waste collection, transportation and disposal services provided by Vang Seng Green. The site is constructed and operated as an open dumpsite, without adequate measures to address environmental and social impacts.

Kandal

Background

Kandal is a province that surrounds Phnom Penh and bordering with Vietnam. Key industries in Kandal are animal hide, garment, and footwear. The total area of this province is 317,900 hectares and the city centre is located 75 kilometers southeast of Phnom Penh, some 2 hours drive. Based on 2019 census, the province comprises 580,129 males and 615,418 females with 273,111 households. Total annual population growth in 1998-2008 was 1.6, while the population growth in 2008-2019 was lower, as at 0.8. Population density in 2008 was 343 people per sq.km. while in 2019 increased at 376 people per sq.km. The sex ratio shows that sex ration in 2019 (94.3) is higher than 2008 (94.2).

Given its proximity to the country's capital, Kandal hosts many of the medium and large firms in textile, wearing apparel, and footwear (2nd in the country following Phnom Penh), and food, beverage, and tobacco (3rd in the country following Phnom Penh and Kampong Cham) as of 2011 (Chhair & Ung, 2016). There are two special economic zones (SEZ) are located in the

province, namely Goldfame Pak Shun SEZ (hosts a Carton, Printing Plastic Label and Knitting Factory) and Suvannaphum Investment (which includes a 18-hectare dry port and a 4-hectare warehouse, and a 4-hectare yard (The Phnom Penh Post, 2017; MPWT and JICA, 2013)

Waste Generation and Composition

Waste generation in Kandal is estimated at around 270 tons per day, although reliable numbers are non-existent. Waste composition is estimated as similar to Kampong Speu. As identified during the landfill site screening, there was no weighbridge at the dumpsite. However, waste characterization of households, businesses, and markets from Ta Khmao is presented in **Table 2.4-1** to **Table 2.4-3** (UNESCAP, 2011).

Table 2.4-2: Composition of Household Waste in Ta Khmao (2011)

Type of Waste	Percentage
Vegetable and kitchen waste	21.36%
Paper	3.29%
Grass and wood	47.83%
Plastic	18.6%
Others (includes bone, textile, metal, rubber, leather, glass, and ceramic)	8.92%

Source: Ta Khmao Solid Waste Management Survey (2011)

Table 2.4-3: Composition of Shops and Offices Waste in Ta Khmao (2011)

Type of Waste	Percentage
Vegetable and kitchen waste	24.92%
Paper	5.73%
Grass and wood	35.38%
Plastic	24.16%
Others (includes bone, textile, metal, rubber, leather, glass, and ceramic)	9.81%

Source: Ta Khmao Solid Waste Management Survey (2011)

Table 2.4-4: Composition of Market Waste in Ta Khmao (2011)

Type of Waste	Percentage
Vegetable and kitchen waste	77.81%
Paper	11.49%
Grass and wood	5.42%
Plastic	4.17%
Others (includes bone, textile, metal, rubber, leather, glass, and ceramic)	1.11%

Source: Ta Khmao Solid Waste Management Survey (2011) *Waste Management*

Kandal Provincial Hall currently outsources waste collection for Ta Khmao City to private operator CINTRI, who for the past few years has had a contract with the City Hall. They took over operations/trucks from the city hall. The contract is currently for a further 28 years. Based on the findings in the landfill site screening and site suitability assessment report, area serviced by the CINTRI covers 8,270 households, 2,689 businesses, and 5 markets.

Sarom Trading Company is responsible for collecting waste from garment factories and transporting it to the Preaek Hour Lech dumpsite, estimated at three (3) tons per day. Hazardous waste is also collected by the private company from health clinics/hospital and disposed of in the city dump. Local market cleaners dispose waste twice a day into collection

containers which are installed around two of the markets (Ta Khmao and Doeum Mean). Waste is transported to the city dumpsite located in Preaek Hour Lech village.

Landfill

The existing main dumpsite is located in Prekho Village, Sangkat Prekho, Ta Khmao City, Kandal Province. CINTRI is the private company contracted to collect and transport solid waste, but there is no formal agreement for either the establishment or operation of this site as a landfill. The site is approximately 6 kilometers from Ta Khmao City. The land is publicly owned, with a total reported plan area of 2 hectares. The site is surrounded by sparse community settlements. The dumpsite has no management plan and does not operate to any environmental or public health standards associated with a controlled/sanitary landfill; no access control, fencing or security, no weighbridge, no composting plant or material recovery facility, no gas collection or flaring, no leachate collection or leachate treatment plant.

Battambang

Battambang Provincial Hall currently outsources waste collection for Battambang City to two main private operators, CINTRI and Leap Lem. A third has been hired for Bavel market, called Pov. Formal collection includes CINTRI for 8 sangkats, Leap Lem for 2 sangkats- they also run the MRF station- and self-service collection for Boeung Chhouk Market. Leap Lem Current dumpsite is located 7.5 km away from Battambang city centre. CINTRI landfill is located 6 km from the city land fill.

The project is not foreseen to finance a new landfill for Battambang as this is already financed by ADB, but support under Component 2 to extend service areas and improve collection and solid waste management as well as potentially adding material recovery facilities and transfer stations could be considered, subject to confirmation of eligibility criteria.

Sihanoukville

The current waste company, KSWM- Kampong Som Waste Management Co, contracted by Sihanoukville Municipality since August 2019, took over operations from CINTRI who were previously operating in the city for 10 years. According to the KSWM's report in March 2020, there are 6,500 costumers as they have a limited capacity, and the company is currently looking to expand waste collection services. KSWM provides collection and transportation for urban city waste around Sihanoukville city. Waste collections services cover Sangkat 4 and all roads (both main roads and small roads) in the four villages/ Sangkats surrounding Sihanoukville Municipality.

Sihanoukville has one landfill that received 80.3 tons/day in 2011 and 284.5 tons/day recently. In July 2020, the MPWT and the MEF announced that they will inject US\$5 million of the 2020 fiscal budget to build a new landfill on 17 hectares of land in Sihanoukville. The landfill is to be located in Ota Sek village, Ou Oknha Heng commune, Prey Nob district, about 3km from National Road 4.

The project is not foreseen to finance a new landfill for Sihanoukville as this is already financed by other sources, but support under Component 2 of the Project to extend service areas and improve collection and solid waste management as well as potentially adding

material recovery facilities and transfer stations could be considered, subject to confirmation of the eligibility criteria.

2 ENVIRONMENT AND SOCIAL BACKGROUND

2.1 ENVIRONMENT OVERVIEW

2.1.1 Geographical Location

Cambodia is situated in the southern portion of the Indochinese peninsula in Southeast Asia. It has a land area of 181,035 sq.km. and bordered by Thailand to the northwest, Laos to the northeast, Vietnam to the east, and the Gulf of Thailand to the southwest.

Siem Reap is the second largest city, located on the northwestern part of Cambodia (103° 51' 37.1268" E and 13° 21' 50.5692" N) and bordered by Oddor Meanchey to the North, Preah Vihear and Kampong Thom to the East, Banteay Meanchey to the West, and Tonle Sap Lake to the south. Spanning a total area of 10,299 sq.km., Siem Reap is comprised of 12 districts, 100 communes, and 875 villages.

Kandal is a province in Cambodia located in the southern portion of the country. It is surrounded by the Cambodian capital of Phnom Penh and borders the provinces of Kampong Speu and Takeo to the west, Kampong Chhnang and Kampong Cham to the north, Prey Veng to the east, and shares an international border with Vietnam to the south. It is the second largest populated province in the country. The capital city of Kandal is Ta Khmao, which is approximately eight kilometers south of Phnom Pehn. Kandal is one of the wealthier provinces of Cambodia.

Kampong Speu is a province in Cambodia bounded by the provinces of Pursat and Kampong Chhnang to the north, Kandal to the east, Takeo to the southeast, Kampot to the south, and Koh Kong to the west. Its capital town is Chbas Mon.

The detailed geographical location of Siem Reap, Kandal, and Kampong Speu is shown the map of Cambodia, refer to **Figure 2.1-1**.



Figure 2.1-1: Geographical Location of Cambodia

2.1.2 Climate and Meteorology

Cambodia has a climate that is tropical: hot all year around, with a rainy season from May to mid-November due to the south-west monsoon and a dry season from mid-November to April. For a typical year, the rainfall in the inland areas is about 1,300 to 1,800 mm. The climate is a bit cooler in the highlands, where slopes are covered by an impermeable forest and are protected by a nature reserve. The mountainous areas are also the rainiest, which receive up to 5,000 mm of rain per year and experience some showers in the afternoon even before the monsoon season from February to April.

Cambodia, as well as the rests of the provinces including Siem Reap Province has two main seasons: wet season and dry season. The wet season lasts for six (6) months, starting in May and ending in October, with wind direction from south-west. The dry season runs from November to April, with wind from south-east or north-east. The average annual rainfall is 1,400 mm, 95% of which are received during the wet season. Cambodia receives the highest amount of rainfall (300 mm in average) in the month of September. The highest ambient air temperature recorded is 37°C and lowest is 19°C.

In Kandal, the average temperatures are always high. The months of April, May, June, July, August, and November have a high chance of precipitation. The warmest month is April, with an average maximum temperature of 34°C. The coldest month is December with an average maximum temperature of 30°C. The wettest month is October, while the driest month is January.

Kampong Speu has a similar weather patterns with slight differences in terms of rainfall from the northeastern provinces. The wettest month is October, while January is the driest month. A lot of rain falls in the months of May, June, July, August, September, October, and November. The average amount of annual precipitation is 999.9 mm.

2.1.3 Topography

Cambodia is mostly characterized by low flat plains, with mountains in the north and southwestern part of the country (United Nations Office for Disaster Risk Reduction, n.d.). Its low-lying central plain is surrounded by uplands and low mountains. Forested transitional plains extend outward and rise to elevations of about 200 meters above sea level to the north (Solieng, 2013).

The topography of Siem Reap, particularly the southern part, consists of typical plain wetland area covered with rice fields and other agricultural plantations, and extensive flooded forests, which is part of the Tonle Sap Biosphere Reserve. The northern part is undulating, covered with deep green forests.

The province of Kandal has an average altitude of 10 meters above sea level. It consists of typical plain wet area, covering rice fields and other agricultural plantations.

The topography of Kampong Speu is variable: from a large area of lowland paddy fields in the east to lowland/upland mosaics and upland forested areas in the West. Cambodia's highest mountain, the Phnom Aural with an 1,813-meter altitude, is located in the very north of the province.

2.1.4 Geology

Cambodia has few natural resources, such as gold and non-metallic minerals. The area experienced tectonic activity and low-grade metamorphic rock formation throughout the Paleozoic era. A few rocks remain from the Cenozoic period. There is bauxite formed from laterite weathering, as well as phosphorite, iron, gems, limestone, and other minerals.

The geological description of Siem Reap consist of alluvium, ancient alluvium and lateritic carapaces and sandstone alluvial deposits, and other minor geology, while in Kandal and Kampong Speu, both are covered by alluvium and other minor geology as seen in **Figure 2.1-2**.

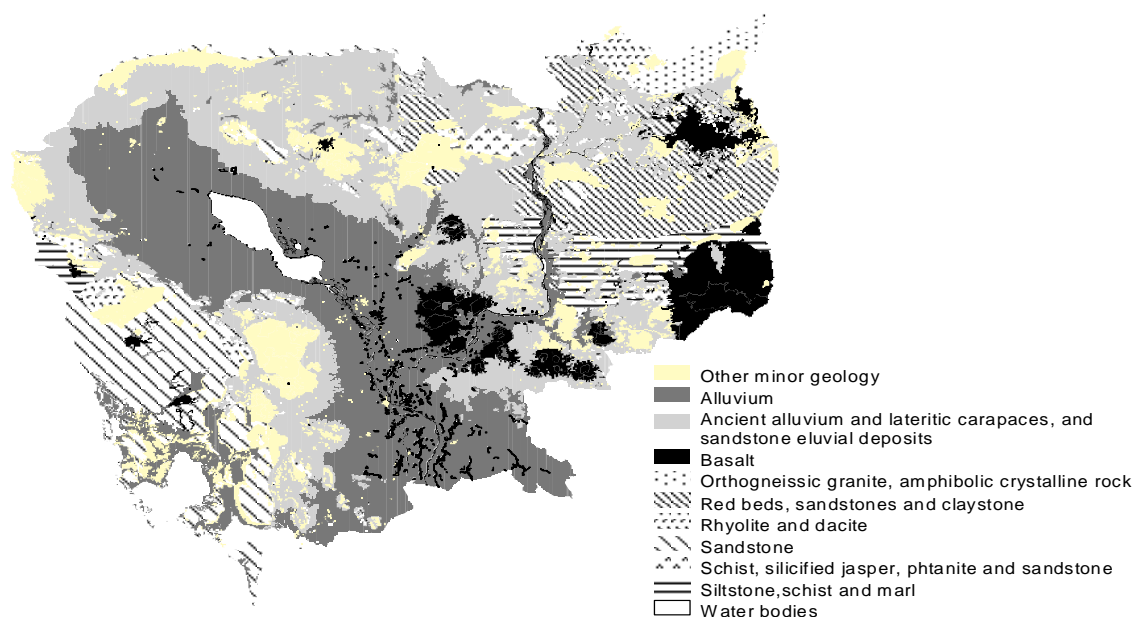


Figure 2.1-2: Geology Map of Cambodia

Source: Mekong River Commission

2.1.5 Hydrology and Water Conservancy

Cambodia is abundant in freshwater resource. The Mekong River and the Tonle Sap Basin are the main sources of freshwater resources of Cambodia (Sithirith, 2017). The Tonle Sap Basin has 11 river basins, namely: Stung (St.) Boribo, St. Chikreng, St. Chinit, St. Dauntry, St. Mongkol Borei, St. Pursat, St. Sangkar, St. Sen, St. Siem Reap, St. Sreng, and St. Staung. The total renewable water resources of the country equate to 476.1 cu.km., while the freshwater withdrawal sums up to around 4.08 cu.km. per year (United Nations Office for Disaster Risk Reduction, n.d.).

Despite the country being rich in water resources, Cambodia experiences drought, especially during the dry season and for uncertain duration. The Tonle Sap Basin is also prone to flooding during the rainy season due to high variability in rainfall.

The Siem Reap River is the only permanent stream in Siem Reap region. The watershed of the river is a part of the Lake Tonle Sap basin with 67,600 sq.km. The watershed of the river approximately amounts to 670 sq.km in area. The total length of the river is 80 kilometers, with an average slope of 1/2,000 in lower reaches of the Angkor Heritage Area.

The province of Kandal features two (2) of the biggest rivers in Cambodia, namely: Basaac River and Mekong River.

The Prek Thnot River is located in Kampong Speu in Cambodia. The length of the mainstream is 232 km and has an area of 5,050 sq.km. The tributaries include Rand Ambel (464 sq.km), Stung Tang Haong (608 sq.km), and Stung Sva Slap (686 sq.km). Prek Thnot plays significant role in all season cultivation, storing storm water, and discharging to Bassac river. It helps preventing Phnom Penh, Kampong Speu and Kandal provinces from storm water flood.

2.1.6 Ecological Environment Status

Cambodia has many types of ecosystems, with complex structure and rich species. The ecosystem types in Cambodia mainly include mountain forest, grassland, aquatic, agricultural, village, and urban ecosystems. The forest in the country is slowly depleting due to illegal logging activities and strip mining resulting to habitat loss and declining biodiversity.

The wildlife of Cambodia is very diverse with at least 162 mammal species, 600 bird species, 176 reptile species, 900 freshwater fish species, 670 invertebrate species, and more the 3,000 plant species.

Cambodia has more the 3,000 identified plant species wherein many of which are endemic to unique local ecosystems, such as Tonle Sap floodplain, forest of the Cardamon and Damrel Mountain, and elevated plains.

2.1.7 Soil

The base geology of Cambodia mostly consists of sandstones. The surrounding areas of the Tonle Sap Lake and the lowland agricultural sectors has an Alluvium soil. In the north east of the country, the soils formed on weathered basaltic lava flows from the Pleistocene covered significant areas of older alluvial terraces (V. Seng). It can also be observed that there are other minor geology present in various areas of the country.

The soil in Cambodia is mostly clayey loam with some gravel. These soils have a lower degree of acidity. Total nitrogen and humus contents are low. Carbon-Nitrogen (C/N) ratios show a moderate value. Cation-exchange capacity is sufficient or good. The content of exchangeable calcium is normal. The percentage of calcium saturation is slightly low. The content of available calcium is low, available phosphorus and potassium values are much lower. In short, it was seen as a rule that although Cambodian soils have such favorable features as suitable soil classes, weak acidity, moderate C/N ratio and high exchange capacity, they are extremely poor in available plant nutrients.

The areas of Siem Reap, Kandal and Kampong Speu is classified as Alluvial Soil from the geological point of view. Alluvial soil is found in large areas of the inland basins of Cambodia, much of which distributes widely along catchment areas of the Mekong River and around the Lake Tonle Sap, and extends far open towards the southern boundary.

2.1.8 Soil Erosion

Based on the study conducted by the Ministry of Agriculture, Forestry, and Fisheries (MAFF) in January 2018 regarding the land degradation of Cambodia, it was found out that there are 4.45 million hectares of land under highly erodible class. The causes of soil erosion in Cambodia have been attributed mainly to deforestation, expanding agricultural lands, climate change, pest and diseases, unsustainable land management, and infrastructure development.

Since the areas in Siem Reap, Kandal and Kampong Speu are relatively flat, the sites are not prone to soil erosion.

2.1.9 Land Resources

The land area of Cambodia is 18.1 million hectares of which at least 6.5 million hectares is considered arable. A diminishing amount of the population of the country lives in rural areas and depends on land, forests, river and other natural resources for their livelihood and more and more of the population lives in urban or sub-urban areas. Subsistence agriculture, fisheries and foraging in surrounding forests and woodlands are the main sources of food, employment and income of the rural communities. Cambodia's terrain allows for both sedentary and shifting cultivation. Rural communities rely greatly on surrounding woodlands, forests and water bodies for food and non-timber forest products for household use and income.

2.2 CURRENT STATUS OF ENVIRONMENTAL QUALITY

The COVID-19 pandemic has prevented the conduct of extensive survey at this time considering the government travel restrictions and the rising number of COVID infections. Secondary data and limited primary data were used for this ESMF.

2.2.1 Current Situation of Atmospheric Environmental Quality

Based on **Figure 2.2-1**, the air quality in Siem Reap is still almost excellent. The area is not yet polluted as it is protected by many tree species that can be found in the area. This means that the quality of air is still within the standard limit set by the MOE. For Kandal and Kampong Speu, the air qualities are both fair in classification.

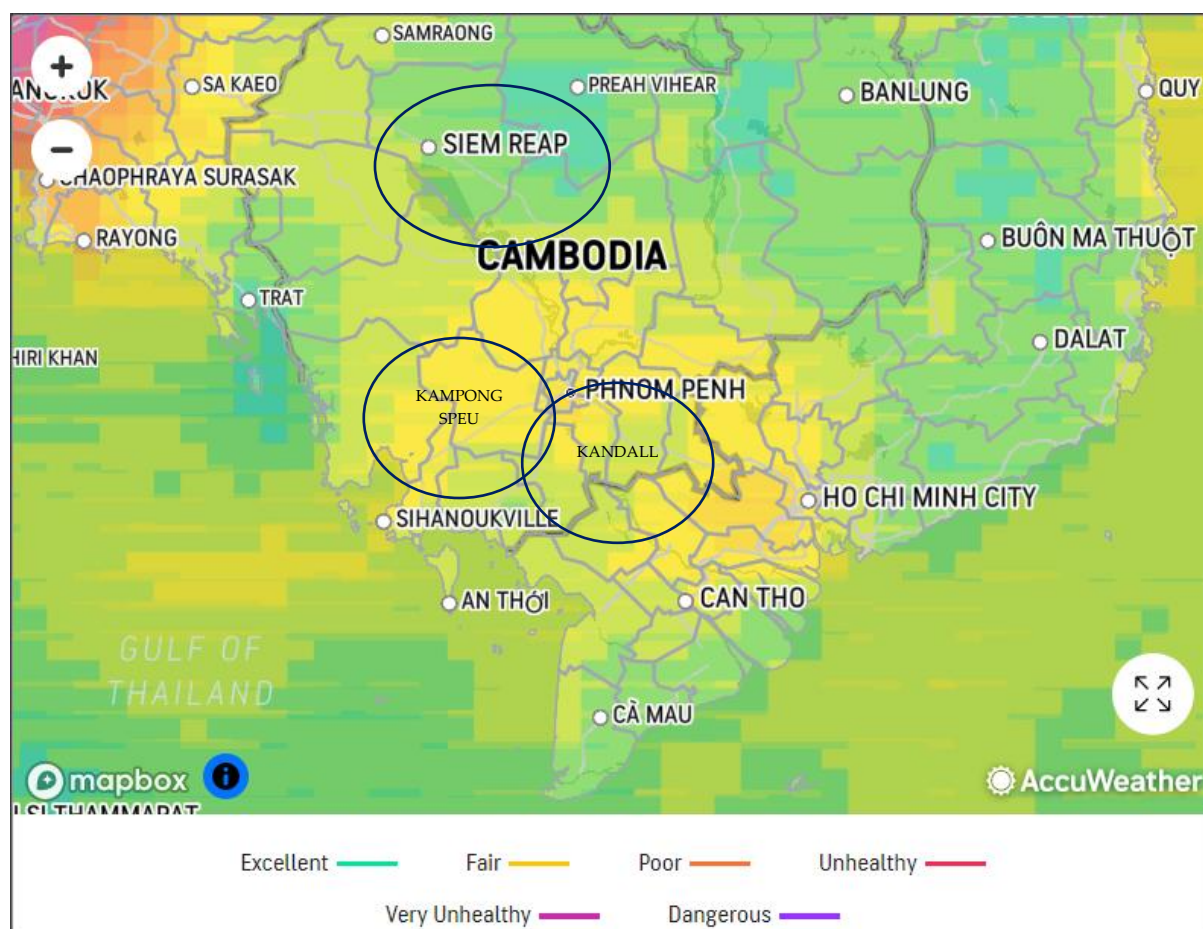


Figure 2.2-1: Air Quality of Cambodia*Source: AccuWeather*

The main sources of the degradation of air quality are the pollutants coming from vehicles producing black carbons which is also produced from factories; open burn sites; nitrogen dioxide (NO₂) and sulfur dioxide (SO₂) that both released in large volumes from engines; carcinogen composing of finely ground gravel, dry and silica dust; and dangerous materials from construction sites that comprised of mercury, lead and microplastics. Other key sources are waste dumpsite fires and waste burning by households and businesses.

2.2.2 Current Situation of the Surface Water Environmental Quality

Tonle Sap Lake is the nearest surface water in Siem Reap. The lake occupies the lowest lying area of the vast alluvial and lacustrine floodplain in the lower Mekong basin, which induced by the collision of the Indian Plate with the Eurasian Plate. On the other hand, Kampong Speu and Kandal are situated in the Mekong Delta, with the nearest surface water as Mekong River and Tonle Sap River, as illustrated in **Figure 2.2-2**.

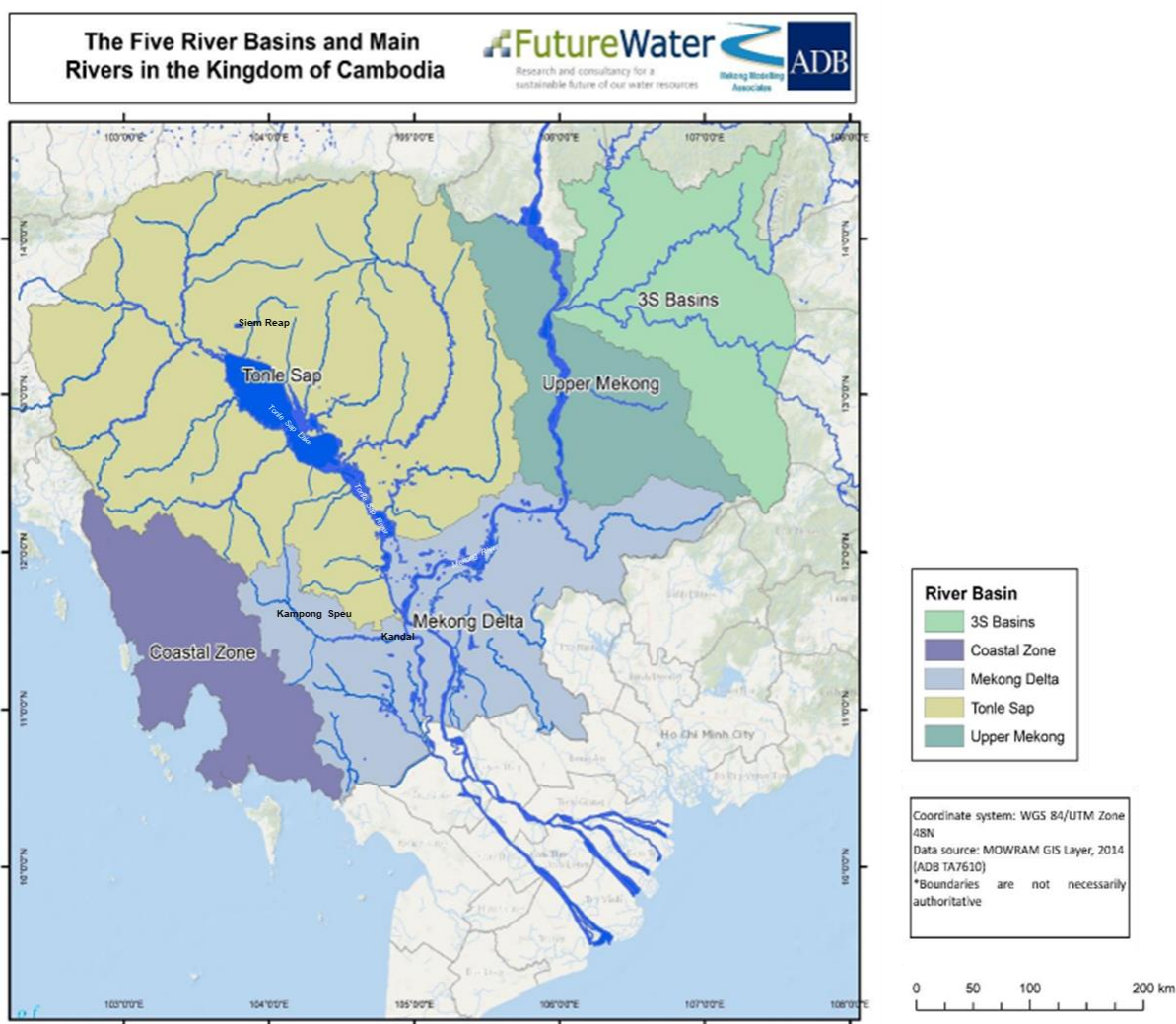


Figure 2.2-2: River Basins and Major Rivers in Cambodia (2014)

Source: Rapid Assessment of Eco-Hydrology for the Tonle Sap River Basin and Mekong Delta River Basin

Based on “Major and Trace Elements in the Surface Water of Tonle Sap Lake, Mekong River, and other Tributary Rivers in Cambodia” (Yoshikawa, et al., 2020), during the rainy season, the composition of lake water has high values of Calcium (Ca), Molybdenum (Mo) and Antimony (Sb) which is greatly influenced by the intrusion of water from the Mekong River through the Tonle Sap River. While during dry season, the lake water shifted with high Sodium (Na), Potassium (K) and Magnesium (Mg), suggesting that the lake water stored during the rainy season was replaced by inflow from other tributaries and groundwater in the vicinity. The dissolved Arsenic (As) concentration was higher in the lake water during the dry season. The values of Iron (Fe) and Manganese (Mn) is less important due to the shallow water depth in the lake. There are potential risks of arsenic poisoning induced by the formation of an anoxic water mass and increment in the concentration of phosphorus if eutrophication continues to progress.

In terms of flooding, most of the Mekong Delta River Basin are low-lying and constitute the Mekong Floodplain. Kampong Speu serves as catchment due to the presence of the

Cardamom Mountains to its west wherein rainfall lowers down the province (ADB and MOWRAM, 2019). Flooding in these river basins are driven by the hydrology of Mekong and Tonle Sap and is influenced by surface runoff in surrounding built up areas

2.2.3 Current Situation of the Groundwater Environmental Quality

As Siem Reap, Kandal, and Kampong Speu are all located in the Tonle Sap and Mekong River Basins, groundwater is easy to access. These basins have shallow aquifers that have high recharge rates, typically within 5 to 10 meters below the ground surface (Water Environment Partnership Asia, n.d.).

Based on the study conducted by the Department of Rural Water Supply for “Groundwater Resources in Cambodia” in 2011, groundwater is available in almost everywhere in plain area except Dry-Zone in Central and Northwest region. Groundwater is major source for drinking water supply in Cambodia wherein 53% of Cambodian households drink from groundwater sources in the dry season. No data available yet for Groundwater Extraction in Cambodia but there are 270,000 tube-wells with hand pump are functioning for drinking water purpose (Sophally, 2011).

The readily available groundwater monitoring data in the country is only for the most significant aquifers, which are overseen by the Ministry of Rural Development for rural water supply and the Ministry of Industry and Handicrafts for urban water supply (ADB, 2013).

In Kandal, there are some communes where existing wells have high levels of Arsenic traces, or exceeding the national limit of 50 Ug/L. Iron contamination in wells has greater prevalence in Kandal with more than half of the existing wells in most communes having iron concentration exceeding 0.03 mg/L (MRD and World Bank, 2010). Increased salinity has been observed which is attributed from its original salt deposits (Water Environment Partnership Asia, n.d.; KIGAM, CCOP, and UNESCO, 2015). Specific information will be collected as part of site -specific ESIs once site options are selected.

2.2.4 Current Situation of the Acoustic Environmental Quality

The main tourism attractions of Siem Reap are the Angkor Heritage Area, Urban Amenity and Cultural Tourism Area, Tonle Sap Lake and Rural Areas and Distant Angkor Monument. But Siem Reap is not developed enough to attract various types of tourists who can be exposed to a touch of Angkor history and culture.

The Department of Environment in Cambodia identified three (3) major environmental issues in the area, to wit: (1) water quality and sanitation issues, (2) solid waste management issues, and (3) air and noise pollution.

The government of Siem Reap includes in their Sector Development Plan the “Strengthening Infrastructure for Tourists and People.” The infrastructure development covers five (5) sectors: transportation, water resources and water supply, solid waste management, drainage and sewerage, and power.

2.3 SOCIAL DATA

2.3.1 Socioeconomic Profile

Demography

As of 2019, the total population in Siem Reap was recorded at 1,006,512 (NIS, 2020). The female population (51.2%) is slightly higher than the male population (48.8%). The province has an average household size of 4.48 and a household population of 224,672. On the other hand, the Province of Kampong Speu has a total population of 877,523 of which 51.6% are female. The province has 195,882 and has an average household size in the province is 4.47. Lastly, the Province of Kandal, which surrounds the capital Phnom Penh and is the second most populous province in Cambodia, has a total population of 1,201,581 of which 51.6% are female. It has a household population of 265,803 and an average household size of 4.52. These are summarized in **Table 2.3-1**.

Table 2.3-1: Total Population by Sex (2019)

Province	Total Population	Male	% Share	Female	% Share	Household Population	Average Household Size
Siem Reap	1,006,512	491,588	48.8	514,944	51.2	224,672	4.48
Kampong Speu	877,523	425,102	48.4	452,421	51.6	195,882	4.47
Kandal	1,201,581	581,563	48.4	620,018	51.6	265,803	4.52

Source: General Population Census of the Kingdom of Cambodia 2019

Population density in Siem Reap grew from 87 to 98 persons per sq.km. from 2008 to 2019. The province is significantly more densely populated in comparison to Cambodia as a whole as there are only 84 persons per sq.km. in the whole of Cambodia as of 2019, an increase of from 74 persons per sq.km. in 2008 (NIS, 2008).

However, Siem Reap experienced a decline in its annual growth rate between the years 2008 to 2019 as it recorded a growth rate of 1.1 during this period, a significant decrease from the previous decade (1998-2008) when the annual growth rate was at 2.5. In contrast, the annual growth rate of Kandal Province dropped by -0.5% between 2008 to 2019. This may be attributed to the change in its official land area from 3,568 sq.km. to now 3,179 sq.km. as of the 2019 Census. Kandal Province is the second most dense province, following Phnom Penh. On the other hand, Kampong Speu Kampong retained its annual growth rate from 1998 to 2008 to 2008 to 2019 of 1.8%, and recorded an increase in its population density from 102 persons per sq.km. in 2008 to 125 persons per sq.km. in 2019. The total population data are shown in **Table 2.3-2** and population growth rate is illustrated in **Figure 2.3-1**.

Table 2.3-2: Total Population, Growth Rate and Population Density of Siem Reap, Kampong Speu and Kandal

Province	Area (sq.km.)	Total Population		Annual Growth Rate		Population Density	
		2008	2019	1998-2008	2008-2019	2008	2019
CAMBODIA	181,035	13,395,682	15,288,489	1.5	1.2	74	84
Siem Reap	10,299	869,443	1,006,512	2.5	1.1	87	98
Kampong Speu	7,017	716,944	877,523	1.8	1.8	102	125
Kandal	3,179	1,265,280	1,201,581	1.6	-0.5	343	378

Source: General Population Census of the Kingdom of Cambodia 2019

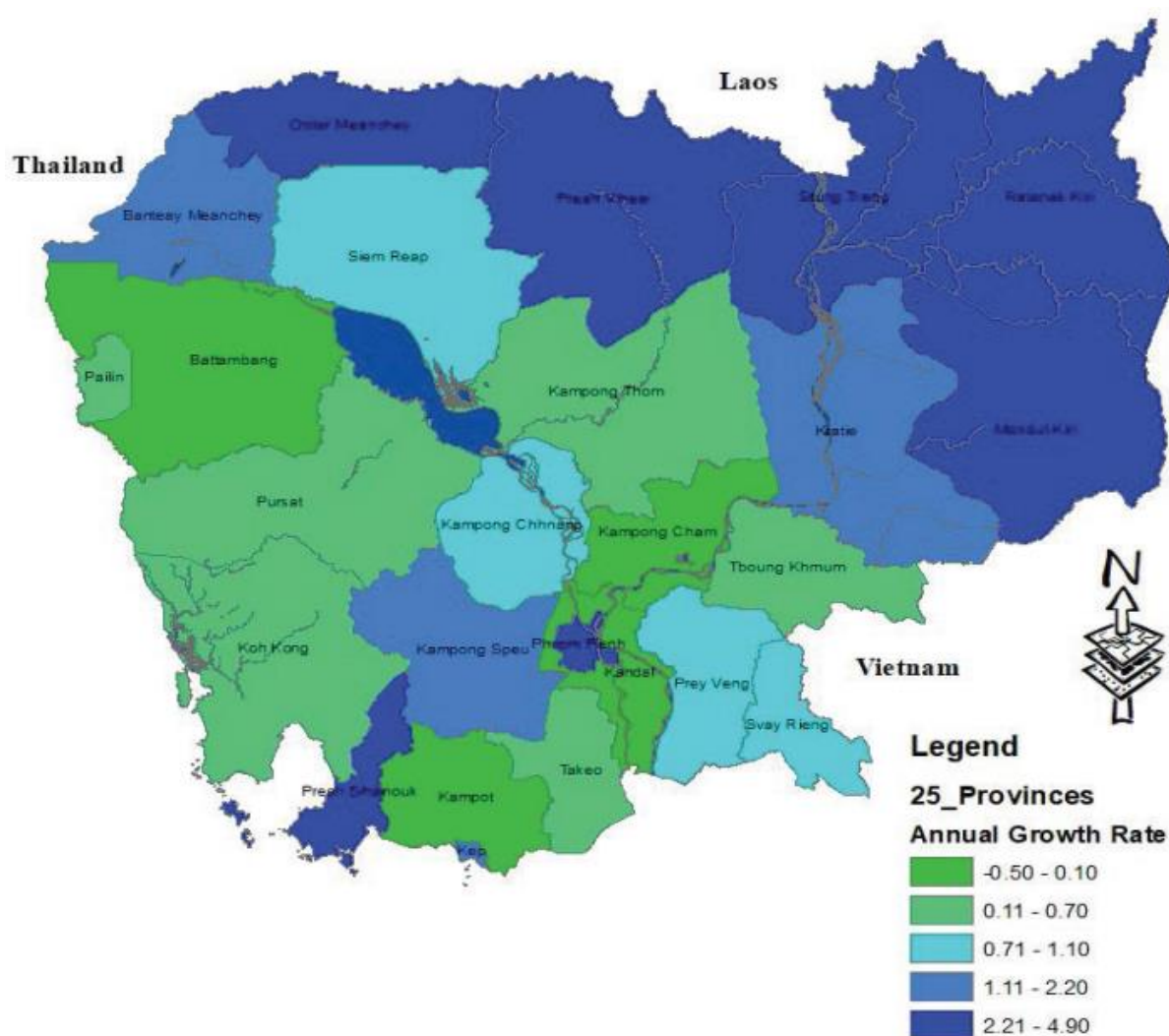


Figure 2.3-1: Population Growth Rate in Cambodia (2008-2019)

Source: General Population Census of the Kingdom of Cambodia 2019

In terms of ethnicity and language the majority of the population have Khmer as their mother tongue at 97.1%. There are over 300,000 or 2.3% of the population whose mother tongue fall within the minority languages. In Siem Reap, the Khmer people populate the majority of the population of Siem Reap Province. As of 2013, Khmer people take up 99.72% of the population in Siem Reap. Vietnamese people and other minority languages take up the remaining 0.27%. In Kampong Speu and Kandal, those whose mother tongue is Khmer hold the majority at 99.3% and 99.2% respectively. The breakdown of these figures is provided **Table 2.3-3** (NIS and JICA, 2014).

Table 2.3-3: Population by Mother Tongue (2013)

Mother Tongue	Cambodia	Siem Reap	Kampong Speu	Kandal
Khmer	14,244,330	920,420	750,154	1,107,594
Vietnamese	61,293	100	-	4,737
Minority Languages	331,068	2,462	5,020	2,596
Chinese	6,928	-	-	260
Lao	24,613	-	-	-
Thai	837	-	134	-
French	263	-	-	-

Mother Tongue	Cambodia	Siem Reap	Kampong Speu	Kandal
English	1,591	-	-	577
Korean	1,168	-	158	-
Japanese	91	-	-	-
Others	4,410	-	-	200
TOTAL	14,676,592	922,982	755,466	1,115,964

Source: Cambodia Inter-censal Population Survey 2013

A big number of the Kouy, and Saouch ethnic minority groups were identified in Kampong Speu. In Siem Reap, there are ethnic minority groups from Kuoy; however, there is no indication of their presence and proximity to the landfill sites options being considered. No indigenous peoples were indicated in the commune database for Kandal Province. However, this will need to be further confirmed when carrying out site-specific analysis for each project's site.

Table 2.3-4: Ethnic Minorities/Indigenous People (2010)

Ethnic Minorities / Indigenous People	Kampong Speu		Kandal		Siem Reap	
	Families	Persons	Families	Persons	Families	Persons
Phnong	0	0	0	0	0	0
Kouy	234	906	0	0	176	41
Stieng	0	0	0	0	0	0
Mil	0	0	0	0	0	0
Kroal	0	0	0	0	0	0
Thmorn	0	0	0	0	0	0
Khaonh	0	0	0	0	0	0
Tompouonn	0	0	0	0	0	0
Charay	0	0	0	0	0	0
Kroeung	0	0	0	0	0	0
Kavet	0	0	0	0	0	0
Saouch	30	127	0	0	0	0
Lun	0	0	0	0	0	0
Kachak	0	0	0	0	0	0
Praov	0	0	0	0	0	0
Others	5	17	0	0	0	0
TOTAL	269	1,050	-	-	176	41

Source: Commune Database Online, 2010

Persons with Disability

In the 2019 Census, disability was measured in terms of physical and/or mental difficulties experienced in daily life for people aged 5 years and over. Among the three (3) provinces, Kandal had the greatest number of persons with disabilities at 52,724 individuals, or 7.6% of its population, placing the province with fourth of the 25 provinces in Cambodia with the greatest number of disabilities. This is followed by Siem Reap at 40,585, and Kampong Speu at 35,620⁵.

⁵ It is noted that the census is based on a conservative definition of what is considered a disabled person. Based on estimate by the WHO, PWDs represent about 10-15% of the total population.

The share of individuals with disability among females are greater than males in Cambodia, as well as for the provinces of Kampong Speu, Kandal, and Siem Reap. **Table 2.3-5** presents the sex-disaggregated data among persons with disability.

Table 2.3-5: Persons with Disability in Kampong Speu, Kandal and Siem Reap by Sex (2019)

Province	Male		Female		Total		Rank
	Number	%	Number	%	Number	%	
Kampong Speu	14,644	41.1%	20,976	58.9%	35,620	5.2%	8
Kandal	21,696	41.2%	31,028	58.8%	52,724	7.6%	4
Siem Reap	17,602	43.4%	22,983	56.6%	40,585	5.9%	7
CAMBODIA	286,659	41.6%	402,873	58.4%	689,532	100.0%	

Source: National Institute of Statistics, 2020

Data on the following types of disabilities were also collected: (a) Disability in seeing, (b) disability in hearing, (c) disability in walking or climbing stairs, (d) disability in remembering, memorizing or concentrating; (e) disability in self-care and daily tasks, (f) disability in speaking, or communication due to physical, mental and/or emotional health (NIS, 2020). For level of disability of individuals were also collected using the following scale:

- None;
- Some – “Some difficulty”;
- Moderate – “A lot of difficulty”; and
- Severe – “Cannot do at all”.

Table 2.3-6 shows the breakdown of persons with disability in Kampong Speu, Kandal and Siem Reap by Type and Level of Disability.

Table 2.3-6: Persons with Disability in Kampong Speu, Kandal and Siem Reap by Type and Level (2019)

Disability		Province			
Type	Level	Kampong Speu	Kandal	Siem Reap	CAMBODIA
Seeing	Some	19,971	30,566	24,999	412,240
	Moderate	3,951	5,387	3,806	71,725
	Severe	1,156	1,692	822	18,288
	Total	25,078	37,645	29,627	502,253
Hearing	Some	17,311	26,825	16,852	342,233
	Moderate	3,102	4,166	2,822	56,729
	Severe	945	1,488	740	15,506
	Total	21,358	32,479	20,414	414,468
Walking	Some	15,194	22,045	15,110	304,985
	Moderate	3,771	5,706	3,508	71,593
	Severe	964	1,594	799	16,790
	Total	19,929	29,345	19,417	393,368
Remembering	Some	16,899	22,564	15,581	316,718
	Moderate	3,086	4,330	2,675	58,540
	Severe	1,209	1,828	909	18,687
	Total	21,194	28,722	19,165	393,945
Self-care	Some	13,512	18,096	11,915	253,393
	Moderate	2,750	3,888	2,263	55,715

Disability		Province			
Type	Level	Kampong Speu	Kandal	Siem Reap	CAMBODIA
Speaking	Severe	951	1,560	778	19,891
	Total	17,213	23,544	14,956	328,999
	Some	14,345	18,456	12,579	256,645
	Moderate	2,765	3,801	2,296	51,960
	Severe	1,024	1,608	985	18,011
	Total	18,134	23,865	15,860	326,616

Source: National Institute of Statistics, 2020

On the other hand, **Table 2.3-2** shows the percentage of the population persons with disability that have a severe level of disability. As presented in the figure, the proportion of those with severe level of disability in the provinces of Kampong and Kandal are above the country average.

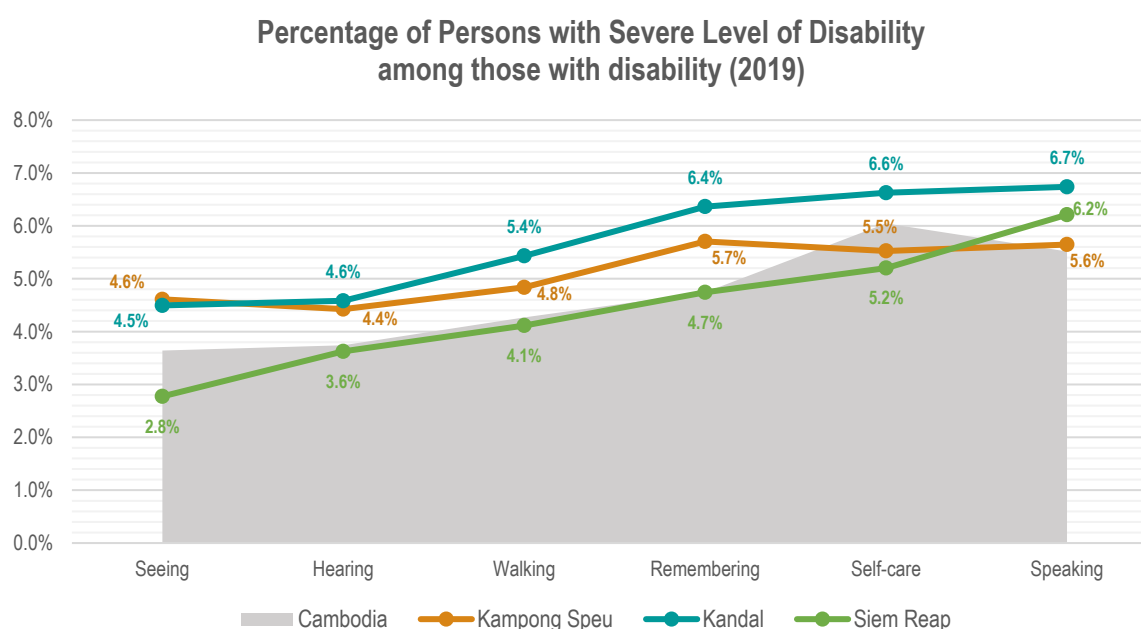


Figure 2.3-2: Percentage of Persons with Severe Level of Disability (2019)

Source: National Institute of Statistics, 2020

Female-headed Households

Female-headed households are more prominent in the southeastern provinces in Cambodia as illustrated in **Figure 2.3-3**. In Siem Reap Province, 13% of the households are headed by females, while for the provinces of Kandal and Kampong Speu, 15% of the households are female-headed (The Asia Foundation, 2018).

Percentage of Households that are Female Headed by Province

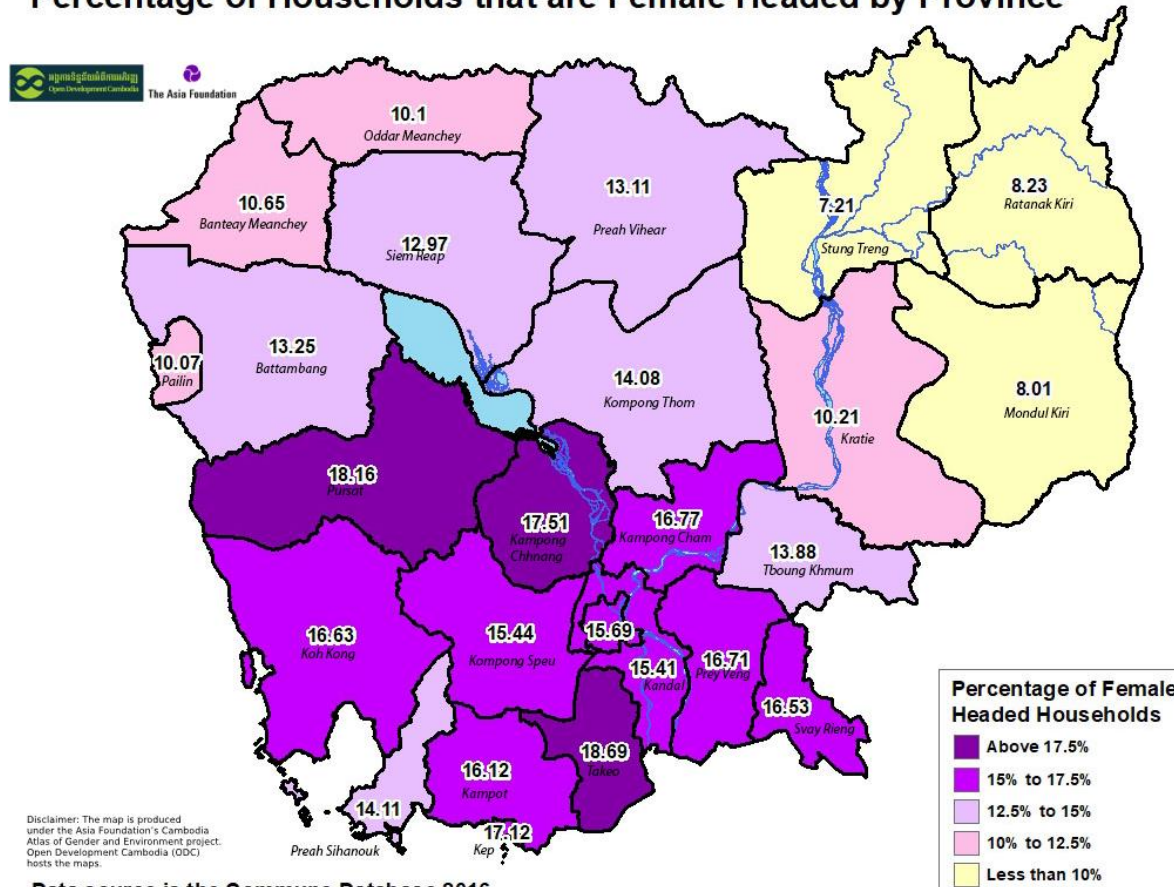


Figure 2.3-3: Female-headed Households by Province (2016)

Source: Commune Database (2016) in Cambodia Atlas of Gender and Environment, The Asia Foundation (2018)

Poverty

The Ministry of Planning (MOP) initiated IDPoor in 2005 to identify and tag households living in poverty and the most vulnerable households in order to effectively sharpen the poverty reduction efforts and socioeconomic development initiatives of the government (MOP, n.d.). The program identified two (2) poverty classifications:

- Poor Level 1: Very poor
- Poor Level 2: Poor

According to Sub-decree 291 (2011), households are tagged under a specific level based on the endorsement of the commune/sangkat chief “following a decision by the commune/sangkat council, based on the results of implementation of the procedures for identification of poor households.”

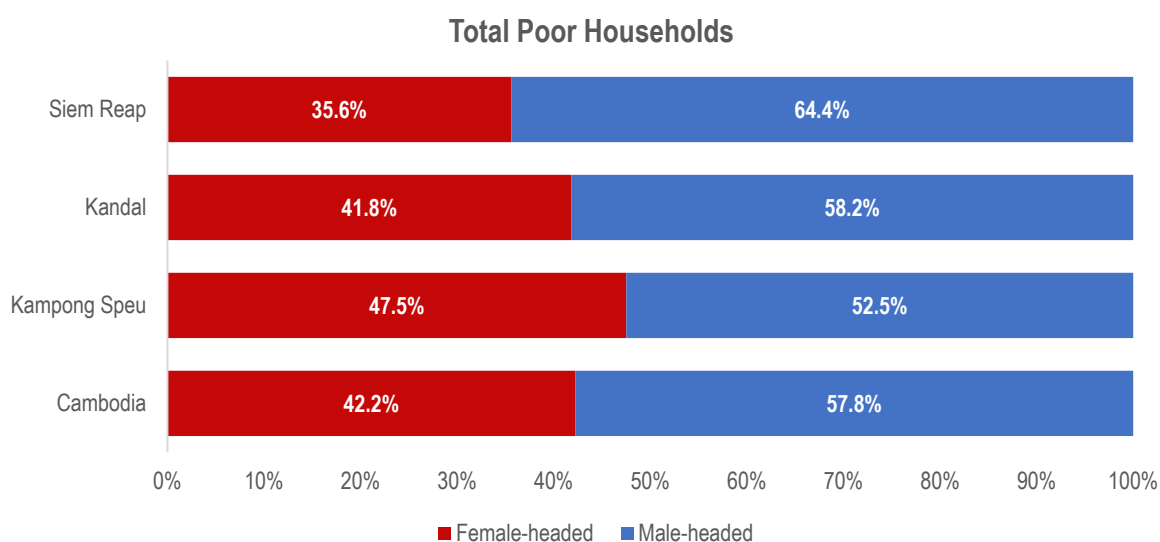
Almost one in five households (18.98%) in Cambodia are considered poor (MOP, 2019). In Siem Reap Province, 30,579 households or 12.19% of its total households are poor, most of which are under Poor Level 2. In Kandal Province, 30,972 households or 9.91% of its total households are poor, a third of which are under Poor Level 2. Lastly, in Kampong Speu, 23,569 households are poor, which represents 4.81% of its total households. The poor households are almost split between Poor Level 1 and Level 2. These are detailed in **Table 2.3-7**.

Table 2.3-7: Number and Percentage of Poor Households⁶

Country / Province	Total Households	Poor Level 1		Poor Level 2		Total	
		Number	% Share	Number	% Share	Number	% Share
Cambodia	3,734,573	271,661	7.27%	437,168	11.71%	708,829	18.98%
Kampong Speu	490,269	9,938	2.03%	13,631	2.78%	23,569	4.81%
Kandal	312,646	9,624	3.08%	21,348	6.83%	30,972	9.91%
Siem Reap	250,848	10,749	4.29%	19,830	7.91%	30,579	12.19%

Source: IDPoor Database, 2019

Disaggregating this data by sex of the household head, 42.2% of the poor households in Cambodia are headed by females. The share of female-headed poor households in Siem Reap are significantly lower than the national average at 35.6%, while in Kandal Province, it is only marginally lower at 41.8%. In contrast, Kampong Speu's share of female-headed households among the poor population is almost half at 47.5%, as presented in Error! Reference source not found.

**Figure 2.3-4: Total Poor Households by Sex of Head of Household⁶**

Source: IDPoor Database, 2019

Further analysis of data by poverty level show male-headed households holding a higher share, with an exception to Kampong Speu, wherein over half of the Poor Level 1 households (52.5%) are female-headed. Presenting the sex disaggregated data by poverty level, the data shows that the share of female-headed households among the Poor Level 1 households are higher by over 5%, in contrast to Poor Level 2 households as shown in **Figure 2.3-5**.

⁶ According to the IDPoor Database, Kampong Speu data was collected in 2017, Kandal Data was collected in 2019, and Siem Reap data was collected in 2018. National data was collected from 2017 to 2019. For indicators applying at individual level, this table shows the number of households with at least one member affected by selected indicators.

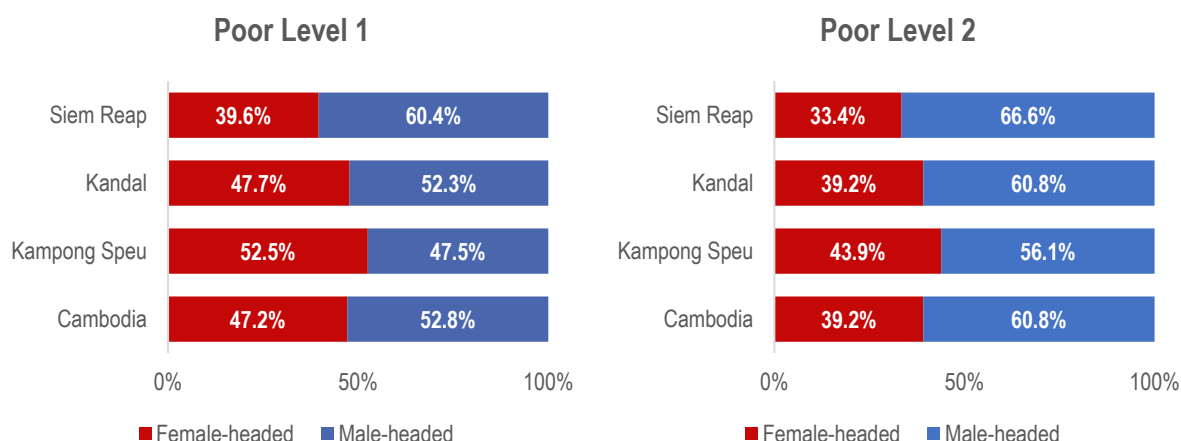


Figure 2.3-5: Poor Households by Level and Sex of Head of Household

Source: IDPoor Database, 2019

The concentration of poor households is further broken down by district in **Figure 2.3-6**. It should be noted that this data is based on surveys conducted between 2014 to 2016 in contrast to **Figure 2.3-8** that presents a more recent data set.

Percentage of Poor Households (Level 1 & 2 Poverty Categories)

Data source is ID Poor Provincial Surveys conducted between 2014 to 2016

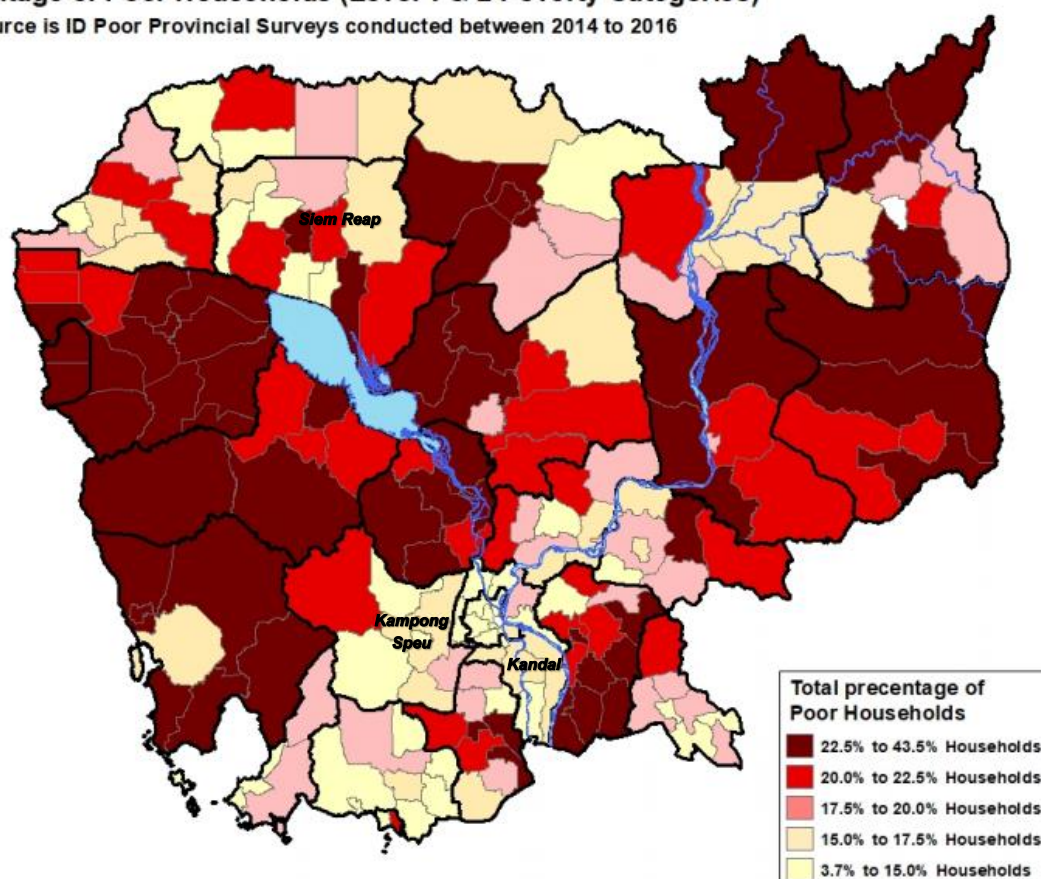


Figure 2.3-6: Percentage of Poor Households by Districts (2014 – 2016)

Source: Commune Database (2016) in Cambodia Atlas of Gender and Environment, The Asia Foundation (2018)

Table 2.3-8 provides a breakdown of the main economic activities and the socioeconomic characteristics of poor households in the provinces of Siem Reap, Kampong Speu and Kandal

from the collected data between 2010 to 2011 (WFP and MOP, 2012). Housing indicator was measured through the characteristics of their housing material (i.e., roof and wall), condition of house, and floor area. Ownership was measured through possession of assets (i.e., radio, mobile phone, etc.), livestock (i.e., fish, pigs, cows, etc.), transportation (i.e., bicycle, truck, boat, etc.). Productivity was measured by identifying household members that cannot produce income, and members engaged in income generating activities, such as farming, fishing, among others. Lastly, food security was measured by measuring which households borrowed rice in the past 12 months.

In Siem Reap, about a third of the poor households (62.6%) are engaged in rice farming. Similarly, rice farmers are also the main income activity of most poor households in Kampong Speu at 72.1%. On the other hand, 60.3% of the poor households in Kandal are engaged in other income activities apart from farming and fishing.

Table 2.3-8: Main Income Activities of Poor Households in Kandal, Kampong Speu, and Siem Reap (2010)⁷

Province / Country / Main Income Activity	Number of Households	Housing	Ownership			Productivity		Food Security
			Assets	Livestock	Transportation	Active Members	Income Generation	
		% Max	% Max	% Max	% Max	% Max	% Max	% Max
Siem Reap								
Growing Rice	33,130	86.6	94.5	84.8	92.2	72.1	73.6	71.6
Fishing	1,730	88.2	88.6	95.6	72.4	78.0	85.5	67.5
Other	16,703	86.6	90.4	96.1	91.8	75.0	93.4	70.0
Kampong Speu								
Growing Rice	24,088	80.2	88.6	83.5	89.9	72.0	85.0	76.7
Fishing	13	90.0	96.2	100.0	100.0	73.1	96.2	76.9
Other	7,272	84.0	87.9	96.0	92.1	72.5	94.7	88.6
Kandal								
Growing Rice	14,588	73.1	76.4	92.6	87.3	70.2	86.0	65.2
Fishing	3,142	81.4	80.6	97.4	82.9	74.2	89.2	56.5
Other	33,781	78.6	82.7	97.9	91.7	71.9	93.2	65.1
Cambodia								
Growing Rice	330,93	83.3	89.8	85.6	90.7	71.0	75.7	72.8
Fishing	14,812	85.0	85.3	95.4	79.1	77.4	88.6	68.2
Other	211,471	83.6	87.9	96.7	92.7	73.6	94.7	74.3

Source: IDPoor Atlas, 2012

Apart from the tagging of poor households under the IDPoor Program, a Multidimensional Poverty Index has been calculated in 2010 under the Oxford Poverty and Human Development Initiative in consideration of ten (10) poverty indicators across the dimensions of health (i.e., child mortality, nutrition), education (i.e., years of schooling, school attendance), and standard of living (i.e., cooking fuel, sanitation, water, electricity, floor, asset ownership) to measure poverty, well-being and inequality.

The Multidimensional Poverty Index of Siem Reap is 0.240 (ADB, 2014). Its poverty incidence of 51.8% is about average among provinces in Cambodia. The average intensity across the

⁷ Data on the respective provinces were collected as follows: Siem Reap and Kandal in 2010, and Kampong Speu in 2011.

poor is at 46.3%, while the percentage of population vulnerable to poverty is at 24.6% and those in severe poverty is at 19.4%. In comparison to the other provinces in Cambodia, Siem Reap is in the average range as shown in **Table 2.3-9**.

Table 2.3-9: Multidimensional Poverty Index of Siem Reap (2010)

Province	Multidimensional Poverty Index	Incidence of Poverty	Average Intensity Across the Poor	Percentage of Population Vulnerable to Poverty	Percentage of Population in Severe Poverty	Population Share
Siem Reap	0.240	51.8%	46.3%	24.6%	19.4%	6.4%
Kampong Speu	0.213	47.4%	45.0%	25.9%	13.6%	5.9%
Kandal	0.170	38.9	43.8%	26.3%	11.9%	9.5%

Source: Oxford Poverty and Human Development Initiative 2013 (University of Oxford)

The same report presented the poorest provinces based on the databases available in Cambodia. Siem Reap Province has identified as one of the poorest across all these databases.

Table 2.3-10: Poorest Provinces in Cambodia by Data Source (20019 – 2012)⁸

Rank	Province	CBD 2012	Province	ID Poor 2009-2011	Province	MPI 2010*
1	Preah Vihear	37	Koh Kong	44	Mondulkiri	44
2	Stung Treng	37	Kampong Chhnang	37	Rattanakiri	44
3	Rattanakiri	36	Kratie	36	Preah Vihear	39
4	Oddar Meanchey	34	Battambang	34	Stung Treng	39
5	Mondulkiri	33	Pursat	34	Kratie	29
6	Kratie	29	Preah Vihear	32	Pursat	25
7	Kampong Thom	28	Pailin	32	Kampong Thom	24
8	Siem Reap	29	Siem Reap	31	Kampong Chhnang	23
9	Pursat	28	Kampong Thom	31	Kampong Cham	20
10	Kampong Chhnang	28	Stung Treng	30	Siem Reap	19

Source: Oxford Poverty and Human Development Initiative 2013 (University of Oxford)

Note: CDB – Commune Database, MPI – Multidimensional Poverty Index

Basic Services and Utilities

Access to Water Supply

⁸ For the multidimensional poverty index indicated, this was derived from severe poverty rates of the provinces.

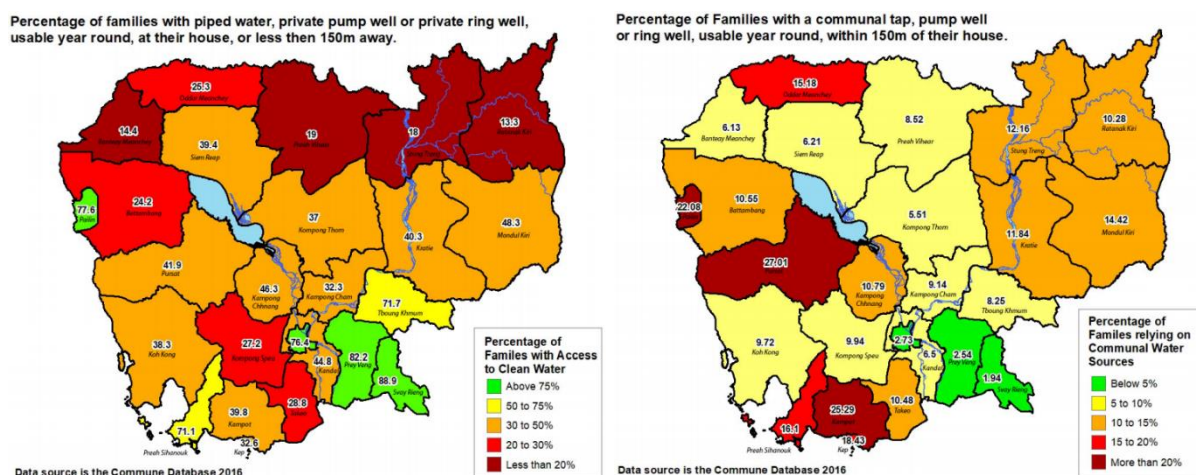


Figure 2.3-7: Families with Direct or Close Access to Clean Water (Left) and Families Reliant on Communal Water Sources (Right)

Source: Commune Database (2016) in *Cambodia Atlas of Gender and Environment*, The Asia Foundation (2018)

The percentage of families with access to clean water in Siem Reap, Kampong Speu and Kandal is 39.4%, 27.2% and 44.8% respectively. This represents those equipped through piped water, private pump well or private ring well which is available in all year and is accessed in or less than 150 meters from their house. As illustrated in **Figure 2.3-7**, the northern provinces in the country have less access to clean water. In the same figure, the share of families relying on communal water facilities to access clean water range between 5% to 10% for all three (3) provinces.

In Siem Reap, water supply networks have been constructed by the Siem Reap Water Supply Authority (SRWSA), mainly in the city center as shown in **Figure 2.3-8**. Many households are still using their private wells for sanitary and kitchen uses, and sometimes for drinking water (MPWT and CDI, 2019).

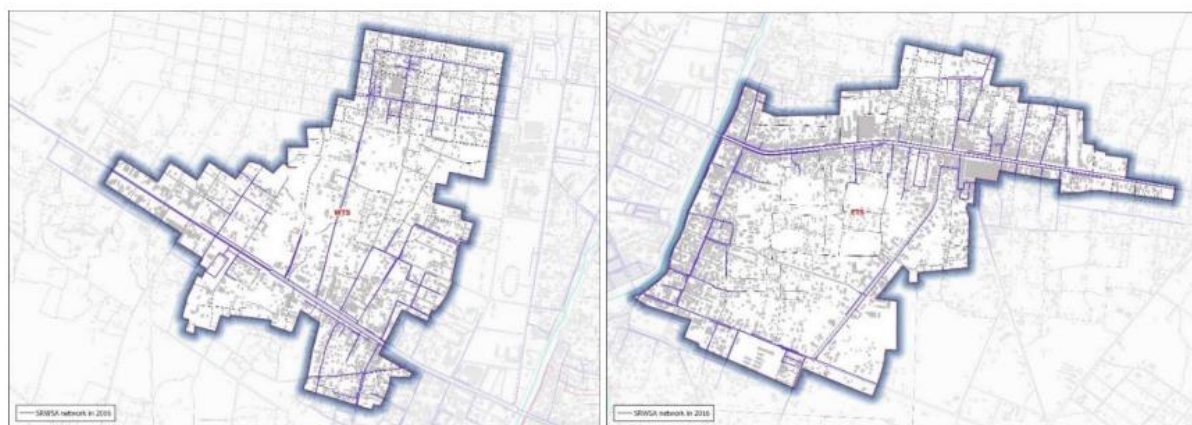


Figure 2.3-8: Water Supply Network in the West Trunk Sewer East Trunk Sewer Areas

Source: SRWSA (2016) in MPWT and CDIA city development initiatives for Asia (2019)

Access to Sanitation

From the 2016 data in the commune database, the ratio of family to toilet facility in the Provinces of Siem Reap, Kampong Speu, and Kandal is below 1:1. In Kandal, the average is 0.7 toilet per family. On the other hand, the ratio in Siem Reap Province is 0.6 toilet per family.

Kampong Speu is among the provinces with the lowest toilet to household ratio at 0.5, as shown in **Figure 2.3-9**.

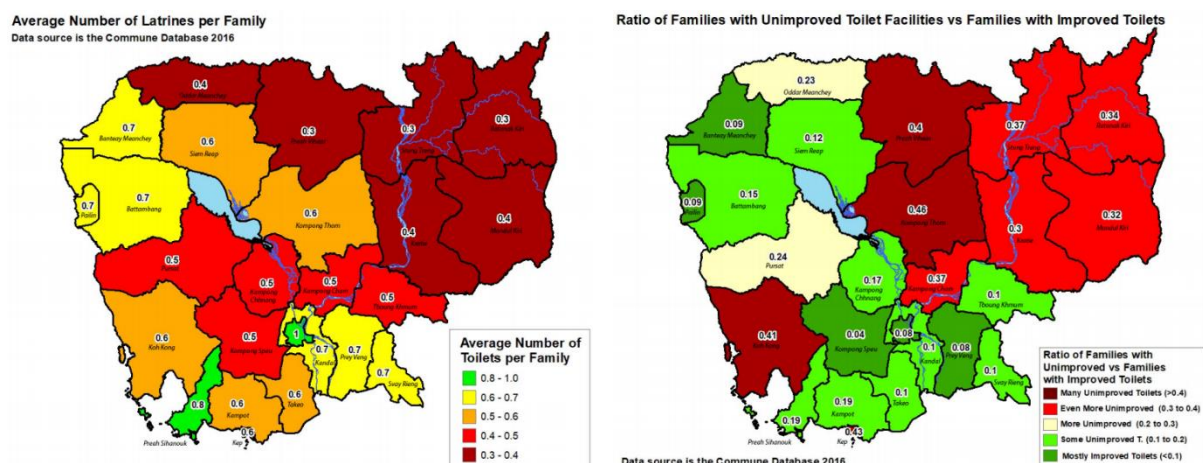


Figure 2.3-9: Toilet to Household Ratio (Left) and Ratio of Households with Unimproved Toilet Facilities (Right), 2016

Source: Commune Database (2016) in *Cambodia Atlas of Gender and Environment*, The Asia Foundation (2018)

Most households in Siem Reap Province have access to toilet. Three (3) common septic tanks are in practice in Siem Reap: brick/concrete septic tank (21%), ring tank (56%), soak away tank (19%), other (4%). Out of these septic tanks, 85% of them are unsealed base tanks (MPWT and CDI, 2019).

Economy, Livelihood and Employment

The top three (3) leading industries in Cambodia are Agriculture, Forestry & Fishing, Wholesale & Retail Trade, and Manufacturing. Much like majority of Cambodia, the Agriculture, Forestry & Fishing industry contributes to the largest portion of employment in Siem Reap as of 2013 at 63.0% of the total employment. There were more females employed in the three (3) industries, with the biggest difference with males in the Wholesale & Retail Trade. The females employed in the manufacturing sector is greater in Kampong Speu (26.5%) and Kandal (26.0%) in contrast to the national average of 10.3% (NIS and JICA, 2013).

Table 2.3-11 shows the total employed population by leading industry in Cambodia.

Table 2.3-11: Total Employed Population by Leading Industry in Siem Reap (2013)

Province / Employment	Female	Male	Both Sexes
Kampong Speu			
Employed Persons (Aged 15 and Over)	234,954	208,962	443,917
% Agriculture, Forestry & Fishing	62.8	65.2	64.0
% Wholesale & Retail Trade, Others	6.7	5.6	6.2
% Manufacturing	26.5	11.9	19.6
Kandal			
Employed Persons (Aged 15 and Over)	321,935	305,486	627,421
% Agriculture, Forestry & Fishing	47.8	45.3	46.6
% Wholesale & Retail Trade, Others	15.6	9.9	12.8
% Manufacturing	26.0	12.1	19.2
Siem Reap			

Province / Employment	Female	Male	Both Sexes
Employed Persons (Aged 15 and Over)	239,230	243,753	482,984
% Agriculture, Forestry & Fishing	67.9%	58.2%	63.0%
% Wholesale & Retail Trade, Others	10.9%	5.0%	8.0%
% Manufacturing	3.7%	2.5%	3.1%
Cambodia			
Employed Persons (Aged 15 and Over)	4,071,609	3,987,921	8,059,530
% Agriculture, Forestry & Fishing	66.3	62.1	64.2
% Wholesale & Retail Trade, Others	12.7	7.4	10.1
% Manufacturing	10.3	5.8	8.1

Source: Cambodia Inter-censal Population Survey 2013 (Statistics Bureau of Japan)

The main industries in Siem Reap are travel and tourism, retail and wholesale, and manufacturing and handicrafts, and agriculture. The tourism industry employs over a quarter of the labor force in the province (Biz Info, n.d.). The average of household incomes is estimated to USD \$789 per month in the overall city of Siem Reap (MPWT and CDI, 2019). Household incomes in Siem Reap are higher than in other main cities around the Tonlé Sap Basin. This is due to tourism activity from Angkor Heritage Site which provides economic benefits to the local population.

Tourism

Since 2015, Cambodia has consistently been welcoming over 5 million international tourists. In 2019, they recorded a total of 6.6 million tourist arrivals, staying at an average length of six (6) days in the country, with a total international tourism receipt of USD \$4.9 billion (MOT, 2020). Most of international tourists visit Phnom Penh, followed by Siem Reap Angkor. On the other hand, the destinations visited by local tourists is the Coastal Zone. These are presented in **Figure 2.3-10**.

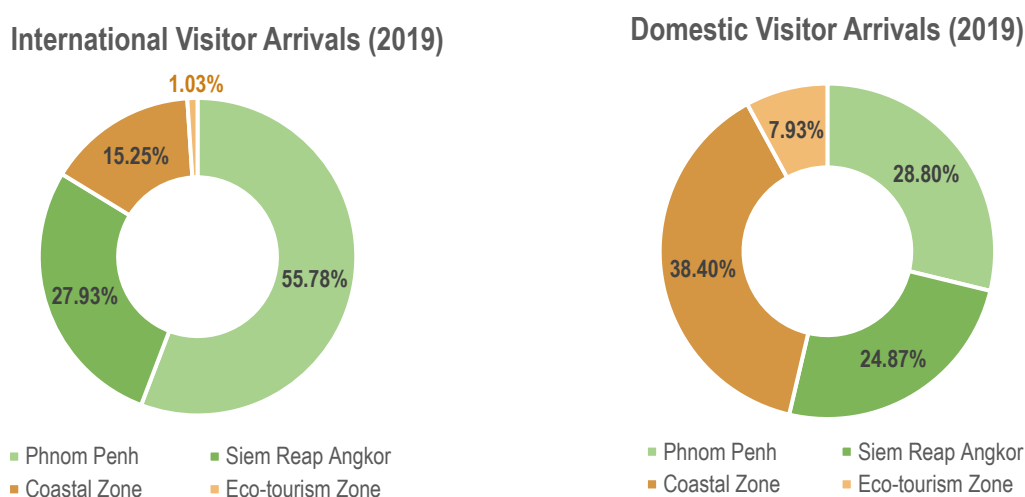


Figure 2.3-10: Domestic and International Visitor Arrivals in Cambodia by Destination (2019)

Source: Ministry of Tourism, 2020

However, the travel restrictions due to the COVID-19 pandemic has significantly affected the sector. In 2020, only 1.3 million international tourist arrivals were recorded, or a decrease of 80% from the previous year (MOT, 2020) as shown in **Table 2.3-12**. In the same year, domestic

tourist arrivals held 78% of the total tourist arrivals, in contrast to the previous years where share of domestic and international tourist were fairly close, as presented in **Table 2.3-13**. Among the destinations, Siem Reap showed the highest decrease in arrivals for both local and international tourists at a decrease of 65.8% and 80.8% respectively. Specifically in the tourism sector, but also generally, there is significant adverse impact of COVID on socio-economic conditions of people. These include unemployment, loss of income, and reduced nutrition, among others.

Table 2.3-12: International Arrivals, Average Length of Stay, Hotel Occupancy and Tourism Receipts (2015-2019)

Year	International Tourist Arrivals		Average Length of Stay (Days)	Hotel Occupancy (%)	International Tourism Receipts (USD \$ million)
	Number	% Change			
2015	4,775,231	6.1	6.8	70.2	3,012
2016	5,011,712	5	6.3	68.9	3,212
2017	5,602,157	11.8	6.6	71.3	3,638
2018	6,201,077	10.7	7	72.2	4,375
2019	6,610,592	6.6	6.2	63.5	4,919
2020	1,306,143	-80.2	no data	no data	no data

Source: Ministry of Tourism, 2020

Table 2.3-13: Tourist Arrivals in Cambodia by Destination (2019-2020)

Region		2019		2020		% Change	
		Local	Int'l	Local	Int'l	Local	Int'l
Phnom Penh		2,381,301	4,404,895	1,835,414	905,254	-22.9	-79.4
Siem Reap Angkor		2,056,609	2,205,697	703,147	400,889	-65.8	-81.8
Coastal Zone		3,175,780	1,204,374	2,873,483	356,863	-9.5	-70.4
Preah Sihanouk		1,343,690	885,792	793,607	225,316	-40.9	-74.6
Eco-tourism Zone		656,029	81,588	582,423	24,887	-11.2	-69.5
TOTAL	Number	8,269,719	7,896,554	5,994,467	1,687,893	-27.51	-78.62
	Percentage	51.2%	48.8%	78.0%	22.0%		

Source: Ministry of Tourism, 2020

2.3.2 Overview of the National Social Protection Strategy

The Royal Government of Cambodia's (RGC) National Social Protection Strategy (NSPS) for the Poor and Vulnerable defines the poor and vulnerable as:

- People living below the national poverty line; and
- People who cannot cope with shocks and/or have a high level of exposure to shocks (of these, people living under or near the poverty line tend to be most vulnerable).

The NSPS affirms the intrinsic relationship between poverty and vulnerability and recognizes the tendency of poor households to have “fewer coping strategies to protect them against shocks.” It groups key risks and shocks into 1) emergencies and crises; 2) human development constraints; 3) seasonal unemployment and income insecurity, and 4) health shocks. The NSPS also identifies 1) infants and children; 2) girls and women of reproductive age; and 3) households vulnerable to food insecurity and unemployment as specific groups that comprise the vulnerable in Cambodia. The fourth group is referred to as other special vulnerable groups

and is composed of people living with HIV and their families; homeless people; people with disabilities; orphan children and at-risk children and youth; victims of violence, abuse and exploitation; indigenous peoples/ethnic minorities; families of migrants; veterans; and the elderly. In so far as the definition of the poor and vulnerable under the NSPS is concerned, the waste pickers fall within the aforementioned categories.

The Cambodia Gender Assessment 2014⁹ further identifies vulnerable groups of women and girls and classifies them into the following:

- Women and girls with disabilities;
- Elderly women;
- Widows and women-headed households;
- Lesbian and bisexual women;
- Transgender people;
- Women and girls from indigenous groups and from ethnic/indigenous and religious minorities;
- Women survivors of gender-based violence (GBV) and their children;
- Women who experienced sexual violence and/or forced marriage during the Khmer Rouge regime;
- Women and girls with HIV;
- Women and girls living in remote areas;
- Women living in prison; and
- Women engaged in prostitution and/or working in the “men’s entertainment” sector.

Multidimensional Poverty Index of Siem Reap was 0.240, Kampong Speu was 0.213, and Kandal was 0.170. Poverty incidence was highest in Siem Reap (51.8%) compared to Kampong Speu (47.4%) and Kandal (38.9%). However, the percentage of the population vulnerable to poverty was found to be highest in Kandal (26.3%), followed by Kampong Speu (25.9%) and Siem Reap (24.6%).

The number of persons with disability was found to be highest in Kandal (7.6% of the total population), followed by Siem Reap (5.9% of the total population) and Kampong Speu (5.2% of the total population). There were more females with disability found across the three (3) provinces than males.¹⁰ The most common disability found across the three (3) provinces was on sight, followed by hearing and walking.

Female-headed households were also found to be at 13% in Siem Reap Province and 15% each in Kandal and Kampong Speu.

2.3.3 Overview of Cultural Heritage Areas

The Angkor Zone is one of the cultural heritage sites in Cambodia that has been inscribed in the World Heritage List of the United Nations Educational, Scientific, and Cultural Organization (UNESCO). The site in Banteay Srei, Roluos, and the core segment of Angkor falls under Zone 1, while the surrounding areas of Angkor fall under Zone 2 (APSARA

⁹ A report produced under the overall leadership and coordination of RGC’s Ministry of Women’s Affairs, with support and contributions from government line ministries, development partners, and civil society groups.

¹⁰ Based on 2020 data from the National Institute of Statistics.

National Authority, 2011). Its components and their respective land areas are shown in **Table 2.3-14** and illustrated in **Figure 2.3-11**.

Table 2.3-14: Properties Inscribed on the World Heritage List in Cambodia

Component	Region	Zone 1 (sq.km.)	Zone 2 (sq.km.)
Angkor	Siem Reap	162	189
Roluos	Siem Reap	28	2
Banteay Srei	Siem Reap	18	2
TOTAL (sq.km.)		208	193
		401	

Source: APSARA Authority, 2011

APSARA has indicated that archaeological relics are common throughout the Siem Reap Province that there is a possibility that these may exist in sites being proposed and assessed. For sites that are currently used for agricultural purposes, finding undisturbed relics is “considered unlikely”. However, in the event that relics are found, the projects must adhere to existing cultural heritage and protection laws and procedures on how to handle such situations.

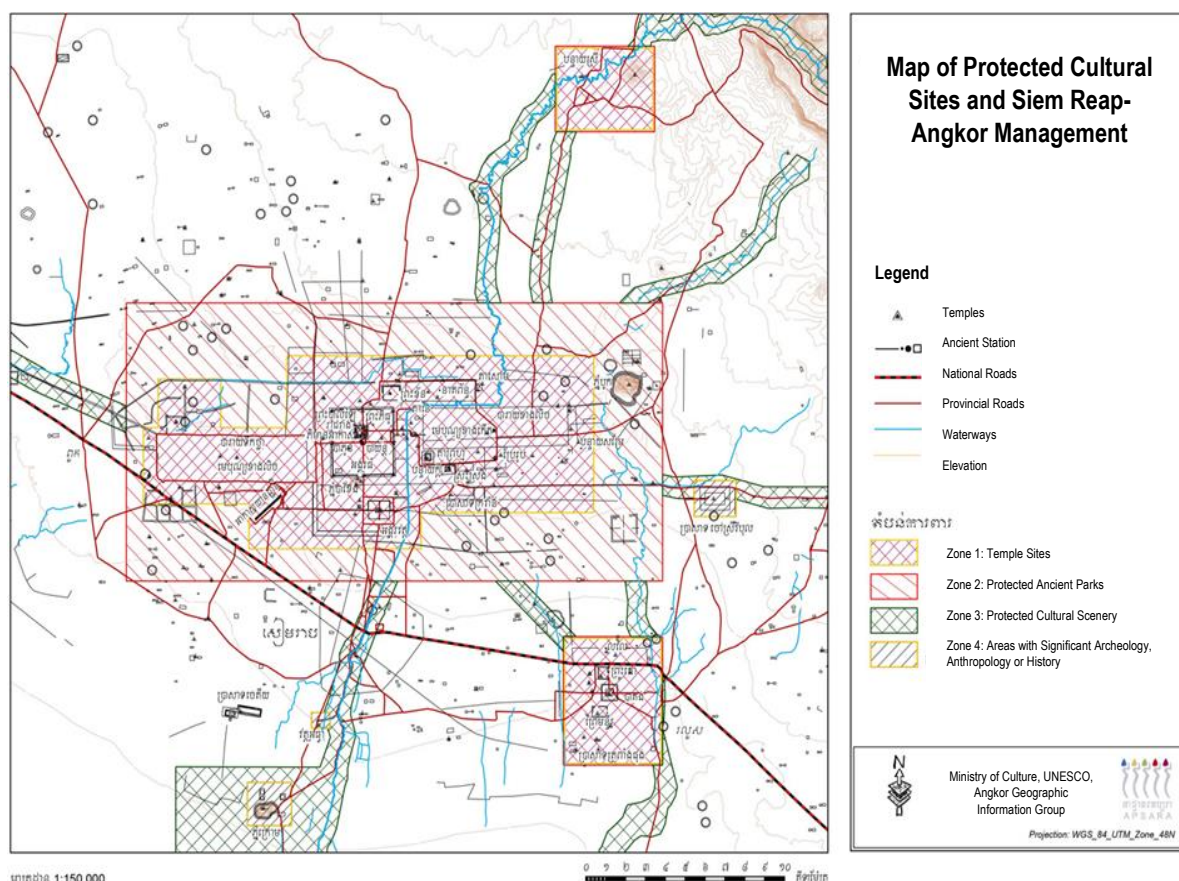


Figure 2.3-11: Map of Cultural Heritage Areas under the Protection of APSARA Authority

Source: APSARA Authority, 2021

Apart from the Angkor Temples, the RGC has submitted additional sites in Siem Reap Province for consideration by UNESCO, including the following:

- **Beng Mealea Temple** – located in the Beng Mealea village, Beng Mealea Commune, Svay Leu District, Siem Reap Province (RGC, 2020). While the temple is outside the Angkor Zone, it is being managed by the APSARA Authority.
- **Phnom Kulen: Archeological Site/Ancient Site of Mahendraparvata** – a 37,375-hectare proclaimed national park in Banteay Srey, Svay Leu and Varin districts, Siem Reap Province about 30 kilometers from Tonle Sap Lake. It has been under the APSARA Authority since 2008 (RGC, 2020).

In Kandal Province, the Permanent Delegation of RGC to UNESCO submitted the Ancient City of Ondong for consideration to be declared as a UNESCO World Heritage Site and is now under the UNESCO Tentative Lists of States Parties. Currently, it is under the jurisdiction of Ministry of Culture and Fine Arts (RGC, 2020).

2.3.4 Overview of Protected Areas

Apart from these cultural heritage sites, Tonle Sap Biosphere Reserve (TSBR) is UNESCO Biosphere Reserve and is protected under the Royal Decree on the Establishment and Management of Tonle Sap Biosphere Reserve (2001). It is under the authority and protection of the General Department of Administration for Nature Conservation and Protection in the MOE. The TBSR has three (3) zones, as presented in **Table 2.3-15**.

Table 2.3-15: Zones of the Tonle Sap Biosphere Reserve

Component	Area (ha)	Description
Core Area	42,257	For long term protection, and human activity is limited to monitoring and research; Has the richest visitation and a unique biodiversity for 225 bird species.
Buffer Zone	541,482	Surrounding the core area and serves as its protection. The zone can accommodate education and training activities; and
Transition Area	899,600	Has agricultural and residential land uses.
Total	1,483,339	Total terrestrial surface area

Source: UNESCO, 2015

The water body is also under within the statutory framework of the World Network of Biosphere Reserves. Within the TSBR is the Ramsar site of the Boeung Chhmar and Associated River System and Floodplain.

The proximity of the site options to the protected areas, including the TBSR, is shown in **Figure 2.3-12**.

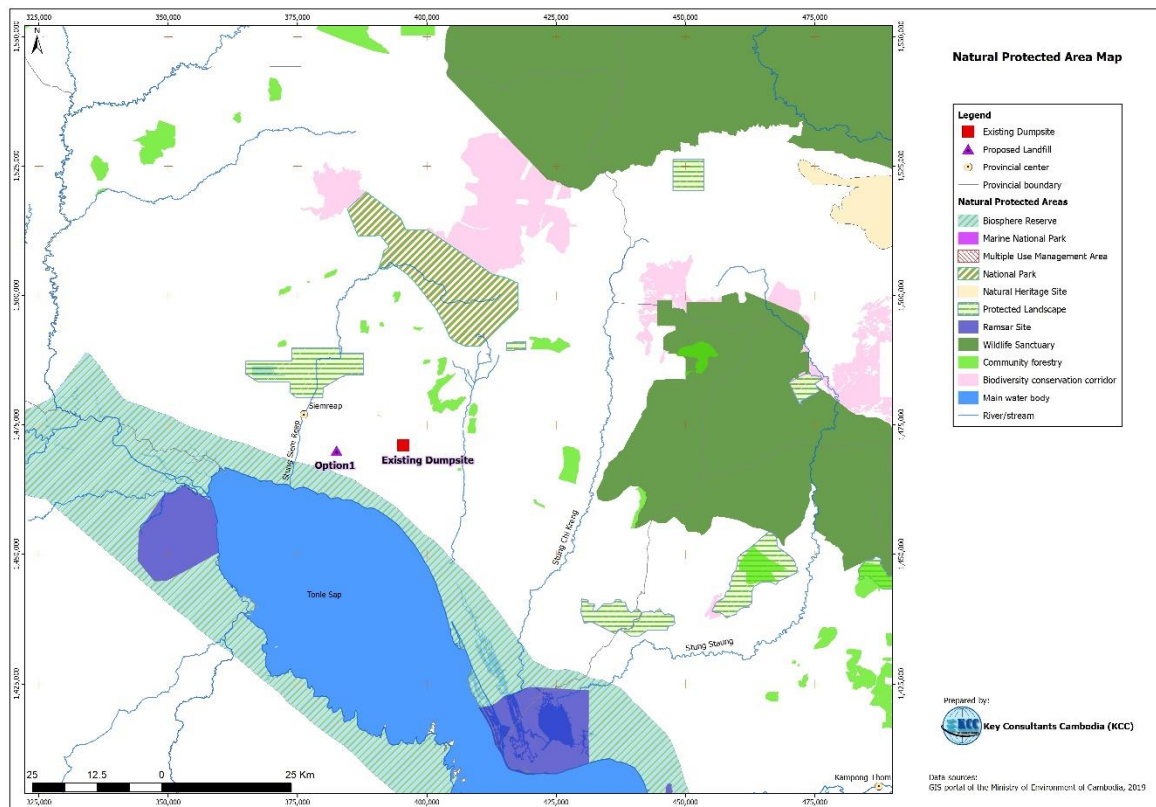


Figure 2.3-12: Location of Siem Reap Site Options and Nearby Protected Areas

Data Source: MoE, 2019

2.4 OVERVIEW OF HEALTH INDICATORS, AND INCIDENCE OF ENDEMIC DISEASES AND EPIDEMICS

Endemic diseases are those that have constant and/or usual prevalence in a population within a defined geographic area (CDC, 2011). Diseases which are constantly present at high incidence and/or prevalence rates and affect all groups equally are considered hyperendemic (Porta, 2014). The diseases that are considered as endemic to Cambodia:

- Tuberculosis
- Malaria
- Dengue

Respiratory diseases, malaria, dengue fever and diarrhea commonly occur in the northern provinces of Cambodia, including Siem Reap, most especially during rainy. In dry season, some of these diseases still occur, particularly respiratory diseases dust, and diarrhea due to bad sanitation condition. Waterborne disease is mainly found due to the dirty water which is contaminated in the water body and caused from waste disposal without appropriated landfill. Waterborne diseases that can be found in the area include cholera, diarrhea, typhoid, malaria, dengue fever and skin infection (MPWT and CDI, 2019). Siem Reap, in particular, is one of the provinces with the highest cumulative cases in the country as illustrated in **Figure 2.4-1** (Choi, et al., 2016).

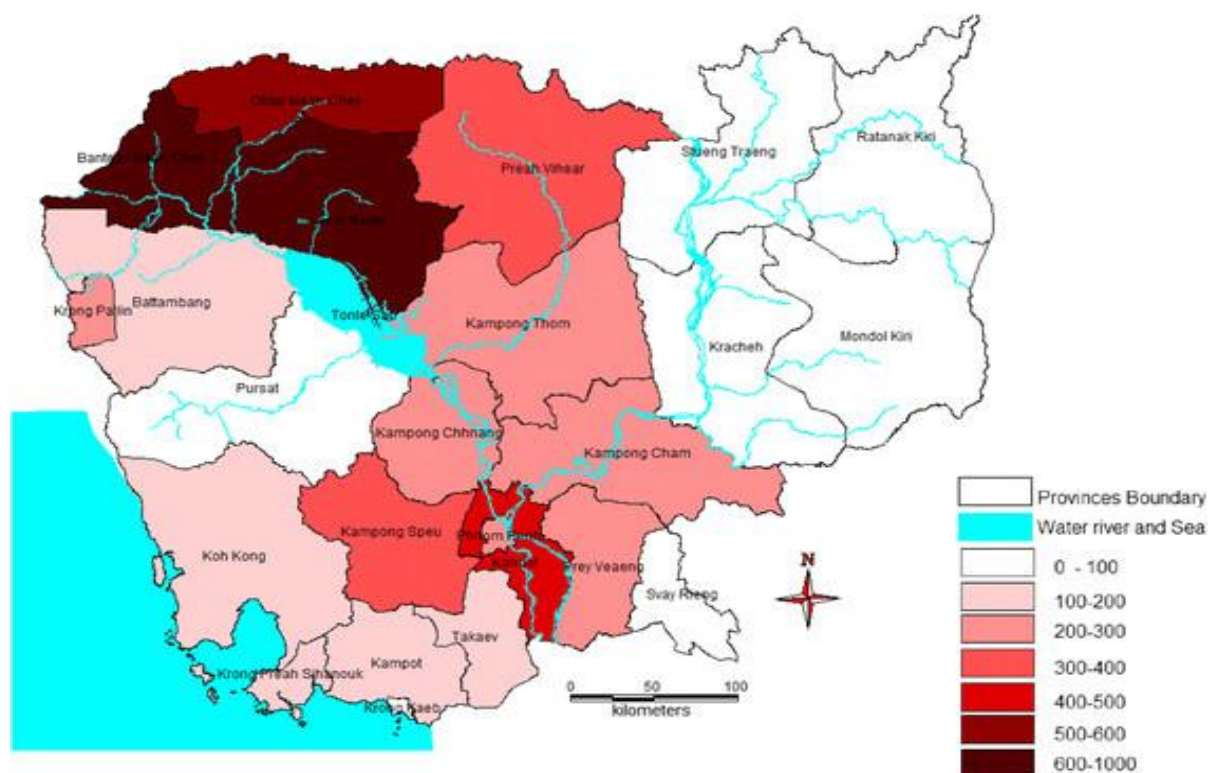


Figure 2.4-1: Cumulative Incidence of Dengue Cases per 100,000 Population in Cambodia, 2012

Source: Choi, et al (2016)

Table 2.4-1 summarizes the health situation in Siem Reap, Kampong Speu, and Kandal (NIS, DGH and ICF International, 2014).

Table 2.4-1: Health Indicators (2014)

Indicator	Unit	Cambodia	Siem Reap	Kampong Speu	Kandal
Fertility					
Total fertility rate	number of children per woman	2.7	2.7	2.4	2.5
Maternal Health (women age 15-49)					
Antenatal care from skilled provider	%	95	96	65	61
Births delivered in a health facility	%	83	92	41	40
Births assisted by a skilled provider	%	89	93	10	12
Child Health					
Children age 12-23 months who received all basic vaccinations	%	73	79	67	65
Nutrition					
Children under 5 who are stunted	%	32	36	41	28
Children under 5 who are wasted	%	10	10	12	9
Children age 6-59 months with any anemia	%	56	52	64	59
Women age 15-49 who are obese	%	18	17	11	17
Women age 15-49 with any anemia	%	45	41	53	49
Children Mortality (deaths per 1,000 live births)					

Indicator	Unit	Cambodia	Siem Reap	Kampong Speu	Kandal
Infant mortality	deaths / 1000 live births	28	40	26	30
Under-five mortality	deaths / 1000 live births	35	56	31	40
HIV/AIDS (age 15-49)					
Women tested for HIV in past 12 months and received result	%	10	11	8	8
Men tested for HIV in past 12 months and received result	%	9	5	7	12

Source: Cambodia Demographic and Health Survey 2014

The Coronavirus (COVID 19) Pandemic

The Royal Government of Cambodia developed its National Master Plan for COVID-19 Response with support from the World Health Organization (WHO) and other international partners. The overall goal of the master plan is to control the transmission of COVID-19 and to mitigate health, social, and economic impacts of the epidemic in Cambodia which is aligned with the WHO's 2019 Novel Coronavirus: Strategic Preparedness and Response Plan.

In line with the master plan's nine (9) priority areas, WHO provides policy advice and technical support to the Ministry of Health (MOH) to respond to the current situation, while at the same time, the government is preparing for the possibility of widespread community transmission. A key objective of this master plan is to minimize impact through a coordinated, multi-sectoral response to support public health and broader social and economic measures. Cambodia's favored approach, given there are many uncertainties around the virus and its potential trajectory, is to execute risk-based decision-making, anticipating and responding to the rapidly evolving situation, and balancing the consequences of interventions considering the public health risk, and the social and economic impacts of each action. Cambodia has activated national and provincial public health emergency management mechanisms to provide coordinated management of the COVID-19 response. This includes the formation of the National Committee for COVID-19 led directly by the Samdech Prime Minister. The Committee is responsible for (a) setting national policies and strategies for the COVID-19 response, (b) leading the implementation of the strategic plan for the prevention, control and management of COVID-19, and (c) responding to the associated political, economic and social impacts at all levels. In early April 2020, the RGC announced the creation of the Inter-Ministerial Committee to Combat COVID-19, headed by the MOH. The same approach is also being implemented at the provincial level led by the respective provincial governors.

Together with the WHO, the US Centers for Disease Control and Prevention (CDC), and the Pasteur Institute in Cambodia, the MOH has issued the following health protocols (a) to protect its citizens from the on-going pandemic and (b) to mitigate the social and economic impacts to the country:

1. Prioritization of detection, isolation, and treatment of people who have tested positive for COVID-19
2. Close-contact tracing and management of follow-ups/check-ups

The surveillance system has adjusted its strategy to conduct “hotspot hunting”, a modified contact tracing approach to focus on high-risk locations with higher percentages of individuals testing positive for COVID-19. In higher risk settings, mobile units are set-up on site to allow quick and convenient testing minimizing the need to travel to health facilities. Following WHO guidance, The MOH also implements a quarantine period of 14 days for those who have been tagged as close-contacts to those who have tested positive for COVID-19. The following are the “DOs and DON'Ts” urged by the MOH for all citizens to follow:

Table 2.4-2: Ministry of Health COVID-19 “DOs and DON'Ts”

Dos	DON'Ts
Wear your mask always	Stay in confined and enclosed spaces
Wash your hands regularly	Crowded spaces
Maintain physical distance of 1.5 meters	Unnecessary touching of individuals
Stay home if you have a fever or suspect that you have COVID-19 and immediately seek medical assistance or call the 115 hotline	

These protocols and restrictions, however, has significantly affected the informal economy, including wastepickers. The collected wastes of the waste pickers are often sold to recycling centers and dismantling shops, wherein the latter have links to buyers of these recovered waste. The COVID-19 pandemic along with its restrictions, has led to the closure of some recycling depots. Even when some of the establishments have reopened, the price of recyclable wastes has decreased, the price of plastic bottles in particular has dropped by over 50%. This has affected the income of the wastepickers given that the number of buyers of collected wastes have significantly reduced. According to Beresford & Wasserman (2020) the income of wastepickers have reduced by 80% in April to September 2020, from the same period in 2019. The pandemic has also required the use of personal protective equipment, including single-use face masks which all end up in the dumpsite. Furthermore, wastepickers also often work without any protective equipment and are put at risk from exposure due to this.

Depending on developments on vaccine availability and vaccination rates, the COVID-19 pandemic is expected to cause some delays to project implementation because of restrictions on gatherings and mobility. Localized lockdowns may also hamper movement of supplies and project-employed individuals.

3 LAWS, REGULATIONS, AND INSTITUTIONAL FRAMEWORK

3.1 RELEVANT DOMESTIC ENVIRONMENTAL LAWS, REGULATIONS AND POLICIES

The hierarchy of legislation in Cambodia is as follows: (i) Royal Decree; (ii) Sub-decree; and, (iii) Ministerial Decision and Regulation. The Royal Decree ratifies laws passed by the Parliament, which can be supplemented by “Prakas” or ministerial decisions. These laws allow sub-decrees and regulations to be passed, which can stipulate procedures and standards to be met to ensure compliance with the law. In addition, there are several guidance documents that are designed to support best practices as required in Cambodia.

The overall management of the environment is under the responsibility of the MOE, which was created in 1993. The MOE is responsible for the implementation of the Law on Environmental Protection and Natural Resources Management. At the provincial and city levels, there are corresponding provincial/city environment departments. These local departments are responsible for the enforcement of the environmental legislation coming under the competence of the MOE. However, the daily operation functions of these departments would normally be under the direct control of the provincial authorities.

The framework law calls for an initial environmental impact assessment (IEIA) or full environmental impact assessment (EIA), depending on type and activity and the site of the project (Sub-Decree on IEIA/EIA process, article 1 and 2 of Sub-Decree of IEIA/EIA process), to be conducted for every private or public project, to be reviewed by the MOE before submission to the Government for a final decision. All proposed and existing activities are to be covered under this requirement. The Declaration on General Guidance, N 376 BRK.BST, for conducting initial and full environmental impact assessment was signed and enacted on September 2, 2008 by the Minister of Environment. The goal of the guidance is to implement initial environmental impact assessment (IEIA), full environmental impact assessment (EIA), and to provide general guidelines and checklists. IEIA or EIA is required for every project, depending on type and activity and the site of the project (Sub-Decree on IEIA/EIA process, article 1 and 2 of Sub-Decree of IEIA/EIA process). The MOE is responsible for reviewing the EIA reports, the required follow-up, and monitoring.

In 2020, Prakas No. 021 amended the listing of impact classifications of development projects and identified the documentary requirements depending on the scale of risk and impacts as presented in **Table 3.1-1**. The Prakas provides that these documents will be submitted by project proponents to the EIA Department of the MOE.

Table 3.1-1: Risk Categorization of Environmental and Social Impacts

Category	Documentary Requirements
Minor Environmental and Social Impacts	<ul style="list-style-type: none"> • Environmental protection agreement / contract • Environmental Management Plan
Moderate Environmental and Social Impacts	Initial environmental and social impact assessment
Serious Environmental and Social Impacts	Full environmental and social assessment

Source: Prakas 21, Article 4-7

The risk classification for development projects that may be relevant to the landfill infrastructure and associated facilities are summarized in **Table 3.1-2**.

Table 3.1-2: Classification of EIA for Development Projects Relevant to Solid Waste and Plastics Management and Associated Facilities

Type of Infrastructure	Size / Area	Risk Classification
Dumpsites	All sizes	IEIA / Medium Environmental and Social Impacts
Industrial waste dumping sites	All sizes	Full EIA / Serious Environmental and Social Impacts
Solid waste recycling and incinerating Factories	All sizes	IEIA / Medium Environmental and Social Impacts
Business in collecting, stocking and processing all types of used car tires	All sizes	Environmental protection contract, and EMP / Minor Environmental and Social Impacts
Construction of all kinds of buildings (offices, multipurpose buildings, commercial buildings, condominiums, building blocks, flats and villas, supermarkets and other buildings)	3,000 – 15,000 sq.m.	Environmental protection contract, and EMP / Minor Environmental and Social Impacts
	15,000 – 45,000 sq.m.	IEIA / Medium Environmental and Social Impacts
	> 45,000 sq.m.	Full EIA / Serious Environmental and Social Impacts

Source: Prakas 21 Appendix

The national government authorities with their corresponding functions and responsibilities on solid waste management are detailed in **Table 3.1-3**.

Table 3.1-3: Authorities in Solid Waste Management

Authority	Main Responsibilities
Ministry of Environment (MOE)	<ul style="list-style-type: none"> Leading and pushing operation of the management of garbage and solid waste Determinate the maximum fees with MOI and MEF
Ministry of Interior (MOI)	<ul style="list-style-type: none"> Supports the capacity building and experience sharing with the sub-national administration (SNA) Coordinate the SNA
Municipal and District Administrations	<ul style="list-style-type: none"> Establish, control and manage cleaning, collecting and transporting services, Manages related-works to SWM Prepare management plans, yearly actions and budget plans, Determinate the fees for the SWM services
Provincial Administration	<ul style="list-style-type: none"> Advice and provide supports to the municipal and district administrations on legal, regulatory and technical aspects Coordinate the preparation of the management plans
Provincial Department of Environment	<ul style="list-style-type: none"> Promote citizens' education Participate in the preparation of the management plans Participate in the implementation of fine measures

Cambodia's main legal framework for addressing environmental protection and management of natural resources and public consultation is the Law on Environmental Protection and Natural Resource Management ('the Environment Law'), which was adopted in 1996. This law, along with other regulations and sub-decrees of the RGC related to solid waste management and environmental and social impact and risk management, are elaborated in **Table 3.1-4**. The overall approach in this ESMF shall be anchored to these policies.

Table 3.1-4: Policies in Cambodia Related to Solid Waste Management Policies and Environmental Management

Policy	Summary	Applicable to SWM
<i>Solid Waste Management</i>		
Law on Environmental Protection and Natural Resource Management (1996)	The law serves as the legal basis for the development and updating of environmental plans at the national and regional levels every five (5) years. The law also includes the formulation of sub-decrees on Air Pollution Monitoring and Noise Disturbance, Water Pollution Control, and Environmental Impact Assessment Process. The law emphasizes the protection of environmental and natural resources and provides due consideration to environmental impact assessment, natural resource management, sustainability and conservation, public participation and suppression of any acts that may contribute harm to the environment;	Yes
Sub-decree 182 (2019)	The sub-decree consolidates the responsibility and accountability on the operation and management of city assets and services to the Municipal administration under the Public Works, Transport, Sanitation, Environment, and Public Order Office, as stated in Article 24.	Yes
Sub-decree 113 on Management of Municipal solid wastes relegating solid waste management under the responsibility of the municipality (2015)	The sub-decree regulates solid waste, garbage, and hazardous waste management. The Sub-decree was set with proper technical manners and safe ways to ensure the protection of human health and to conserve biodiversity. The Sub-decree on Solid Waste Management is comprised of six (6) chapters: (i) General Provision; (ii) Household Waste Management; (iii) Hazardous Waste Management; (iv) Monitoring and Inspection of Hazardous Waste Management; (v) Penalty; and (vi) Final Provision The sub-decree aims to enhance the management of garbage and solid waste of downtowns with effective, transparency and accountability, referring to ensure aesthetics, public health and environmental protection.	Yes
Sub-decree 168 on Plastic Bag Management (2017)	The sub-decree aims to increase effectiveness of plastic reduction on importation, production, distribution and the use of plastic bag in order to improve the public health, environment and landscape	Yes
Sub-Decree 235 on Management of Sewer System and Waste Water Treatment System (2017)	The sub-decree aims to improve the management of drainage system and wastewater systems efficiently, transparently and accountably to ensure the safety of public health and biodiversity conservation	Yes
Sub-Decree 16 on E-Waste management (2016)	The sub-decree covers all the activities regarding disposal, storage, collection, transport, recycling, dumping of electrical and electronic equipment (EEE) waste.	Yes
Sub-decree 80 on Solid Waste Management in Provinces and Cities (2003)	The joint sub-decree of the MOI and MOE aims to improve the responsibility of authorities and institutions involved in solid waste management for environmental and efficient implementation of solid waste management in provinces and cities.	Yes
Sub-decree 36 on Solid Waste Management (1999)	The sub-decree establishes technical and safety regulations of all activities in solid waste management related to health, safety and biodiversity conservation. The sub-decree also relegates the collection, transport, storage, recycling, minimizing and dumping of waste to the respective governments of provinces and cities.	Yes
Inter-ministerial Prakas 195 of MOE, MOI and MEF on solid waste management fees (2018)	The prakas determines the maximum fees of solid waste management in municipalities as per the article of the sub-decree. The fees apply to the services of cleaning, garbage collection, transportation and landfill. There is no mention about pre-sorting, recycling or compost. The MA has the possibility to request a fee higher than the one of the decrees. This request shall be approved by the MEF and the MOE. Through this Inter-ministerial Prakas, the national administration focuses more on the affordability of the population. The income generated by the	Yes

Policy	Summary	Applicable to SWM
	service is personal income of the MA. The MA may utilize additional sources to support the service. In particular, transfer budget (or subventions) is authorized.	
Joint Declaration MOE and MOI on Household Waste Management	The prakas aims to: (i) Protect and promote environmental quality and public health through the prevention, reduction, and control point sources and non-point sources of pollution; (ii) Assess the environmental impact of all proposed projects prior to the issuance of a decision by the RGC; (iii) Ensure the rational and sustainable conservation, development, management, and use of the natural resources of the Kingdom of Cambodia; (iv) encourage and enable the public to participate in environmental protection and natural resource management; and (v) suppress any acts that cause harm to the environment.	Yes
Technical guideline on municipal solid waste management (2016)	The guidelines include the technical directions and detailed instructions related to the operations, maintenance, and closing of landfills, including composing methods, management and treatment of medical and chemical waste, as well as information on environmental education. These guidelines were developed through the support of the EU, MOE, and Cambodian Education and Waste Management Organization (COMPED).	Yes
Prakas 447 on Battery Waste Management (2016)	The prakas focuses on safe battery management, laying out specific guidelines on the collection, storage, treatment, delivery and disposal of batteries by households and businesses	Yes
Prakas 387 on standard consumption for toxic substances or hazards permitted disposal (2015)	The prakas aims on restricting the amount of toxic chemicals or hazardous substances contained in hazardous waste which is allowed to be disposed in sanitary landfills and standards of the quantity of toxic chemicals or hazardous substances allowed in soils as stipulated in this prakas.	Yes
Inter-ministerial Prakas 73 on sanitation budget for solid and liquid waste management (2015)	The Inter-ministerial Prakas stipulates the use of budget package for environment sanitation service for solid waste and Waste-water management at the municipality urban at sub-national level.	Yes
Announcement No 09 Reduction of plastic bags consumption and packaging material that is indecomposable (2012)	The announcement aims to reduce plastic consumption and help communities producing straws using non-plastic materials to have better living conditions. Factories can stop producing single-use plastic products, and people will also turn to use products made out of natural plants. Doing so, it would help the economic conditions of families in communities that produce straws and bags made out of paper and trees.	Yes
Guidelines on Environmental Management	Environmental management guidelines on solid waste is to ensure the protection of the public health, environment and the conservation of bio-diversity by avoiding polluting by solid waste, with the main goals of: <ul style="list-style-type: none"> • Encourage to carry out the principle for the avoidance/reduction of waste amount, reuse, recycling and the disposal of waste in a proper technical manner and safe way • Encourage all citizens and members of the public from different levels to understand and to be familiar with the importance of environmental and natural resources protection for present, future generations and environmentally sustainable development; and • Encourage proper waste management plan to a sustainable development of the Country, protecting its natural asset and concurrently creating jobs. 	Yes
Guideline on Plastic Waste Management (2017)	Cambodia issued the guidelines on Plastic Waste Management to effectively manage solid waste and plastic. In 2017, the government promulgated a sub-degree on management of plastic bags that prohibits the importation, local production, and use of plastic bags thicker than 0.03 millimeters and wider than 25 centimeters. Besides national initiatives, Cambodia also seeks international collaboration and encourages sub-national initiatives, private sector and civil societies to tackle the challenge.	Yes

Policy	Summary	Applicable to SWM
<i>Environmental Management and Protection</i>		
Law on Nature Protection Area (2008)	<p>In 2008 the Law on Natural Protected Areas introduced an additional three (3) categories to natural protected areas, bringing the total number of categories to eight. While the character and protection purposes of each category are defined in the law, four (4) styles of zones management may also be applied when deemed necessary.</p> <p>The eight (8) categories of natural protected areas (with their purpose) are as follows:</p> <ol style="list-style-type: none"> (1) <u>National park</u> (2) <u>Wildlife sanctuary</u> – wildlife preservation and protection (3) <u>Protected landscape</u> – protected scenic view areas to be maintained as scenic spots for leisure and tourism (4) <u>Multi-purpose-use management area</u> – accessible areas for economic development and leisure activities with the assurance of natural stability of water, forestry, wildlife and fishery resources (5) <u>Biosphere reserve</u> – an area of biodiversity conservation and support of sustainable development and activities. This reserve, Tonle Sap, is close to Battambang and Kampong Thom provinces. Its inclusion as a special entity in the law demonstrates its importance for Cambodia (6) <u>Natural heritage site</u> – natural or semi-natural sites unique in ecosystem, beauty or cultural value (7) <u>Marine park</u> – coastal areas with plants, wildlife and fish, with historical or cultural value (8) <u>Ramsar site</u> – areas recognized for the importance of their wetlands and surrounding environment, including wildlife, habitats and ecosystems. It is estimated that 30 percent of Cambodia's surface may be considered as wetland, and other areas may be brought under the Ramsar convention in future. 	Yes
Law on Water Resources Management (2007)	Requires license/permit/written authorization for the: (i) abstraction & use of water resources other than for domestic purposes, watering for animal husbandry, fishing & irrigation of domestic gardens and orchards; (ii) extraction of sand, soil & gravel from the beds & banks of water courses, lakes, canals & reservoirs; (iii) filling of river, tributary, stream, natural lakes, canal & reservoir; and (iv) discharge, disposal or deposit of polluting substances that are likely to deteriorate water quality and to endanger human, animal and plant health. (Art. 12 & 22) Its Article 24 stipulates that Ministry of Water Resources and Meteorology (MoWRAM), in collaboration with other concerned agencies, may designate a floodplain area as flood retention area.	Yes
Law on Forest enacted by National Assembly (2002)	<p>The law defines the framework for management, harvesting, use, development and conservation of the forests. Its policy objective is to ensure the sustainable management of forests for their social, economic and environmental benefits, including conservation of biological diversity and cultural heritage. Under this law the state ensures customary user rights of forest products and by-products for local communities. The Forestry Law states the roles and responsibilities for the management of all forests. It states that the management of forests is under the jurisdiction of the MAFF (except for management of flooded forests which is covered by a different law). Furthermore, it delegates the authority to manage Protected Areas to the MOE.</p> <p>Article 4 under the Forestry Law states that prior to major forest ecosystem related activity that may significantly impact on the environment and social conditions, and environmental and social impact assessment should be conducted.</p>	Yes

Policy	Summary	Applicable to SWM
Sub-decree 42 Air Pollution Monitoring and Noise Disturbance (2000)	<p>The sub-decree aims to protect the quality of the environment quality and public health from air pollutants and noise disturbance through monitoring, curbing and mitigating activities. The sub-decree regulates air and noise pollution from mobile and fixed sources through monitoring, curb and mitigation activities to protect the environmental quality and public health. It contains the following relevant standards:</p> <ul style="list-style-type: none"> i. Ambient air quality standard; ii. Maximum allowable noise level in public and residential areas. <p>Article 3A. "Source of pollution" is defined and separates mobile sources (including transport) and fixed sources such as factories and construction site.</p> <p>Article 3B. "Pollutant" is defined as smoke, dust, ash particle substance, gas, vapor, fog, odor, radio-active substance.</p>	Yes
Sub-decree on Water Pollution Control (1999)	<p>The sub-decree appoints the responsibility of establishing the water environment management and protection guidelines, particularly on water quality and wastewater disposal. The sub-decree regulates activities that cause pollution in public water areas in order to sustain good water quality so that the protection of human health and the conservation of biodiversity are ensured. Its Annexes 2, 4 and 5 provide the industrial effluent standards, including effluent from wastewater stabilization ponds, water quality standards for public waters for the purpose of biodiversity conservation, and water quality standards for public waters and health, respectively.</p>	Yes
<i>Environmental Impact Assessment</i>		
Sub-decree 72 on Environmental Impact Assessment Process (1999)	<p>The sub-decree institutionalizes the conduct of environmental impact assessment for "every private and public project and activity." It specifies the type of projects/activities that require IEIA/EIA and provides for the steps that must be undertaken by the project owner. It also upholds the importance of public participation in the process. Based on the list of projects that require IEIA/EIA, applicable ones for this project are waste processing, burning activities (all sizes) and wastewater treatment plants (all sizes) under Other Industries; drainage systems (>5,000 hectares) and buildings (height ≥ 12 meters or floor ≥ 8,000 sq.m.) and dumping site under Infrastructure.</p>	Yes
Prakas No. 021 on Classification of Environmental Impact Assessment for Development Project (2020)	<p>Provides guidance on identifying which investment projects will require an IEIA or FEIA. It also identifies projects that are required to secure an environmental protection contract (EPC).</p> <p>Prakas No. 021 applies to existing projects and ongoing projects of an individual, private company, public-private joint venture company, state company, and governmental institution (e.g., independent body directly under the RGC's supervision; with exception of project with special status and is a necessary project, which shall be decided by the RGC).</p>	Yes
Joint Prakas between MOE and Ministry of Economy and Finance on the Establishment of Service Fee for Reviewing Report of EIA and Monitoring the Project implementation (2000)	<p>The objectives of this law are to protect and upgrade the environment quality and public health by means of prevention, reduction and control of pollution, to make assessment impacts to environment, before issuance of decision by the RGC on all submitted proposed projects, to ensure and manage the use of natural resource of the Kingdom of Cambodia. This law encourages and provides possibility to public to participate in the protection of environment.</p>	Yes
Prakas on Delegation of Power to Municipal/Provincial Department of Environment to Decide on Project Development (2005)	<p>Municipal-Provincial Departments of Environment to be tasked to review, and comment on any investment involving the IEIA/FEIA report of private individuals or private companies, joint-venture companies, public companies or ministries/government agencies</p>	Yes
Prakas 376 on General Guideline for Preparing Initial	<p>The Prakas aims to provide general guidelines on the development of IEIA and FEIA. The declaration specifies the basic contents of IEIA/EIA Reports,</p>	Yes

Policy	Summary	Applicable to SWM
Environmental Impact Assessment and Full Environmental Impact Assessment Report (2009)	which should include: (i) introduction; (ii) legal framework; (iii) project description; (iv) description of the existing environment; (v) public participation; (vi) assessment of, and mitigation measures for, significant environmental impacts; (vii) environmental management plan; (viii) cost-benefit analysis; and (ix) conclusion and recommendations.	
Guidebook on Environmental Impact Assessment in the Kingdom of Cambodia (2012)	It was anchored primarily on the Sub-decree 72 on Environmental Impact Assessment Process (1999), Prakas 376 on General Guideline for Preparing Initial Environmental Impact Assessment and Full Environmental Impact Assessment Report (2009), and United Nations Environment Programme (UNEP) documents. It lays out the institutional arrangements of the process, along with the principles and process of initial and full EIAs from proposal, screening, scoping, assessment, mitigation measures, report preparation, review and decision, monitoring, and public participation	Yes
Prakas 21 on the Classification of Environmental Impact Assessment for Development Projects (2020)	The Prakas provides an amended listing of the environment and social impact classification of projects to identify whether the documents required from them by the Ministry of Environment as part of the procedures of the Environmental Impact Assessment for Development Projects in Cambodia: <ul style="list-style-type: none"> • Minor or small impact: Environmental Protection Contracts and Environment Management Plan • Moderate impact: Initial Environmental and Social Impact Assessment • Serious or serious impact: Full Environmental and Social Impact Assessment 	Yes
National Environment Strategy and Action Plan 2016–2023 (NESAP)	Developed in line with Article 59 of the Constitution of the Kingdom of Cambodia, the Law on Environmental Protection and Natural Resource Management, and in accordance with the Royal Government of Cambodia's key development policies and strategic plans. It focuses on the furtherance of efforts to strengthen collaborations led by the National Council for Sustainable Development (NCSA) in promoting cross-sectoral coordination, with emphasis on cross-cutting themes, such as gender and capacity development, application of relevant policy and economic tools, and in mainstreaming the environmental and natural resources sustainability into the Cambodia's development framework.	Yes
Cambodia Climate Change Strategic Plan 2014–2023	Provides a national perspective and framework for addressing climate change. It identifies entry-points for a structured and coherent approach to integrate climate change into national development processes. It specifically recommends the integration of climate change into Environmental Impact Assessment processes as one of the strategies to promote climate resilience.	Yes
Law on Disaster Management (2015)	Aims to regulate disaster management in the Kingdom of Cambodia, both natural and caused by humans. Among the mainstreaming themes that it recommends to be pursued include the mainstreaming of disaster risk reduction in the conduct of EIA for new development projects.	Yes
Environmental Guidelines on Solid Waste Management in Kingdom of Cambodia (2006)	Seeks to ensure the protection of environment, public health, and conservation of biodiversity through the effective management of solid waste.	Yes

3.2 DOMESTIC SOCIAL LAWS, REGULATIONS, AND POLICIES

3.2.1 EIA process

Sub-decree 72 on Environmental Impact Assessment Process (1999) and Prakas 21 on the Classification of Environmental Impact Assessment for Development Projects (2020)

The sub-decree prescribes the conduct of assessment to determine the risks and impacts of proposed projects, both public and private, particularly in the natural resources, ecosystem, health and public welfare. A Ministerial Prakas on the Classification of Environmental Impact Assessment for Development Projects was released in February 2020 that provides further guidance on the classification of projects based on risks and impacts. While the sub-decree specifies that risks and impacts to public welfare and health are included, the assessment on social components are not explicitly stated.

Prakas 376 on General Guideline for Preparing Initial Environmental Impact Assessment and Full Environmental Impact Assessment Report (2009)

The Prakas aims to provide general guidelines on the development of Initial Environmental Impact Assessments (IEIA) and Full Environmental Impact Assessment (FEIA). In the Prakas, among the definitions provided for the IEIA and FEIA covers the identification, prediction and analysis of potential adverse environmental and social impacts. The declaration specifies the basic contents of IEIA/FEIA Reports, as specified in **Table 3.2-1**. The checklist template for scoping impacts and mitigating measures also includes the analysis of socioeconomic aspects. While the Sub-decree 72 does not explicitly specify the assessment of social components, the guidelines in this Prakas includes such aspects.

Table 3.2-1: Proposed Outline of IEIA/FEIA Reports

Chapter	Contents
Chapter 1: Introduction	<ul style="list-style-type: none"> • Project overview and rationale • Objectives • Methodology and Scope of study
Chapter 2: Legal frameworks	Description of laws, sub-decrees and various policies related to project type
Chapter 3: Project description	<ul style="list-style-type: none"> • Background and experiences of the project owners/company; • Project site (attached with local administration map and project location); • Project type/scope and schedule of project activities (project pre-operation, operation and closure) • Work plan
Chapter 4: Description of Existing Environment	Description of the natural environment and socio-economic aspects based on primary and secondary data on the following: <ul style="list-style-type: none"> • Natural Environment <ul style="list-style-type: none"> ○ Physical Resources ○ Biological Resources • Socioeconomic aspects
Chapter 5: Public Participation	Details public consultation and participation activities and conclusions
Chapter 6: Environmental Impacts and Mitigation Measures	Describes both positive and negative environmental and socio-economic impacts arising from their activities for project phases, including positive and negative impacts, and cumulative impacts.
Chapter 7: Environmental Management Plan (EMP)	Summary of the following: <ul style="list-style-type: none"> • Main negative environmental impacts and mitigation measures, • Trainings to be provided • Environmental monitoring program for the construction, operation and closure periods, including agencies responsible, monitoring parameters, methodology, environmental standards, and reporting periods.
Chapter 8: Economic Analysis and Environmental Value	Description of the benefits of the project in relation to scope and value of environmental damage arising from the project activities
Chapter 9: Conclusions and Recommendations	Conclusion of the assessment

Source: Prakas 376 Appendix

Guidebook on Environmental Impact Assessment in the Kingdom of Cambodia (2012)

It was anchored primarily on the Sub-decree 72 on Environmental Impact Assessment Process (1999), Prakas 376 on General Guideline for Preparing Initial Environmental Impact Assessment and Full Environmental Impact Assessment Report (2009), and UNEP documents. It lays out the institutional arrangements of the process, along with the principles and process of IEIAs and FEIAs from proposal, screening, scoping, assessment, mitigation measures, report preparation, review and decision, monitoring, and public participation (RGC and MOE, 2012):

- **Project Proposal**: The proposed investment project is to be discussed with the MOE. Projects worth less than USD \$2 million, can be proposed to the Department of Environment at the Provincial or Municipal Levels.
- **Project Screening**: The screening process on whether to require an IEIA or FEIA varies depending on the nature and scale of the proposed projects. The parameters of the process are defined in Sub-decree 72 on Environmental Impact Assessment Process (1999). For proposed projects outside of the list provided of the sub-decree,
 - *Full EIA Report*: Projects with *serious* environmental impact to natural resources, ecosystem, health and public welfare;
 - *Initial EIA Report*: Projects with *medium* environmental impact to natural resources, ecosystem, health and public welfare; and
 - *No EIA Required*: Projects determined by government as special and urgently needed, projects required to develop an environmental management plan; projects with *minor* environmental impact (but an environmental protection contract will be required), projects deemed necessary to react to a declared state of emergency and approved by the Royal Government.
- **Project Scoping**: Activities under this stage (i.e., determining parameters, defining scope, agreement on methods, etc.) are to be conducted with the following stakeholders: EIA Department of MOE, Project Owner, EIA consultant and experts, responsible agencies, project-affected communities, and community / public beneficiaries.
- **Impact Assessment**: The assessment should analyze the following: (a) type of impact, (b) prediction of possible scale and scope of impact (i.e., direct, indirect, cumulative, residual), and (c) impact notions.
- **Mitigating Measures**: In identifying the measures to avoid or reduce environments that may be brought about by the project (from design and development stages, to operations). Insights from public consultation and experiences from previous projects of similar nature must be considered.
- **Report Writing, Report Review, and Decision**: The guidelines in the development of the IEIA/FEIA is detailed in the MOE Prakas 376 on the General Guidelines for Developing Initial and Full Environmental Impact Assessment Reports, including process for EIA clearance and the entities involved, proposed outline, and a checklist for scoping of adverse environmental impacts and mitigating measures.
- **Monitoring on Environmental Management Plan**: Project monitoring should also assess the impacts initially identified and verify the predictions and implementation of mitigating measures identified, Proponents are to submit every three (3) or six (6) months to be submitted to MOE.

Law on Disaster Management (2015)

The Law on Disaster Management (2015) calls for the mainstreaming of disaster risk reduction management (DRRM) in the EIA process. Art. 16 of said law also tasks the National Committee for Disaster Management (NCDM) to “issue a guideline to the sub-national committees for disaster management, ministries-institutions, armed forces, public sector, private sector and civil society to conduct risk assessments and explore the measures, methodologies, and necessary technology for disaster risk reduction and climate change adaptation.”

3.2.2 Labor and Working Conditions

Labor Law (1997)

This law governs relations between employers and workers resulting from employment contracts to be performed within Cambodia. The key sections relevant to this project are provided below, while a more detailed discussion of labor laws is included in **Appendix B: Labor Management Procedures**.

- **Minimum Wage:** A guaranteed minimum wage that ensures a decent standard of living is protected by the Code. The minimum wage is set by the Ministry of Labor in consultation with the National Council on Minimum Wage and Labor Advisory Committee through a Prakas. Minimum wage is determined considering the needs and cost of living of the workers and their families, and economic factors (Chap. VI, Section 1).
- **Child Labor:** The minimum allowable age for wage employment is set at 15 to 18 years for hazardous work. Children between 12 to 15 years old can be hired to do *light work*¹¹ as long as the nature of work fulfils the following: (1) work is not hazardous to their health or mental and physical development., (2) work will not affect their regular school attendance, their participation in guidance programs or vocational training approved by a competent authority. For child laborers from 15 to 17 years old cannot perform night work, Employers found to be employing children less than eighteen years of age under conditions contrary to the provisions of the Code are liable to a fine of thirty-one to sixty days of the base daily wage (Chap. VI, Section 8).
- **Health and Safety of Worker:** The key provisions relate to the quality of the premises; cleaning and hygiene; lodging of personnel, if applicable (such as workers camp); ventilation and sanitation; individual protective instruments and work clothes; lighting and noise levels in the workplace. Article 230 of the Labor Law states that workplaces must guarantee the safety of workers. However, the only specific occupational health and safety Prakas relates to the garment industry and brick manufacturing (Chap. VIII).
- **Work-Related Accidents:** All occupational illness, as defined by law, shall be considered a work-related accident. The law sets out how accidents should be managed in terms of compensation (Chap. IX).

Prakas No. 002 on Category of Occupation and Light Work Permitted for Children (2008)

¹¹ Light work is not defined under the 1997 Labor Law. A Prakas was released by MoLVT was released in 2008 defining the parameters of the term.

Light work for child laborers aged 12 to 15 years old, pertaining to those that does not affect the health as well as mental and physical development of the employed children and does not affect their regular school attendance, involvement in orientation programs, or vocational trainings required by the competent authorities, includes the following:

- Light work in the agriculture sector such as raising animals, caring for small livestock animals – but not catching and slaughtering those animals – growing plants, harvesting, picking up fruit – but not climbing to pick up – as well as cleaning;
- Clearing grass and preparing soil;
- Recording goods;
- Working at some shopping malls such as selling booth, vegetables and fruit selling stall, or news stand and stall of other similar goods;
- **Receiving, packing, selecting and classifying goods as well as assembling light things, including opening or taking goods out of the package;**
- Sweeping, mopping, and preparing dining table such as preparing plates, spoons, forks, knives etc.;
- Manual installation work, which is an easy work, but not welding metal or iron, or working with any product causing hazardous risk;
- Painting wall or things with proper protective equipment but not spraying paint;
- Easy work such as sewing, putting goods into plastic bag, folding carton, or polishing and cleaning glass or ceramics, trimming garment, or assembling all parts of garment or cleaning something dirty on the garment or attaching brand, or attaching price tag;
- Preparing or selecting each type of garments for washing;
- Checking products;
- Working as messenger within the organization;
- Receiving letters or sending out packages, as well as distributing information and documents;
- Filing books in the library; and
- Lifting, carrying and holding light things.

Those who employ children from 12 to 15 years old for light work shall allow their parents or guardian to understand the terms and conditions of employment, including the children's working time, school attending time, vulnerability to work-related accidents and diseases, adopted measures on hygiene and work safety.

Work hours for these children shall not exceed four (4) hours for school days, and seven (7) hours for school-free days. They are also prohibited from working between 8:00 pm to 6:00 am. They are entitled to two (2) consecutive days off per week.

Prakas No. 106 on the Prohibition of Hazardous Child Labor (2004)

The Ministry of Labour, Vocational Training and Youth Rehabilitation (MoSALVY) released a prakas in 2004 prohibiting the employment of children below 18 years old on jobs involving hazardous works involving construction and demolition (with exception to designated safe

areas with permit from labor inspector), exposure to hazardous chemicals and substances, exposure to fumes, dust gas and other ambient substances, heavy machinery and equipment

Employers considering to employ children of 16 years of age to do hazardous work are required to secure a permit from the ministry and must adhere to the following:

- No work between 10:00pm to 5:00am
- Children undergo training
- Consultation with Labor Advisory Committee
- Annual health checkups with Department of Labor Health to certify that they are in the proper health condition to engage in hazardous work

As noted by the International Labor Organization (ILO), the existing Labor Code only covers the formal sector and does not apply to the informal sector where child labor mostly occurs (ILO, 2014).

International Labor Standards

Cambodia has ratified all fundamental conventions, along with other governance and technical conventions, identified by the ILO:

- Forced Labour Convention in 1969
- Freedom of Association and Protection of the Right to Organize Convention in 1999
- Right to Organize and Collective Bargaining Convention in 1999
- Equal Remuneration Convention in 1999
- Abolition of Forced Labour Convention in 1999
- Discrimination (Employment and Occupation) Convention in 1999
- Minimum Age Convention in 1999
- Worst Forms of Child Labour Convention in 2006
- Employment Policy Convention in 1971
- Night Work of Young Persons (Industry) Convention in 1969
- Labour Administration Convention in 1999

3.2.3 Occupational Health and Safety (OHS)

The Ministry of Labour and Vocational Training (MoLVT), through its Department of Occupational Safety and Health, is the primary agency that enforces policies and regulations pertaining Occupational Health and Safety (MoLVT, n.d.). This section outlines the existing laws in Cambodia related to Occupational Health and Safety.

Labor Law (1997)

Apart from provisions related to working standards, the 1997 Labor Law also specifies the responsibility of the employer to ensure the safety of workers in the workplace, including the provision of personal protective equipment (particularly for those involved in hazardous work), installation and maintenance of all machinery, mechanisms, transmission apparatus, tools, equipment and machines in best possible safety conditions, maintaining and monitoring labor management procedures.

The Labor Law indicates that any accident is considered as work-related as long as the it occurs within working hours of the employee, regardless of cause (Chap. IX, Article 248), and

among the occupational risk benefits include medical care services, daily allowance, disability allowance, funeral benefits and pension allowance for the designated beneficiary (Sopheana & Theany, n.d).

Joint Prakas No. 330 on the Establishment of Enterprise's Infirmary (2000)

The Labor Law provides that enterprises with at least 50 workers are obligated to establish a permanent infirmary on-site operating during working hours with a physician and nurses onboard. The Joint Prakas was released by MoSALVY and MOH, which establishes the guidelines and minimum standards on establishing infirmaries in enterprises to provide procedures for primary health care and first aid for workers and ensure the health and safety responsibility of employers as provided by the 1997 Labor Law.

Table 3.2-2: Number of Qualified Clinical Staff and Average Infirmary Working Hours

Number of Employees in the Enterprise	Number of Doctors	Number of Nurses	Average Attendance of Working Clinical Staff in working hours (in hours)
50 – 300	1 doctor or intern	1	2
301 – 600	1 doctor	1	2
601 – 900	1 doctor	2	3
901 – 1400	1 doctor	2	4
1401 – 2000	1 doctor	2	6
Over 2000	1 doctor	3	8

Source: Article 3, Joint Prakas No. 330 (2000)

In 2017, the Guidelines for the Establishment of Enterprise Infirmaries was published to facilitate the compliance to the Joint Prakas (MoLVT, 2017).

Prakas No. 176 on Education on Hygiene and Occupational Safety for Workers, Shop Stewards and Unions (2013)

The MoLVT Prakas 176 (2013) emphasizes the obligation of employers to train workers in hygiene and occupational safety and to implement a general training program that include the following topics:

- Physical risk,
- Chemical risk,
- Biological risk,
- Risk related to the use of machinery,
- Risk of heavy lifting by machinery,
- Risk related to the driving of machinery in the enterprise/establishment,
- Risk related to electricity,
- Fire or explosion risk,
- Risk of falling from high place,
- Risk of heavy lifting by human force,
- Risk of isolated work,
- Risk of work in area with limited ventilation,
- Risk of night work,
- Hygiene of food and nutrition,

- Risk of work attitude,
- Safety of building and entry and exit,
- Mental tension from work (stress resulting from work), and
- And other risks that are necessary (Art. 5).

Sub-Decree No. 01 SD.E on Establishment of the Social Security Schemes on Health for Persons Defined by the Provisions of the Labor Law (2016)

The sub-decree implements a social security scheme on Occupational Risk and Health Care under the National Social Security Fund that establishes social security nets for work-related accidents, as well as for personal health and non-work-related injuries through the payment of contributions to the National Social Security Fund (NSSF, n.d.).

3.2.4 Land Acquisition and House Demolition

Constitution of Cambodia (1993)

The 1993 Constitution of Cambodia establishes the basic governing principles in land acquisition and ownership:

- Right to land ownership: “All persons, individually or collectively, shall have the right to ownership. Only Khmer legal entities and citizens of Khmer nationality shall the right to own land. Legal private ownership shall be protected by the law.” (Art. 44)
- Eminent Domain: “Right to confiscate properties from any person shall be exercised only in the public interest as provided by law and shall require fair and just compensation in advance” (Art. 44)

Land Law (2001)

The rights to land and property in Cambodia are governed by the 2001 Land Law, as grounded on the constitution of Cambodia. The law defines the scope of ownership of immovable properties, such as land, trees and fixed structures. It also covers the following

- Eminent Domain (Art. 5),
- Definition of Public Properties (Art. 15),
- Legal Possession of Land (Art. 6-7),
- Types of Private Land Ownership (Art. 106-113, 139-140),
- Types of invalid land possession (Art. 18-19),
- Extraordinary acquisitive possession (Art. 29-34, 38),
- Disqualification from compensation from eminent domain acquisition (Art. 8, 18-19, 108),
- Ownership of Indigenous Minorities (Art. 25-26), and
- Social Land Concessions (Art. 50, 51).

Prakas No. 6 on Measures to Crack Down on Land Grabbing and Encroachment (2007)

The Prakas defines the right-of-way (ROW) dimensions roads and railways, which amends Sub-decree No. 197 ROW dimensions. The latter policy provides that compensation for structures and assets located in ROWs will not be subject to any compensation. Since there

can be financing of access roads to the landfills and transfer/treatment centers, the Prakas is applicable.

Expropriation Law (2010)

The law defines the principles, mechanisms, and procedures of expropriation, and defining fair and just compensation for any construction, rehabilitation, and public physical infrastructure expansion project for the public and national interests and development of Cambodia.

2018 Land Acquisition and Involuntary Resettlement

In 2018, the Standard Operating Procedures (SOP) for Land Acquisition and Involuntary Resettlement (LAR) was promulgated, which reflects RGC's laws and regulations relating to the acquisition of land and the involuntary resettlement of AP and the safeguard and standards/policies and procedures of Development Partners (DPs) as applied to public infrastructure investment projects.

The document provides that in the context of involuntary resettlement, indigenous peoples and communities are classified among the vulnerable groups who are likely to be more adversely affected by the impacts of involuntary resettlement. This is because IPs often have traditional land rights but do not have formal titles. Thus, particular attention and assistance is required for these communities. Among its resettlement planning considerations include the primacy of avoiding customary lands, and should be included in siting considerations. The document also sets out some information and parameters to be included in an Indigenous Peoples Plan. The SOP notes that the IPP is a separate document from the Resettlement Plans, but its compensation packages should be reflected in the detailed resettlement plan. (Paragraph 48, 54, 56-57, 95-97).

The SOP also provides that displaced persons who lose their source of livelihood permanently, are normally provided with a livelihood restoration/support program to assist displaced persons in reestablishing their livelihood. The program includes two components: (i) skills training; and (ii) financial support as a cash grant to assist in re-establishment of the livelihood. The Livelihood Restoration/Support Program will offer three categories of program namely (i) Land-Based Livelihood Restoration; (ii) Employment-Based Livelihood Restoration; and (iii) Enterprise or Business-Based Livelihood Restoration. Displaced persons will be entitled to participate in any one of the three programs. Where appropriate, the SOP includes references to international good practices in resettlement planning, implementation, monitoring and reporting. The SOP has been promulgated under Sub Decree No. 22 ANK/BK on 22 February 2018 and applies to all externally financed projects in the Kingdom of Cambodia. The General Department of Resettlement (GDR) of the MEF is responsible for providing guidance and clarification to users of the SOP.

3.2.5 Vulnerable Groups

This section details the existing laws and policies for the protection of vulnerable groups, namely, women, elderly, disabled, elderly, poor, indigenous peoples/ethnic minorities, .

Law on the Prevention of Domestic Violence and the Protection of Victims (2005)

This law establishes the legal mechanisms in preventing domestic violence and protecting victims and assigns “legal qualification as the judiciary police and can act as the complaining party instead of the victims” to the Ministry of Women's Affairs (MoWA). The scope of the law includes domestic violence and acts affecting life, physical integrity, torture, and sexual aggression, towards husband or wife, dependents, and any persons living under a single roof and who are dependent of the households. The law sets out the intervening measures by commune authorities, municipal administrators, and courts for cases of domestic violence (Art. 1-3, 10,14).

Law on the Protection and the Promotion of the Rights of People with Disabilities (2009)

The law defines persons with disabilities as “any persons who lack, lose, or damage any physical or mental functions, which result in a disturbance to their daily life or activities, such as physical, visual, hearing, intellectual impairments, mental disorders and any other types of disabilities toward the insurmountable end of the scale” (Royal Government of Cambodia, 2009). The law also established the Disability Action Council (DAC) as the national coordination and advisory mechanism on disability issues (Art. 5) and the Disability Rights Administration under the Department of Rehabilitation of MoSALVY. It sets out the basic rights of people with disabilities in livelihoods, physical and mental rehabilitation, healthcare, public accessibilities, education, and employment and vocational training, thus ensuring equal employment opportunities and reduction in discrimination.

National Aging Policy 2017–2030

This serves as an umbrella policy and overarching roadmap to address the multi-dimensional, emerging, and evolving issue of aging in Cambodia. Its three fundamental concepts are to eliminate age-based discrimination, to ensure gender equality with the emerging feminization of aging, and to promote intergenerational relations so as to maintain the strength of the joint family system, a hallmark of Khmer culture (RGC, 2017). The policy also defines the cut-off age of the older population as those aged 60 years old and above.

Law on Suppression of Human Trafficking and Sexual Exploitation (2008)

All forms of human trafficking and sexual exploitation, including forced labor or services, slavery or practices similar to slavery, debt bondage, involuntary servitude, and child labor, for profit-making is declared unlawful under this law. In the explanatory note on the law by the Ministry of Justice, forced labor is defined as all work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily (IJM, 2016).

National Policy for the Development of Indigenous Peoples (2009)

The policy serves as an umbrella framework for government policies related to indigenous peoples and communities, particularly in culture, education, health, environment, land, agriculture, water resources, infrastructure, justice, tourism, industry and mines and energy. The defines the parameters of the registration of indigenous communities as legal entities to enable them to formally own their communal land and assets, and allow them to participate in economic development. The policy details strategy across these sectors, including the use of local languages in public consultation, primary education, and the media, and the conduct of impact assessments for all infrastructure projects.

Policy on Procedures of Registration of Land of Indigenous Communities (2009)

This policy emphasizes the rights of indigenous groups to collective ownership of land through institutionalizing the parameters of the registration of lands under collective ownership of indigenous communities as specified in the 2001 Land Law. The sub-decree highlights the distinction of the registration of indigenous communities as collective ownership as different from the registration of individual privately owned land parcels given that the former belongs to a community as a whole, and will require a separate sub-decree to detail the specific land titling procedure given the parameters of their land ownership.

Organic Law (2008)

The Organic Law recognizes indigenous peoples' vulnerability. Councils at the provincial and district levels (capital, municipal and khan levels in urban areas) are requested to formulate development plans that identify the needs of vulnerable groups including indigenous peoples.

3.2.6 Stakeholder Engagement and Public Consultation

Guidebook on Environmental Impact Assessment in the Kingdom of Cambodia (2012)

The guidebook defines public participation as "participation by stakeholders in the consultation regarding a development project. Stakeholders include: relevant ministries/institutions, local authorities, relevant government departments, company owner, consulting firm, representatives of impacted population, and representative of involved NGOs in the project area." Stakeholder engagement was highlighted in the stages of project scoping, mitigation measurement, report review, and project monitoring. The guidebook states that the identification of mitigating measures on environmental impacts should also be based on the results of public consultation.

2017 Prakas on Public Participation

The MOE released a ministerial declaration to establish the key principles to ensure public participation in the EIA process: Principle of Access to Information; Principle of Public Participation; Principle of Access to Social Justice and Effective Remedies; and Principle of Gender Equality in Public Participation; and Principle of Promoting Indigenous People in Public Participation (MOE, 2017). Avenues for public participation for each stage of the EIA are as follows:

- **Project Screening**: Project owners are to provide relevant information about the project to project-affected people (PAP), relevant ministries, and other stakeholders. Following this, the project owners are to provide a document indicating the current environmental and social conditions;
- **Project Scoping**: Required the development of a Public Participation Plan by the project proponent to guide those to conduct the EIA preparation;
- **Project Investigation and Report Preparation**: Meetings and consultations with the PAPs and project stakeholders shall be conducted following the MOE Procedure of Public Participation. A separate activity informing the PAPs of the potential impacts of the project should also be conducted. A consultation workshop with PAPs and stakeholders should be organized prior to the submission of the EIA report. The

insights from all stakeholder engagement activities should be incorporated in said report;

- **Report Review:** The EIA Working Group assigned to review and provide feedback on the EIA report will receive inputs from the EIA Department and other relevant ministries on their comments on the report. The EIA Department of the MOE will be consulting with PAPs and other stakeholders in providing such inputs to the EIA Working Group; and
- **Monitoring and Compliance:** Project proponents and the respective contractors, should ensure that public participation and stakeholder engagement is retained throughout the activities from approval of the project down to the operation and closure of the project.

Encouraging the participation of IPs is the key principle in ensuring public participation in the EIA process. This highlights the importance of representation and participation of indigenous peoples in following the steps of projects subject to the I/EIA process: Screening, Scoping, Investigation and Report Participation, Report Review, and Monitoring and Compliance.

3.3 ENVIRONMENTAL SOCIAL FRAMEWORK OF THE WORLD BANK

The environmental and social policy for World Bank financed projects is required to be applied under the Environmental and Social Framework (ESF). This is to ensure that the WB supported projects are environmentally and socially sound and sustainable. Likewise, this will inform the design of the projects and identify mitigation measures and actions to improve decision making.¹² The ESF enables the financing recipient to better assess the environmental and social risks of projects and to improve development outcomes. Consistent with the Bank's environmental and social policy, the Project is expected to meet the requirements set forth in the Environmental and Social Standards (ESS). These standards applicable to this project are listed in **Table 3.3-1** (World Bank, 2017).

Table 3.3-1: World Bank Standards on Environmental and Social Framework

ESS	Summary	Relevant	Commentary
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	The conduct of an assessment of the environmental and social risks and impacts is required for projects (and associated facilities) proposed for World Bank financing. The assessment shall identify, review and evaluate the risks and impacts of the projects vis-à-vis its potential contributions. The results from the assessment will be inform the design of project, including the identification of mitigation measures, through applying a mitigation hierarchy of (1) anticipating and avoiding risks and impacts, (2) minimizing or reducing risks when avoidance is not possible, (3) identifying measures to mitigate impacts from risk minimization or	Relevant	The Project includes technical assistance activities and civil construction activities. The environmental benefits of the project are seen to be significant. By improving the collection and recycling of solid waste and plastic waste, a large volume of plastic wastes will be reduced. However, the implementation of this project will cause significant environmental and social risks and impacts in many aspects. The project will implement an approach that combines support for policy development, regulatory improvements, and monitoring at the national level with support for selected provinces and municipalities. This will aid the implementation of solid waste management policy and legislation as well as capacity development at both the national and the local

¹² Based on the GNB, ESF for IPF Operations, p. 1

ESS	Summary	Relevant	Commentary
	reduction, such as livelihood restoration, and (4) compensating and offsetting in the event that significant residual impacts remain.		<p>levels. It will improve the various levels of solid waste and plastic management in Cambodia, from waste collection, transport, and recovery, treatment, recycling, and disposal, along with improvements in operational cost recovery by improving waste fee collection. It will also improve the monitoring and enforcement of private waste management companies, information availability and reliability, and citizen engagement and public information. The implementation of policies on plastic and improved plastics management will contribute towards the reduction of the amount of waste that needs to be collected or landfilled. It will increase recovery and recycling and contribute to reduced plastic leakage to the waterways and ocean.</p> <p>The subprojects on solid and plastic waste infrastructure in selected cities include construction of landfills to improve performance of the waste disposal. The potential negative environmental impacts identified include dust, noise, wastewater, soil erosion, traffic interference, ordinary garbage, etc., as well as potential land acquisition and livelihood impacts, community health & safety, occupational health & safety, and the impact of pier construction on aquatic organisms. The main E&S impacts of the project come from the facilities' operation. Such as: Odor, sewage of working waste transfer stations; Temporary storage and transportation of household hazardous substance; Fire and explosion risk of biogas tank in kitchen waste treatment plant; Hazardous substance production, storage and transportation of the recyclable waste processing centers; Pollutant leakage and remediation of contaminated land and groundwater bodies caused by closure operation of the old landfills. These will have a serious impact on the environment, community health & safety and occupational health & safety. These can also have impacts due to land acquisition/resettlement and economic displacement.</p> <p>Some associated facilities may be involved in this project, for instance, waste treatment facilities, including incineration, composting and landfill facilities. These associated facilities may form serious risks and great impacts on environment, community health & safety and occupational health & safety. Environmental and social audits (ESA) of these associated facilities are required in accordance with the standards in the World Bank's ESF. The ESA needs to identify and assess, to the extent appropriate, the potential environmental and social risks and impacts of associated facilities. The Borrower will address the risks and impacts of associated</p>

ESS	Summary	Relevant	Commentary
			<p>facilities in a manner proportionate to its control or influence over the associated facilities. To the extent that the Borrower cannot control or influence the associated facilities to meet the requirements of the ESSs, the environmental and social assessment will also identify the risks and impacts the associated facilities may present to the project.</p> <p>In view of the fact that the project includes a large number of technical assistance and infrastructure construction subprojects, the specific details of which have not yet been determined, therefore the Environmental and Social Management Framework (ESMF) is prepared to formulate the principles, procedures and measures for the environmental and social impact assessment of specific subproject during the implementation period. The Environmental and Social Commitment Plan (ESCP) is developed to ensure that the project will be compliant with ESF, as well as ESMF measures and actions during the project implementation. The Stakeholder Engagement Plan (SEP) is also prepared which will require the borrower to continuously carry out stakeholder participation and information disclosure activities at the early stage as well as the whole life cycle of the project.</p>
ESS2: Labor and Working Conditions	<p>The development of labor management procedures for all types of workers to be employed or engaged by the project will be required to ensure that labor standards are upheld, such as minimum benefits, termination agreements, principle of nondiscrimination and equal opportunity, minimum age of workers, occupational health and safety, grievance mechanism, and other labor management regulations set out by national law.</p>	Relevant	<p>During the implementation period, the project will involve direct workers, contracted workers, primary supplier workers and potentially community workers. Therefore, the requirements on working conditions, workers' rights, appeal mechanism, occupational health and safety in this standard will be applicable to the project.</p> <p>There are occupational health and safety risks and impacts that mainly come from the construction and operation stages of the project. These include: traffic safety, mechanical injury and falling during construction period; high temperature and accidental drowning during pier operation; disease and falling during transfer station operation; mechanical and high temperature injuries, as well as hazardous and chemical materials production, storage and transportation during operation of recyclable waste processing centers; fire and explosion risk of biogas storage tank in kitchen waste factory; leakage of pollutants caused by the rehabilitation/restoration of old landfills, as well as the risks and impacts on the operators' health and safety. There is also the risk of COVID-19 infection and transmission within communities.</p> <p>The ESMF includes labor management procedures to guide the development of corresponding management procedures and</p>

ESS	Summary	Relevant	Commentary
			labor grievance mechanism in the preparation of specific subprojects.
ESS3: Resource Efficiency and Pollution Prevention and Management	The policy sets out the requirements related to the sustainable use of resources (i.e., energy, raw materials, water) and the prevention of short and long-term pollution (i.e., air, water, noise) and waste (i.e., hazardous, nonhazardous, and chemical) due to the project.	Relevant	<p>The project will involve the processing of recyclable waste, which will require water consumption and energy consumption. It is recommended to adhere to the principle of cleaner production during the processing sections. As for facility construction subprojects, their construction and operation will produce wastewater, waste gas, solid waste and noise. These will also involve storage and transportation of household hazardous substance, using, producing, storage and transportation of hazardous and chemical materials. The closure of old dumpsites/landfills often involves the remediation of contaminated land and groundwater and other problems left over from the past.</p> <p>As per ESMF, the project shall put forward requirements on pollution management and resource conservation of its technical assistance activities and civil construction activities' environmental and social impact according to the World Bank's ESF, World Bank group's Environmental, Health and Safety Guidelines (EHSGs) and relevant Good International Industry Practice (GIIP). The relevant mitigation and management measures are described in the 'General management regulations' of this framework, and the corresponding documents of Environmental and social assessment report and Environmental and social management plan' of future subprojects.</p>
ESS4: Community Health and Safety	<p>The risks and impacts to health, safety and security of the communities that may be affected by the project must be minimized. The potential risks and impacts across the project cycle must be evaluated. Furthermore, the circumstances of the vulnerable groups must not be further exacerbated due to the impacts of the project.</p> <p>The project must adhere to the national standards related to building standards, traffic and road safety, ecosystem protection, health and safety and emergency preparedness, along with Environmental, Health, and Safety Guidelines and Good International Industry Practice.</p>	Relevant	<p>Implementation of this project may create health & safety impact on the surrounding communities. During the construction process, the increased number of transport vehicles, temporary storage and transportation of household hazardous substance, using, production, storage and transportation of chemical and hazardous materials, fire and explosion possibilities of a biogas storage tank in kitchen waste plant, and the process of closure of the old landfills can all cause risks and impacts on residents' health and safety. The detailed impact analysis will be conducted in the environmental and social impact assessment of those specific subprojects. The detailed management measures will be covered in a corresponding management plan.</p> <p>Additionally, there are potential risks on labor influx, GBV and road safety during construction phase. The sub-project's ESMPs will need to include mitigation measures on these.</p> <p>Stakeholder Engagement Plan (SEP) has been prepared for this project, which will continue to</p>

ESS	Summary	Relevant	Commentary
			conduct consultation and ensure the participation of surrounding communities in the project implementation process.
ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	<p>The risks and impacts related to the permanent or temporary physical and economic displacement of project-affected persons with or without formal, recognizable usage rights due to land acquisition and changes in land use brought about by the project shall be assessed and evaluated. The standard upholds the avoidance of involuntary resettlement, and for instances wherein it cannot be avoided, measures to minimize and mitigate the adverse impacts to the displaced shall be established.</p> <p>Feasible resettlement options shall be offered to the physically displaced wherein the resettlement areas allow living conditions that are at least equivalent or consistent with established standards. Those that are economically displaced shall be compensated according to the assets and other replacement costs that will allow them to restore and reestablish their livelihoods and income-earning capacity.</p>	Relevant	<p>The ESS5 aims to avoid or minimize involuntary resettlement, to avoid forced evictions, and to mitigate the unavoidable and adverse social and economic impacts of land acquisition or land use restrictions in several ways. This also includes impacts on waste-pickers in case of access restriction to recyclables collection (covered under the livelihood restoration framework).</p> <p>This standard is not applicable to the technical assistance subprojects, since these will not involve civil works activities and will have no impact on land acquisition and demolition. The civil works involving subprojects may require new land acquisition, involuntary resettlement and access restriction for the waste-pickers; hence this standard is applicable in this case. Prior to the implementation of the subproject, a Detailed Resettlement Plan (DRP) shall be prepared according to the RPF, which follows the guidelines set by the 2018 SOP on Land Acquisition and Involuntary Resettlement by MEF and ESS5, and will be submitted to the World Bank for approval. For those activities involving the upgrading of existing sites, the site-specific Environmental and Social Impact Assessment and Management Plans shall be conducted to assess the legal compliance status and the possible remaining problems.</p> <p>In case of restriction of access to recyclable to waste-pickers for participating municipalities under the sub-projects, livelihood restoration plans will be prepared following the Livelihood Restoration Framework (LRF).</p>
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	The policy requires the identification and assessment of threats and potential impacts to biodiversity, and natural, critical, modified and habitats that may directly or indirectly be affected by the project. Baseline conditions have to be gathered to assess the extent of the risk and impacts identified. Once significant risks are found, a Biodiversity Management Plan will have to be developed and implemented.	Relevant	The ESMF provides the exclusion clauses of subprojects for facility construction activities. All activities with possible significant impacts on natural habitats and biodiversity will not be included. The impact of project activities on biodiversity will be analyzed in detail in the process of environmental and social impact assessment of specific activities (ESIAs and ESMPs). Corresponding mitigation measures will be formulated.
ESS7: Indigenous Peoples / Sub-Saharan African Historically Underserved Traditional Local Communities	An assessment of the nature and degree of the expected direct and indirect economic, social, cultural and cultural heritage, and environmental impacts of the project to indigenous peoples, including potential encroachment, transformation and degradation of their land and resources. Measures to	Relevant	<p>As for the indigenous peoples corresponding with the 4 identification standards of the ESS7 - whereby cases that these communities exist in or have collective attachment to the proposed project areas - ESS7 will be applicable.</p> <p>The site selection of civil construction subprojects may take place in indigenous peoples areas; hence, this standard may be applicable.</p>

ESS	Summary	Relevant	Commentary
	avoid and mitigate short to long term impacts should be identified and developed in consultation with the affected indigenous peoples. Special action is required where Bank investments affect IP whose social and economic status restricts their capacity to assert their interests and rights in land and other productive resources.		During the implementation period, the Social Assessment as part of the site-specific Environmental and Social Impact Assessment will determine whether it is required that, according to the 4 criteria for the identification of indigenous peoples in ESS7, an IPP should be prepared. In case such IPP is required, this will be prepared according to the IPPF outline in ESMF, meaningful consultations will be organized based on free, prior and informed consent and the document will be submitted to the World Bank for approval. As for the technical assistance subprojects, the relevant requirements of indigenous peoples should be specified in the TOR of the subproject.
ESS8: Cultural Heritage	The risks and impacts to tangible and intangible cultural heritage, including legally protected cultural heritage areas, archaeological sites and material, built heritage, movable cultural heritage, natural features with cultural significance, are required to be identified and assessed. This includes possible changes in the physical environment, such as excavations, demolitions, movement of earth; proximity to protected area and their respective buffer zones; and proximity to recognized cultural heritage site. Avoidance of any adverse impact to cultural heritage should be upheld whenever possible. A Cultural Heritage Management Plan shall be developed upon identification of risks and impacts is not possible.	Relevant	Cultural heritage of cultural significance may be existing in the local communities and cultural heritage protected by law in the project area. The project involves civil engineering activities, which have potential impact risk on local cultural heritage. The ESMF includes clauses of exclusion involving significant cultural impacts. The detailed analysis on specific subprojects will be conducted in the ESIA and ESMP, and relevant measures will be formulated (including Chance Find Procedure).
ESS9: Financial intermediaries	Financial Intermediaries receiving financial support from the World Bank should monitor and management environmental and social risks of their portfolio, subprojects and financial products (i.e., project finance, corporate finance, medium and small enterprise finance, micro finance, housing finance, leasing, and trade finance).	Currently not relevant	This standard is not applicable to this project as it does not include any involvement of financial intermediaries.
ESS10: Stakeholder Engagement and Information Disclosure	Engagement of stakeholders should be implemented across the project cycle. Consultations must be conducted to ensure that timely, relevant, understandable information are provided to project-affected parties and other parties involved. The process should include stakeholder identification and analysis; planning of engagement; disclosure of information; stakeholder consultation; addressing and responding to	Relevant	ESS10 requires the engagement of stakeholders at the early stage of the project and should be implemented across the project cycle. Consultations will be conducted to ensure that timely, relevant, understandable information is provided to project-affected parties and other parties involved. The process should include stakeholder identification and analysis; planning of engagement; disclosure of information; stakeholder consultation; addressing and responding to grievances; and reporting to stakeholders.

ESS	Summary	Relevant	Commentary
	<p>grievances; and reporting to stakeholders.</p> <p>Upon identification of individuals and groups identified, a Stakeholder Engagement Plan must be developed that will stipulate the plans for stakeholder engagement across the implementation timeline. The SEP shall detail how communication with stakeholders will be handled, and how potential obstacles to participation may be addressed.</p> <p>Consideration of vulnerabilities of the stakeholders must be taken into consideration in the engagement of these parties. Mitigation measures must be appropriate and aligned with the respective needs and concerns of the stakeholders.</p>		<p>Upon identification of individuals and groups identified, a Stakeholder Engagement Plan has been drafted, consulted and disclosed, that stipulates the plans for stakeholder engagement across the implementation timeline. The SEP will set out how communication with stakeholders will be handled, and how potential obstacles to participation may be addressed.</p> <p>Consideration of vulnerabilities of the stakeholders must be taken into consideration in the engagement of these parties. Mitigation measures must be appropriate and aligned with the respective needs and concerns of the stakeholders. Grievances will be managed under the SEP's GRM.</p>

Source: World Bank (2017)

3.4 ENVIRONMENTAL, HEALTH, AND SAFETY GUIDELINES OF THE WORLD BANK

The Environment, Health and Safety guidelines of the World Bank Group applies to municipal solid and industrial waste management facilities that include the following processes:

- Waste collection and transport;
- Waste receipt,
- Unloading, processing, and storage;
- Landfill disposal;
- Physio-chemical and biological treatment; and,
- Incineration Projects (WBG, 2007).

Table 3.4-1: EHS Guidelines Related to Labor Management, Community Health and Environmental Management in Waste Management Facilities

Component	Description
Labor Management Occupational Safety	<p>Occupational Safety Procedures for the landfill operation must include provisions related to:</p> <ul style="list-style-type: none"> • Accidents and injuries, including those involving trucks and moving equipment, unstable disposal site surfaces, and fires and explosions, • Chemical exposure, including exposure to chemical burns, and • Exposure to pathogens and vectors that can be health hazards. <p>For informal living near waste management facilities, they often have poor living conditions with only minimal water and sanitary facilities. They are also especially at risk to exposure to hazardous and toxic waste and fumes. As much as possible, the economic displacement of these must be avoided, especially without provision of any alternatives.</p> <p>Facilities managing municipal solid waste must work together with government entities to allow the collection and sorting of solid waste, if possible, initiatives to help them form formal entities, such as cooperatives or micro-enterprises, can be done to formally contract them into the process of the facility or integrated in material recovery facilities as independent workers. The workers must be officially registered, provided with protective equipment, provided with washing and sanitation facilities, and receive regular health examinations and vaccinations</p>

Component	Description
	under a health surveillance program. The design of the facility must also consider easier access to the recyclables and reduce their contact to wastes that pose hazards. (p. 23-26)
Community Health and Safety	<p>Long-term Operation, Decommissioning or Closure: Specific procedures on closure must emphasize preservation of long-term integrity and security of the site. The closure and post-closure plan must include mitigating impacts to human health and environment after the closure. All plans must be aligned with the defined post-closure use.</p> <p>Landfill Siting In the identification of landfill sites, the nearest residential developments must be over 250 meters from the site option.</p> <p>Community Health and Safety The following impacts likely to occur during the operation and decommissioning phases must be looked into:</p> <ul style="list-style-type: none"> • <i>Waste scavenging:</i> should not be allowed under any circumstances in hazardous and non-hazardous industrial waste management facilities. Only facilities handling municipal solid waste may consider incorporating the employment of waste-pickers into the operations of the facility. • <i>Physical, chemical, and biological hazards:</i> access to facilities, especially for areas that hold toxic waste, must be restricted and implement security procedures. • <i>Litter:</i> garbage outside the facility must be managed to avoid the exposure of the adjacent community to hazardous substances and potentially spread disease. • <i>Noise:</i> measures to management noise should be taken to void causing nuisance to the adjacent areas., • <i>Dust and odors:</i> Buffer areas must be included in the design, especially between processing areas and potential receptors, especially residences, hospitals and schools. Processing areas must be located in areas at the downwind from these areas to manage and control exposure of community to dust and odors. <p>(Section 1.1.1, p.10-11, 14; Section 1.3 p.26)</p>
Environmental Protection and Management	<p>On emission and noise management Additional guidelines on emission management specific for Waste Management Facilities include:</p> <ul style="list-style-type: none"> • Inclusion of landfill gas collection system and its use if practical, • Use of gas blowers, and • Installation and regular sampling of boreholes. <p>Additional guidelines on noise management specific for Waste Management Facilities include the following:</p> <ul style="list-style-type: none"> • Construction of a buffer zone, • Road quality maintenance • Use of equipment with low-noise emission levels, • Use of sound-insulating materials, acoustic screens and silencing equipment, • Enclose inherently noisy equipment in a fixed structure, and • Inclusion of noise considerations in the design process. <p>EHS Guidelines for Waste Management Facilities on Landfill Siting The guidelines provide that the proximity of groundwater and recharge area, surface water. Private or public drinking, irrigation, or livestock water supply, and perennial stream must be considered in landfill siting. Also, the exposure of the site option to hydrometeorological and seismic hazards, must be considered in the site selection. (Section 1.1.1, p.10-11, 14)</p>

Source: World Bank Group (2007)

3.5 GAP ANALYSIS

The policies of the World Bank and the related legislation of the RGC at the national and local scale were reviewed and analyzed to identify gaps and measures to bridge them, as detailed in **Table 3.5-1**.

Table 3.5-1: Gap Analysis of Existing World Bank and Cambodia Policies

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
General	Paragraph 11: Associated Facilities means facilities or activities that are not funded as part of the project and, in the judgment of the Bank, are: (a) directly and significantly related to the project; and (b) carried out, or planned to be carried out, contemporaneously with the project; and (c) necessary for the project to be viable and would not have been constructed, expanded or conducted if the project did not exist.		In line with the WB ESF, if GOC would undertake the closure and remediation or rehabilitation existing dumpsites, such closure is categorized as associated facilities to the development of new landfill sites since the objective of development, operation and use of new sanitary landfills cannot be achieved without closure of the existing dumpsites. The new sanitary landfills will have a gate fee for the disposal of waste for the proper investments, operation and maintenance of the new sanitary landfill and without closure of the existing dumpsites (for which no gate fee is applied), waste will not be transported and disposed at the new landfill making the new landfill project unviable. As an alternative to closure, rehabilitation and extension of the existing dumpsite into a sanitary landfill is possible.	MPWT
Environmental and Social Impact Assessment	ESS1: The conduct of an assessment of the environmental and social risks and impacts (i.e., direct, indirect, cumulative) is required for proposed World Bank-financed and associated facilities across its project phases (i.e., preconstruction, construction, operation, decommissioning, closure, and reinstatement/restoration phases, whichever are relevant). Borrowers are required undertake the following: (5) <u>Environment and Social Assessment</u> , identification and evaluation of potential environmental and social risks and impacts; (6) <u>Stakeholder Engagement</u> , preparation of stakeholder engagement plans (SEP), information disclosure, and	Law on Environmental Protection and Natural Resource Management (1996) includes the formulation of sub-decrees for environmental management, including policies related to the Environmental Impact Assessment Process. Sub-decree 72 on Environmental Impact Assessment Process (1999) serves as the legal basis that established the guidelines for the I/EIA for projects in waste processing, burning activities, wastewater treatment plants, and drainage systems greater than 5,000 ha. Prakas 376 on General Guideline for Preparing Initial Environmental Impact Assessment and Full Environmental Impact Assessment Report (2009) sets the guidelines and scope of I/EIAs.	WB ESS and RGC policies on EIA are aligned in terms of assessing environmental impacts of projects as a whole, focusing on the natural environment as well as on the socio-economic aspects. The national legislation on EIA excludes significant aspects related to social impact assessment and management. Also, the, focus on vulnerable groups is not as strongly provided in the RGC policies as in the WB ESS. Apart from the inclusion of public participation in the RGC's EIA process, there is no prescription on its strategic conduct, including the conduct of mapping and the preparation of a stakeholder engagement plan. The ESIAs and ESMPs that will be developed for the sub-projects will specifically include focus on social assessment and management plus	MPWT

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>meaningful consultation as provided by ESS-10;</p> <p>(7) <u>Environmental and Social Commitment Plan (ESCP)</u>, timebound planning of actions and measures for identified potential risks and impacts; and,</p> <p>(8) <u>Monitoring and Reporting</u>, performance tracking and evaluation of actions identified in the ESCP.</p> <p>For projects that include existing facilities for rehabilitation, a review and audit must be conducted to identify corrective actions to align the existing facility with the requirements of the ESS and must be indicated in the ESCP. All high-risk projects and sub-projects must be in accordance to ESS, while Substantial-risk to low-risk projects must be in accordance to national laws and the ESS deemed relevant by WB.</p> <p>A CBA or other analyses will be required for instances wherein selected option in site, design or technology poses higher environmental and social risks compared to other options.</p> <p>The necessary capacity and trainings related to the implementation and monitoring of the ESCP must be included as part of its measures.</p> <p>This application of this ESS is contingent to ensuring the compliance to ESS10, and the other ESS as necessary within the context of the project.</p> <p>(ESS-1 Par 1011, 15, 23, 28-30; ESS-1 Guidance Notes GN 15.1-GN17.2)</p>	<p>Prakas on Delegation of Power to Municipal/Provincial Department of Environment to Decide on Project Development (2005) delegates the review of I/EIAs of private individuals or companies, joint ventures, public companies and government agencies to the municipal or provincial department of environment.</p> <p>Prakas 21 on the Classification of Environmental Impact Assessment for Development Projects (2020) The Prakas provides an amended listing of the impact classification of projects to identify whether they will be required to submit an environmental protection agreement / contract (projects with small E&S impact), initial environmental and social impact assessment (projects with medium E&S impact), or full environmental and social assessment (projects with serious E&S impact).</p>	<p>vulnerable groups as well as will include specific stakeholder engagement plans.</p>	

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
Labor Conditions and Occupational Safety	ESS1: Environmental and social assessment must include relevant risks and impacts including implications to health, safety and wellbeing of workers of the facility (ESS-1 Par 28)	<p>Labor Law (1997) includes occupational health safety provisions not provided for sanitary landfills and other waste management facilities. The law also establishes the responsibility of employers in the workplace, including: provision of protective equipment, ensuring safe and clean work environment and safety of the workers, and bearing responsibility in work-related accidents, including compensation. (Labor Law 1997, Chapter VIII and IX)</p> <p>The minimum allowable age for <i>wage employment</i> is set at 15 years, and 18 years for hazardous work. For child laborers from 15 to 17 years old working wage employment are now allowed to perform night work,</p> <p>Children between 12 to 15 years old can be hired to do light work as long as the nature of work fulfils the following:</p> <p>(1) work is not hazardous to their health or mental and physical development.,</p> <p>(2) work will not affect their regular school attendance, their participation in guidance programs or vocational training approved by a competent authority. The definition of light work is provided in a separate prakas.</p> <p>The law is applicable to all employment contracts within the territory of the Kingdom of Cambodia, regardless of where the contract was made and what the nationality and residences of the contracted parties are. This law applies to every enterprise or establishment across all industries and sectors</p> <p>Prakas No. 002 on Category of Occupation and Light Work Permitted for Children (2008) Light work for child laborers aged 12 to 15 years old, pertaining to those that does not affect the</p>	<p>Both the WB ESS and RGC laws prohibits the employment of children under the age of 18 in hazardous work. However, national laws only cover children employed in the formal sector. Most child labor, especially the ones with poor labor conditions, are in the informal sector where waste-picking is also part of.</p> <p>To address this gap, the ESMF recommends a minimum working age of 18 years old for contractors (details in the LMP). Specific guidelines will also be developed to require the contractors to comply as well as monitor their compliance.</p> <p>For the sub-projects involving waste-pickers, Resettlement Plans (RPs) and Livelihood Restoration Plans (LRPs), will be prepared, adopted and implemented with meaningful consultation with affected persons in accordance with ESS5 and consistent with the requirements of the Resettlement Policy Framework (RPF) and Livelihood Restoration Frameworks (LRFs) and in agreement with the General Department of Resettlement (GDR) under the Ministry of Economy and Finance (MEF). This will include both physical displacement and economic displacement and include livelihood restoration and improvement programs for affected persons. Specific attention will be paid to woman and children waste-pickers to develop suitable measures in line with ESF on the basis of social baseline studies for each of the applicable sub-projects.</p>	MOE, MOI, MPWT, GDR, under MEF Contractors, construction supervisors

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
		<p>health as well as mental and physical development of the employed children and does not affect their regular school attendance, involvement in orientation programs, or vocational trainings required by the competent authorities, includes</p> <ul style="list-style-type: none"> • Working at some shopping malls such as selling booth, vegetables and fruit selling stall, or news stand and stall of other similar goods; • Receiving, packing, selecting and classifying goods as well as assembling light things, including opening or taking goods out of the package; • Lifting, carrying and holding light things. <p>The prakas provides a full listing of the types of light work for children aged 12-15 years old and is detailed in Section 3.2.2.</p> <p>Those who employ children from 12 to 15 years old for light work shall allow their parents or guardian to understand the terms and conditions of employment, including the children's working time, school attending time, vulnerability to work-related accidents and diseases, adopted measures on hygiene and work safety.</p> <p>Work hours for these children shall not exceed four (4) hours for school days, and seven (7) hours for school-free days. They are also prohibited from working between 8:00 pm to 6:00 am. They are entitled to two (2) consecutive days off per week.</p>		
	ESS2: Labor management procedures for all types of workers to be employed or engaged by the project must include	Prakas No. 106 on the Prohibition of Hazardous Child Labour (2004) prohibits the employment of children below 18 years old on		

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>minimum benefits, termination agreements, principle of nondiscrimination and equal opportunity, minimum age of workers, occupational health and safety, and grievance mechanism to establish labor standards in the workplace.</p> <p>ESS 2 para 19, and footnote 13, notes that a child under the age of 18 may be employed or engaged in connection with the project if there is no hazardous work, an appropriate risk assessment is conducted prior to the work commencing, and the recipient conducts regular monitoring of health, working conditions, hours of work</p>	<p>jobs involving hazardous works involving construction and demolition (with exception to designated safe areas with permit from labor inspector), exposure to hazardous chemicals and substances, exposure to fumes, dust gas and other ambient substances, heavy machinery and equipment</p> <p>Employers considering to employ children of 16 years of age to do hazardous work are required to secure a permit from the Ministry and must adhere to the following:</p> <ul style="list-style-type: none"> • No work between 10:00pm to 5:00am • Children undergo training • Consultation with Labor Advisory Committee • Annual health checkups with Department of Labor Health to certify that they are in the proper health condition to engage in hazardous work 		
	<p>EHS Guidelines for Waste Management Facilities on Occupational Health and Safety: Occupational Safety Procedures for the landfill operation must include provisions related to: (1) accidents and injuries, including those involving trucks and moving equipment, unstable disposal site surfaces, and fires and explosions (2) chemical exposure, including exposure to chemical burns (3) exposure to pathogens and vectors that can be health hazards. For informal living near waste management facilities, they often have poor living conditions with only minimal water and sanitary facilities. They are also especially at risk to exposure to hazardous and toxic waste and fumes. As much as possible, the economic displacement of these must be</p>	<p>Law on Suppression of Human Trafficking and Sexual Exploitation (2008) declares forms of human trafficking and sexual exploitation, including forced labor or services, slavery or practices similar to slavery, debt bondage, involuntary servitude, and child labor, for profit-making as unlawful. In the explanatory note on the law by the Ministry of Justice, forced labor is defined as all work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily (IJM, 2016).</p>		

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party	
	<p>avoided, especially without provision of any alternatives.</p> <p>Facilities managing municipal solid waste must work together with government entities to allow the collection and sorting of solid waste, if possible, initiatives to help them form formal entities, such as cooperatives or micro-enterprises, can be done to formally contract them into the process of the facility. Once such work is formalized, the workers must be officially registered, provided with protective equipment, provided with washing and sanitation facilities, and receive regular health examinations and vaccinations under a health surveillance program. The design of the facility must also consider easier access to the recyclables and reduce their contact to wastes that pose hazards. (p. 23-26)</p>				
Pollution	<p>ESS3: Policies related to requirements and standards related to the sustainable use of resources in the various stages of the project must be laid out. Additionally, measures for prevention and mitigation short and long-term pollution (i.e., air, water, noise) and waste (i.e., hazardous, nonhazardous, and chemical) must also be provided.</p>	<p>Law on Environmental Protection and Natural Resource Management (1996) mandates the formulation of sub-decrees on Air Pollution Monitoring and Noise Disturbance, Water Pollution Control, and Environmental Impact Assessment Process.</p>	Resource efficiency and pollution prevention and management measures shall be developed under the ESMP to be prepared, submitted and implemented.	MWPT, MOI, MOE	
	<p>General EHS Guidelines: International Standards on Air Quality and Noise Level was included in the guidelines: <u>Ambient Air Quality:</u> WHO Ambient Air Quality Standards set in 2005 were adopted.</p>	<p>Sub-decree 42 on Air Pollution Monitoring and Noise Disturbance (2000) establishes the standard on ambient air quality and maximum allowable noise level as follows: Noise: Vehicles</p> <table><tr><th>Type of Vehicles</th><th>Max Limit (dB (A))</th></tr><tr><td><125cm3</td><td>85</td></tr></table>			Type of Vehicles
Type of Vehicles	Max Limit (dB (A))				
<125cm3	85				

Item	Applicable WB Policy	Relevant RGC Policy		Policy Gaps Identified and Actions Suggested	Responsible Party
	Noise Level: WHO Guidelines on Community Noise set in 1999 was adopted. (p.4, 53)	≥125cm3	90		
		<12 seats	80		
		≥12 seats	85		
		<3.5 tons	85		
		≥3.5 tons	88		
		≥150kw	89		
		Others not included above	91		
		Noise: Residential Areas and Public Places			
		Location	6am-6pm	6pm-10pm	10pm-6am
		Non-residential: Hospital, school, kindergarten	45	40	35
		Residential: Hotel, house,	60	50	45
		Commercial and services,	70	65	50
		Industry mixing with residential	75	70	50
		Noise: Standard at Work Place and Industries			
		Noise Level (dB (A))	Max duration (hour)	Note	
		75	32	Earplug is needed for those who work at 80 dB (A)	
		80	16		
		85	8		
		90	4		
		95	2		
		100	1		
		105	0.5		
		110	0.25		
		115	0.125		
		Air Quality			

Item	Applicable WB Policy	Relevant RGC Policy					Policy Gaps Identified and Actions Suggested	Responsible Party
			1h (mg/m ³)	8hrs (mg/m ³)	24hrs (mg/m ³)	1 yr (mg/m ³)		
		CO	40	20				
		NO ₂	0.3		0.1			
		SO ₂	0.5		0.3	0.1		
		O ₃	0.2					
		Pb			0.005			
		TSP			0.33	0.1		
	<p>EHS Guidelines for Waste Management Facilities on emission and noise management: Additional guidelines on emission management specific for Waste Management Facilities include: (1) inclusion of landfill gas collection system and its use if practical, (2) use of gas blowers, and (3) installation and regular sampling of boreholes.</p> <p>Additional guidelines on noise management specific for Waste Management Facilities include: (1) construction of a buffer zone, (2) road quality maintenance (3) use of equipment with low-noise emission levels, (4) use of sound-insulating materials, acoustic screens and silencing equipment, (5) enclose inherently noisy equipment in a fixed structure, and (6) inclusion of noise considerations in the design process.</p> <p>EHS Guidelines for Waste Management Facilities on Landfill Siting: Proximity of groundwater and recharge area, surface water. Private or public drinking, irrigation, or livestock water supply, and perennial stream must be considered</p> <p>Exposure of the site option to hydrometeorological and seismic hazards, must be considered in the site selection.</p>	<p>Technical guideline on municipal solid waste management (2016) includes the detailed guidelines and instructions related to the operations, maintenance, and closing of landfills, including composing methods, management and treatment of medical and chemical waste</p>						

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party																														
	(Section 1.1.1, p.10-11, 14)																																	
Community Health and Safety	ESS1: Environmental social assessment must include relevant risks and impacts in in the health, safety and well-being of project affected communities, along with the community safety provisions of the EHS Guidelines. (ESS-1 Par 28)	Sub-decree 42 on Air Pollution Monitoring and Noise Disturbance (2000) establishes the standard on ambient air quality and maximum allowable noise level as follows: Noise: Vehicles <table><tr><th>Type of Vehicles</th><th>Max Limit (dB (A))</th></tr><tr><td><125cm3</td><td>85</td></tr><tr><td>≥125cm3</td><td>90</td></tr><tr><td><12 seats</td><td>80</td></tr><tr><td>≥12 seats</td><td>85</td></tr><tr><td><3.5 tons</td><td>85</td></tr><tr><td>≥3.5 tons</td><td>88</td></tr><tr><td>≥150kw</td><td>89</td></tr><tr><td>Others not included above</td><td>91</td></tr></table> Noise: Residential Areas and Public Places <table><tr><th>Location</th><th>6am-6pm</th><th>6pm-10pm</th><th>10pm-6am</th></tr><tr><td>Residential: Hotel, house,</td><td>60</td><td>50</td><td>45</td></tr><tr><td>Industry mixing with residential</td><td>75</td><td>70</td><td>50</td></tr></table>	Type of Vehicles	Max Limit (dB (A))	<125cm3	85	≥125cm3	90	<12 seats	80	≥12 seats	85	<3.5 tons	85	≥3.5 tons	88	≥150kw	89	Others not included above	91	Location	6am-6pm	6pm-10pm	10pm-6am	Residential: Hotel, house,	60	50	45	Industry mixing with residential	75	70	50	Prepare, adopt, and implement measures and action to assess and manage specific risks and impacts to the community arising from Project activities including remediation of dumpsites or rehabilitation of dumpsites into landfills, construction of waste transfer and/or treatment facilities, as described in the ESMPs for the sub-projects to be prepared in accordance with the ESMF, in a manner acceptable to the Association. The ESMPs will include labor influx management, GBV and road safety during construction phase.	MPWT, contractors, construction supervisors
	Type of Vehicles	Max Limit (dB (A))																																
	<125cm3	85																																
≥125cm3	90																																	
<12 seats	80																																	
≥12 seats	85																																	
<3.5 tons	85																																	
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≥150kw	89																																	
Others not included above	91																																	
Location	6am-6pm	6pm-10pm	10pm-6am																															
Residential: Hotel, house,	60	50	45																															
Industry mixing with residential	75	70	50																															
	ESS4: The risks and impacts to the health, safety, and security of the identified project-affected persons and community must be identified and minimized. All potential risks across all phases of the projects must be identified and evaluated while taking into consideration the circumstances of disadvantaged and vulnerable groups.	Labor law of the Kingdom of Cambodia (1997) includes Chapter VIII, Health and Safety of Workers, articles 228 to 247																																
	EHS Guidelines for Waste Management Facilities: <u>Long-term Operation, Decommissioning or Closure:</u> Specific procedures on closure	Sub-Decree on Municipal Solid Waste Management (2017) The purpose of this sub-decree is to regulate the solid waste management with proper technical manner and																																

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>must emphasize preservation of long-term integrity and security of the site. The closure and post-closure plan must include mitigating impacts to human health and environment after the closure. All plans must be aligned with the defined post-closure use.</p> <p><u>Landfill Siting:</u> In the identification of landfill sites, the nearest residential developments must be over 250 meters from the site option.</p> <p><u>Community Health and Safety:</u> The following impacts likely to occur during the operation and decommissioning phases must be looked into:</p> <p>(6) <i>Waste scavenging:</i> should not be allowed under any circumstances in hazardous and non-hazardous industrial waste management facilities. Only facilities handling municipal solid waste may consider incorporating the employment of .</p> <p>(7) <i>Physical, chemical, and biological hazards:</i> access to facilities, especially for areas that hold toxic waste, must be restricted and implement security procedures.</p> <p>(8) <i>Litter:</i> garbage outside the facility must be managed to avoid the exposure of the adjacent community to hazardous substances and potentially spread disease.</p> <p>(9) <i>Noise:</i> measures to management noise should be taken to void causing nuisance to the adjacent areas.,</p>	<p>safe way in order to ensure the protection of human health and the conservation of bio-diversity. This sub-decree applies to all activities related to disposal, storage, collection, transport, recycling, dumping of garbage and hazardous waste. The collection, transport, storage, recycling, minimizing and dumping of waste in the provinces and cities are the responsibility of the authorities of provinces and city.</p>		

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>(10) <i>Dust and odors</i>: Buffer areas must be included in the design, especially between processing areas and potential receptors, especially residences, hospitals and schools. Processing areas must be located in areas at the downwind from these areas to manage and control exposure of community to dust and odors.</p> <p>(Section 1.1.1, p.10-11, 14; Section 1.3 p.26)</p>			
Land Acquisition and Livelihood Restoration	<p>ESS5</p> <p>Objectives of ESS5 are:</p> <ul style="list-style-type: none"> • To avoid involuntary resettlement or, when unavoidable, minimize involuntary resettlement by exploring project design alternatives. • To avoid forced eviction. • To mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by: (a) providing timely compensation for loss of assets at replacement cost and (b) assisting displaced persons in their efforts to improve, or at least restore, their livelihoods and living standards, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher. • To improve living conditions of poor or vulnerable persons who are physically displaced, through provision of 	<p>The Constitution of Cambodia (1993) establishes the right to land ownership, and the right of the State to eminent domain (Art. 44)</p> <p>Land Law (2001) defines the scope of ownership of immovable properties, such as land, trees and fixed structures, including:</p> <ul style="list-style-type: none"> • <i>Eminent Domain and Just Compensation</i>: “No person may be deprived of his ownership, unless it is in the public interest. Any ownership deprivation shall be carried out in accordance with the governing procedures provided by law and regulations, and after the payment of fair and just compensation in advance.” (Art. 5) • <i>Basis of Land Ownership</i>: legal possession as the solid basis of land ownership • <i>Disqualification from compensation in eminent domain claims</i>: law defines the following as not entitled to any compensation in the event of any developments or eminent domain acquisition: <ul style="list-style-type: none"> ○ Lands not acquired through legal possession (Art. 18-19), ○ A foreigner who falsifies national identity to become an owner of land in Cambodia 	<p>No significant gaps have been identified in terms of land acquisition, livelihood restoration except in case of voluntary donation and livelihood restoration plans. The 2018 SOP includes measures proposed for compensation for houses, structures, land, and income restoration (compensation and special measures for vulnerable groups). A specific procedure for handling voluntary donations is included in the Resettlement Framework.</p> <p>For the sub-projects involving waste-pickers, resettlement plans and livelihood restoration plans will be prepared, adopted and implemented with meaningful consultation with affected persons in accordance with ESS5 and consistent with the requirements of the Resettlement Policy Framework and the Livelihood Restoration Framework (LRF) and in agreement with the General Department of Resettlement (GDR) under the Ministry of Economy and Finance (MEF). This will include both physical displacement and economic displacement and include livelihood restoration and improvement programs for affected persons. Specific attention will be paid to woman</p>	<p>IRC GDR MEF MOI, MPWT, MOE</p>

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>adequate housing, access to services and facilities, and security of tenure.</p> <ul style="list-style-type: none"> To conceive and execute resettlement activities as sustainable development programs, providing sufficient investment resources to enable displaced persons to benefit directly from the project, as the nature of the project may warrant. To ensure that resettlement activities are planned and implemented with appropriate disclosure of information, meaningful consultation, and the informed participation of those affected 	<p>shall be punished as determined under article 251 of this law. Any property bought under these circumstances will be seized as State property without compensation from the State. (Art. 8), and</p> <ul style="list-style-type: none"> Properties past the expiration of their lease (Art 108). <p>Prakas No. 6 on Measures to Crack Down on Land Grabbing and Encroachment (2007) and Sub-decree No. 197 provides that compensation for structures and assets located in ROWs will not be subject to any compensation.</p> <p>Circular No. 2 on Measures against Illegal Holding of State Land (2007) sets the definition, measures and procedures for reclamation of state-owner lands under illegal possession. The circular reiterates that those considered as illegal occupants of state land will not be entitled for any compensation as provided by the 2001 Land Law.</p> <p>However, for poor and landless families “may receive preferential treatment in obtaining appropriate size of land for making their livelihood based on their actual situation” (CLP, 2007). For lands where indigenous groups have asserted collective ownership, the claim of the State over the land must be postponed until it is legally registered as State-owned.</p>	and children waste-pickers to develop suitable measures in line with ESF on the basis of social baseline studies for each of the applicable sub-projects.	
	<p>ESS5: The risks and impacts related to the permanent or temporary physical and economic displacement of project-affected persons across various tenure arrangements shall be assessed and evaluated. The safeguard upholds the</p>	<p>Expropriation Law (2010) defines the principles, mechanisms, and procedures of expropriation, and defining fair and just compensation.</p> <p>Inter-Ministerial Resettlement Committee and the General Department of Resettlement at</p>		

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	avoidance of involuntary resettlement, and for instances wherein it cannot be avoided, measures to minimize and mitigate the adverse impacts to the displaced shall be established.	<p>Ministry of Economy and Finance. In 1997, the Inter-Ministerial Resettlement Committee (IRC) was established with the mandate to review and evaluate the impacts on resettlement and land acquisition for public physical infrastructure development projects in Cambodia. It is a collective entity that exercises the authority of the Expropriation Committee under the 2010 Expropriation Law. The IRC consists of the MEF, Ministry of Land Management, Urban Planning and Construction (MLMUPC), Ministry of Economy and Finance (MEF) and Ministry of Agriculture, Forestry and Fisheries (MAFF). It is permanently chaired and led by the MEF, and with members from different line ministries, including consists of the MEF, Ministry of Land Management, Urban Planning and Construction (MLMUPC), and Ministry of Agriculture, Forestry and Fisheries (MAFF). The IRC carries out its role and responsibilities through the IRC-WG which is established for each public investment project by MEF. The powers of the IRC are delegated to its permanent Chairman.</p> <p>The General Department of Resettlement (GDR) serves as the secretariat of the IRC and the lead for land acquisition and resettlement for public investment projects. The Sub-Decree No.115 enacted in 2016 promoted the Resettlement Department of the MEF to GDR and defines its functions and responsibilities to the IRC and in land acquisition and resettlement</p> <p>2018 Land Acquisition and Involuntary Resettlement reflects RGC's laws and regulations relating to the acquisition of land and the involuntary resettlement of AP and the safeguard policies, standards and procedures of</p>		

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
		<p>Development Partners (DPs) as applied to public infrastructure investment projects.</p> <p>The SOP includes references to international good practices in resettlement planning, implementation, monitoring and reporting. The SOP has been promulgated under Sub Decree No. 22 ANK/BK on 22 February 2018 and applies to all externally financed projects in the Kingdom of Cambodia. The GDR of the Ministry of Economy and Finance (MEF) is responsible for providing guidance and clarification to users of the SOP.</p> <p>2014 Circular No. 6 of the MEF on the Resettlement Implementation Procedure also serves as a vital reference for development projects through providing the administrative management and role and responsibility of all relevant Implementing Agency and Provinces in implementing the resettlement for development projects.</p>		
Biodiversity and Ecology	ESS1: Environmental social assessment must include relevant risks and impacts including threats to natural habitats and biodiversity, ecosystem services, fisheries and forests. (ESS-1 Par 28)	Law on Nature Protection Area (2008) specifies the eight (8) categories of natural protected areas: natural park, wildlife sanctuary, protected landscape, multi-purpose use management area, biosphere reserve, natural heritage site, marine park, and Ramsar site.	<p>During construction activities, there will be possible significant impacts on natural habitats and biodiversity. The impact on biodiversity will be analyzed in detail during the environmental and social impact assessment study and the corresponding mitigating measures will be formulated in the ESMPs for the sub-projects.</p> <p>The project will not finance waste management, treatment and disposal infrastructure that could provide access to critical habitats such as wildlife sanctuary and protected areas</p>	MPWT, contractors, construction supervisors
	ESS6: The assessment must include the identification, assessment, and evaluation of direct and indirect threats and potential impacts to biodiversity, and natural, critical, modified and habitats. As deemed necessary, a Biodiversity Management Plan may be developed.	Law on Water Resources Management (2007) includes regulation on discharge, disposal or deposit of polluting substances that can impact water quality. Proper authorization from the Ministry of Water Resources and Meteorology must be secured prior to any activities aligned to this.		
		Law on Forest (2002) establishes framework and regulatory measures to protect and conserve forests and their biological diversity,		

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		and places forest management under the function of the MAFF. The same law requires the conduct of environmental and social impact assessments for any activities that may have potentially significant impacts to the forest ecosystem.		
Indigenous Peoples	ESS7: Aims to avoid adverse impacts.... And provide culturally appropriate benefits. Proposed projects must include an assessment of the nature and degree of the expected direct and indirect economic, social, cultural and cultural heritage, and environmental impacts of the project to indigenous peoples, including potential encroachment, transformation and degradation of their land and resources. Meaningful consultations must be ensured for projects that will be directly or indirectly be affected indigenous peoples and traditional local communities. (ESS7 Par 7, 11-13)	<p>The Constitution of Cambodia (1993) guarantees that all Khmer citizens are equal above the law and shall enjoy the same rights freedom, and duties regardless of race, color, sex, language, beliefs, religions, political tendencies, birth of origin, social status, resources, and any position (Art. 31). It also guarantees all Khmer citizens and legal entities, individually or collectively, have the right to own land (Art. 44).</p> <p>National Policy on the Development of Indigenous Peoples (2009) serves as an umbrella framework for government policies related to indigenous peoples and communities, particularly in culture, education, health, environment, land, agriculture, water resources, infrastructure, justice, tourism, industry and mines and energy. The policy details strategy across these sectors, including:</p> <ol style="list-style-type: none"> 3. Use of local languages in multilingual primary education, the media, and public consultation “Indigenous peoples shall be fully entitled to express their comments and opinions and to make any decisions on the development of the economy, society and their cultures towards growth in the society” 4. Conduct of impact assessments for all infrastructure projects: “Development projects in the living areas of indigenous peoples can function only if there has been an environmental and social impact 	<p>An Indigenous Peoples’ Planning Framework (IPPF) is included in the ESMF to ensure compliance with WB ESS that calls for the meaningful/culturally appropriate consultations with indigenous communities, if necessary. When required, considering the criteria included in the ESF, these will include meaningful consultations based on Free and Prior Informed Consent.</p> <p>Screen any proposed subproject in accordance with the IPPF as part of the site-specific ESIs and reflect whether indigenous peoples are present in or have collective attachment to the proposed subproject area.</p> <p>In the case if ESS7 is relevant to specific subproject, prepare, adopt, and implement IPPs consistent with the requirements of ESS7, in a manner acceptable to the Association. The details on the GAP analysis and measures are in the IPPF.</p>	MOE with MRD, MPWT

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
		<p>assessment and publicity to relevant indigenous peoples' communities in advance in order for those people to have an opportunity to provide input about their need"</p> <p>The defines the parameters of the registration of indigenous communities as legal entities to enable them to formally own their communal land and assets, and allow them to participate in economic development.</p> <p>Land Law (2001) govern the rights to land and property as defined by the 1993 Constitution, and defines the scope of ownership of immovable properties, such as land, trees and fixed structures, including the rights of indigenous communities to collective ownership (Art. 23-26).</p> <p>The law defines indigenous communities as “a group of people who (1) manifest ethnic, social, cultural and economic unity, (2) practice a traditional lifestyle, and (3) cultivate the lands in their possession according to customary rules of collective use.” (Art. 23)</p> <p>Indigenous community lands are defined under the 2001 land law as “lands where the said communities have established their residencies and where they carry out their traditional agriculture”, and these lands “include not only lands actually cultivated but also includes reserves necessary for the shifting cultivation which is required by the agricultural methods they currently practice.” These Indigenous Community Lands are granted to indigenous communities as collective property and is protected by the same rights and ownership of private owners. (Art. 25-26)</p>		

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		<p>Circular No. 2 on Measures against Illegal Holding of State Land (2007) sets the definition, measures and procedures for reclamation of state-owner lands under illegal possession. The circular reiterates that those considered as illegal occupants of state land will not be entitled for any compensation as provided by the 2001 Land Law. For lands where indigenous groups have asserted collective ownership, the claim of the State over the land must be postponed until it is legally registered as State-owned.</p> <p>2008 Organic Law recognizes indigenous peoples' vulnerability. Councils at provincial and district levels (capital, municipal and khan levels in urban areas) are requested to formulate development plans that identify the needs of vulnerable groups including indigenous peoples.</p> <p>Law on Forestry (2002) recognizes the customary rights of formally registered indigenous communities to forest products and by-products.</p>		
Cultural Heritage	<p>ESS1: Environmental social assessment must include relevant risks and impacts including those that will cause significant adverse risks to cultural heritage.</p> <p>(ESS-1 Par 28)</p>	<p>Royal Decree on the Establishment of Protected Cultural Zones in the Siem Reap/Angkor Region and Guidelines for their Management (1993) established five (5) cultural zones and what structures are within them:</p> <ol style="list-style-type: none"> 6. Core Zone: Monumental sites 7. Buffer Zone: Protected Archaeological Reserves 8. Protected Cultural Landscapes 9. Sites of Archaeological, Anthropological or Historic Interest, or sites outside of the core and buffer zones 10. Socio-Economic and Cultural Development Zone 	A Chance Find Procedure will be included in the ESMPs for sub-projects	MPWT, MOI, MOE Contractor, participating municipalities and APSARA for Siem Reap

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
		<p>Royal Decree on the creation of the APSARA National Authority (1995) serves as the legal basis in the establishment of the Authority for the Protection of the Site and Management of the Region of Angkor (APSARA) that has the jurisdiction in the protection and conservation of the Angkor Heritage Sites,</p>		
	<p>ESS8 specifies that risks and impacts to tangible and intangible cultural heritage are required to be identified and assessed, including potential changes in the physical environment, movement of earth; proximity to protected area and their respective buffer zones; and proximity to recognized cultural heritage site. Avoidance of any adverse impact to cultural heritage should be upheld whenever possible.</p>	<p>Law on Protection of Cultural Heritage (1996) protects natural cultural heritage and property, whether movable or immovable, publicly or privately owned. against illegal destruction, modification, alteration, excavation, alienation, exportation or importation. It stipulates the following:</p> <ul style="list-style-type: none"> • <u>Definition of Cultural Property</u>: Cultural property is defined (Chap. 1, Article 4) • <u>Change Discoveries</u>: in the event of discovery of any cultural property during construction, it must immediately be turned over to and local police, to the Provincial Governor, then to cultural heritage authorities (i.e., APSARA) without delays. Within 30 days that the item is verified as cultural property by the authorities, a temporary suspension of construction works and an announcement of safeguarding measures will be taken (Section 7, Article 37-39). <p>No. 70 SSR government Decision (2004) defined the land use in the Angkor Park, wherein its Zones 1 and 2 are considered State properties.</p>		
Stakeholder Engagement	<p>ESS1: As part of the information disclosure, the findings of the E&S assessment of high-risk and substantial risk projects shall be provided prior to appraisal.</p>	<p>Guidebook on Environmental Impact Assessment in the Kingdom of Cambodia (2012) defines public participation and highlights the stages in the project cycle wherein</p>	<p>A Stakeholder Engagement Plan (SEP) that complies with the provisions of WB ESS10 is included in the ESMF to ensure sustained stakeholder engagement, and appropriate conduct</p>	MOE, MOI, MPWT

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
		stakeholder engagement is essential: project scoping, mitigation measurement, report review, and project monitoring. The guidebook provides that the identification of mitigating measures on environmental impacts should also be based on the results of public consultation.	of information disclosure and consultations. No specific gap has been identified. The Stakeholder Engagement Plan will be updated, adopt and implemented throughout implementation.	
	<p>ESS10: Meaningful engagement and consultation of stakeholders must be conducted across all stages of the project cycle, thus ensuring that timely, relevant, understandable information are provided to all the identified project-affected parties.</p> <p>Specific measures for the identified PPAPs must be identified and laid out in a Stakeholder Engagement Plan.</p>	<p>Prakas on Public Participation in Environmental Impact Assessment (2017) establishes the key principles to ensure public participation in the EIA process: Principle of Access to Information; Principle of Public Participation; Principle of Access to Social Justice and Effective Remedies; and Principle of Gender Equality in Public Participation; and Principle of Promoting Indigenous People in Public Participation</p>	<p>Prepare, disclose, and implement the SEPs for subproject activities, consistent with ESMF and ESS10</p>	
Vulnerable Groups	<p>ESS1: Environmental social assessment must include adverse risks and impacts that may disproportionately affect certain groups, especially the disadvantaged and vulnerable.</p> <p>As necessary, separate consultation to identify the risks, impacts, and specific needs of these groups can be arranged. (ESS-1 Par 28-29; ESS-1 Guidance Notes GN 28.3-29.1)</p>	<p>Law on the Protection and the Promotion of the Rights of Persons with Disabilities, which states that “Persons with disabilities: refers to any persons who lack, lose, or damage any physical or mental functions, which result in a disturbance to their daily life or activities, such as physical, visual, hearing, intellectual impairments, mental disorders and any other types of disabilities toward the insurmountable end of the scale.”</p>	<p>Focus on vulnerable groups in the ESIA process is not as strongly provided in the RGC policies as in the WB ESS.</p> <p>For the sub-projects involving vulnerable groups which may be impacted through involuntary resettlement or economic displacement, resettlement plans will be prepared, adopted and implemented with meaningful consultation with affected persons in accordance with ESS5 and consistent with the requirements of the Resettlement Policy Framework and in agreement with the General Department of Resettlement (GDR) under the Ministry of Economy and Finance (MEF). This will include both physical displacement and economic displacement and include livelihood restoration and improvement programs for affected persons. Specific attention will be paid to children</p>	MOE, MOI, MPWT
	<p>Directive on Addressing Risks and Impacts on Disadvantaged or Vulnerable Individuals or Groups: the bank directive defines disadvantaged or vulnerable individuals as “individuals who, by virtue of, for example, their age, gender, ethnicity, religion, physical, mental or other disability,</p>	<p>National Policy on Ageing 2017-2030 defines 60 years as the cut-off age for older persons.</p> <p>Prakas on the Prohibition of Hazardous Child Labour (2004) of the Ministry of Social Affairs, Labor, Vocational Training and Youth Rehabilitation that defines minors as individuals below 18 years of age.</p>		

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	social, civic or health status, sexual orientation, gender identity, economic disadvantages or indigenous status, and/or dependence on unique natural resources, may be more likely to be adversely affected by the project impacts and/or more limited than others in their ability to take advantage of a projects benefits" (World Bank, 2016)	Law on the Prevention of Domestic Violence and the Protection of Victims (2005) establishes the legal mechanisms in preventing domestic violence and protecting victims and assigns "legal qualification as the judiciary police and can act as the complaining party instead of the victims" to the Ministry of Women's Affairs. The scope of the law includes domestic violence and acts affecting life, physical integrity, torture, and sexual aggression, towards husband or wife, dependents, and any persons living under a single roof and who are dependent of the households. The law sets out the intervening measures by commune authorities, municipal administrators, and courts for cases of domestic violence	waste-pickers and their families to develop suitable measures in line with ESF on the basis of social baseline studies for each of the applicable sub-projects	

4 ANALYSIS OF EXISTING SITUATION, ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS AND MITIGATION MEASURES

4.1 KEY ENVIRONMENTAL AND SOCIAL CONCERNS AT THE EXISTING DUMPSITES OF POSSIBLE PARTICIPATING MUNICIPALITIES

The project aims to promote the capacities for improved solid waste management of participating cities (preliminary priority cities are Siem Reap, Kampong Speu, and Kandal). This includes, amongst others, improvements in collection, storing, treatment, transportation, and disposal of municipal waste. Overall, the project is expected to be beneficial to the country and the people by reducing pollution and protecting the environment, with significantly positive environmental and social benefits. The successful implementation of the project will effectively improve collection, reduction, and disposal of solid waste in key cities and surrounding towns and rural areas.

Key existing environmental and social concerns at the existing dumpsites in the priority project areas of Siem Reap, Kampong Speu and Kandal include the following:

Table 4.1-1: Environmental, Social and Public Health Concerns at the Existing Dumpsites in possibly participating municipalities

Environmental	<ul style="list-style-type: none"> • None of the existing sites in Siem Reap, Kampong Speu, and Kandal comply with national and/or international minimum sanitary landfill infrastructure and operating standards; • Sites lacking lined engineered cells, leachate collection, drainage, and leachate treatment has resulted in environmental impacts to surface and ground water quality and soil through uncontrolled, untreated leachate discharge are of primary concern; • Lack of intermediate cover and capping and closing of full cells impacts air quality and surrounding environment through odor, GHG discharge, and flies and windblown waste; • Fires are common through lack of proper landfill management; this again impacts air quality;. Odor, dust, and smoke are seriously an issue which has not been managed • Plastics are about 10% of the total waste, the Mekong River is among the most polluted rivers worldwide, with Phnom Penh being one of the major sources of this pollution and impacts of plastic pollution to obstructing wastewater run-off, causing air pollution in case of burning and impacts to ecosystems. Recycling activities are only evidenced for plastics, plastic bottles and aluminum cans. Municipal waste recycling is almost nonexistent. • Unregulated dumping of hazardous waste, it has been regulated by laws and regulations, but practices have not been enforced. Medical waste is required to be disposed of separately. These have an impact on the dumpsites both in terms of water quality and provides a public health risk; villagers typically rely on underground, or surface water and water pollution affects community health and safety; and • Noise and pollution result from poorly managed transfer stations (TPS) particularly in Siem Reap, which share many of the environmental problems cited at the landfill, and from transportation of waste on open trucks.
Social	<ul style="list-style-type: none"> • There is no monitoring of informal waste-pickers working in landfill sites in Siem Reap, Kandal, and Kampong Speu. There are no regulations that ensure their health and safety. Many of these waste-pickers are women and children. Some of the waste-pickers live on or near the waste dumps and derive their main income from waste picking. • Due to the informal nature of the waste-picking, there are no proper labor management procedures for the waste pickers, there are children waste pickers and no proper Occupational Health and Safety Procedures. More information is included in the LMP.

	<ul style="list-style-type: none"> • Communities living near landfills and along waste transport routes are routinely impacted by pollution from the SWM sites and its operations. These impacts include air pollution from burning of waste and vehicle exhaust; noise pollution from trucks; and pollution of water sources. • There is also risk of Gender Based violence due to labor influx. • There is lack of controlled access to dangerous areas in landfill sites, which may pose risks to the health and safety of waste-pickers and other members of the surrounding communities. • Communities have limited awareness of their role and responsibility in good solid waste management, waste segregation, waste reduction, and recycling (3R). Burning of waste and dumping in open spaces and water courses are common practices. Public awareness campaigns are limited.
Public Health and OHS	<ul style="list-style-type: none"> • Poor operation of the landfills and poor waste placement result in dangerous conditions on landfill cells where unstable waste masses are prone to collapse, posing risks to sanitation workers, waste-pickers, and surrounding communities. • Lack of training, awareness, and provision of safety equipment (PPE) put both sanitation staff and waste-pickers at risk. • Illegal dumping of hazardous waste, in particular hospital waste, on the landfill put the health and safety of workers and waste-pickers at risk. • Poorly operated transfer stations and transport equipment pose risks to health and safety of sanitation workers and waste-pickers.

Though the project will reduce pollution and protect and improve the environment, it is possible that potential environmental and social impacts and risks may still arise with varying degrees during the specific activities of the project. Since many specific activities in this project need to be determined during the implementation process, this framework document only makes a qualitative analysis of environmental and social risks and impacts based on the existing preliminary suggestions of the project. Detailed analysis, assessment and rating of potential adverse environmental and social risks will be undertaken under subproject-specific environmental and social due diligence.

This project is composed of three (3) components, which are: (1) institutional and policy development at national level, (2) Capacity Building for the Participating Municipalities, and (3) Solid Waste and Plastic Management Infrastructure. Component 1 and Component 2 mainly include technical assistance activities which will inform and support site-specific investments (civil works and equipment installation) under Component 3, and might also trigger downstream activities as discussed in the following section. Component 3 focuses on civil construction or equipment installation works.

4.1.1 Technical Assistance (TA) Activities

The technical assistance activities of this project include Component 1 (Development and Strengthening of National Legislative, Regulatory, Policy, and Institutional Frameworks for Solid Waste and Plastic Management) and Component 2 (Integrated Solid Waste and Plastic Management, Planning, Monitoring and Capacity Building for the Participating Municipalities).

Component 1 will focus on the following strategic priorities for SWM and plastics: (i) regulatory/legislative framework, solid waste sector monitoring, and regulatory oversight; (ii) policy development related to waste reduction and plastic waste management; and (iii) institutional capacity building.

Component 2 is for municipalities/districts that meet the agreed eligibility criteria. It will support the participating municipalities in the following areas: waste and plastic management

planning; establishment of waste information system; operational management support; support cities to identify and prepare targeted investments and to improve the performance of private solid waste collection services and increase financial stability of solid waste management through sub-national administration regulations and waste fees. Public awareness and citizen engagement activities will focus on (plastic) waste reduction and will also include training to make sure the use of participatory techniques for community engagement plus measures for the re-employment and development of alternative livelihoods for waste-pickers working in some of the project locations.

The proposed technical assistance activities require no civil construction works. However, establishment of policies and regulations under Component 1 and Component 2 may lead to downstream activities such as promoting plastic waste recycling, composting, reduction of plastic packaging, construction of processing facilities, promotion of alternative products or technologies, or others.

The improvement of domestic waste classification, collection, transportation, treatment and disposal will reduce waste and plastic pollution and produce positive environmental benefits. But, these downstream activities might have potential environmental and social risks and impacts, which are expected as 'Moderate' or 'Substantial'. Within the TA activities, the requirement for analysis of potential and social impacts will be considered within the scope of the technical assistance. In cases where particularly vulnerable groups, such as waste-pickers may be affected, specifically children and women, potential downstream impacts on these vulnerable groups will be assessed and these impacts will be included in assessment and consultations on relevant TA activities including CSOs/NGOs supporting / working with these waste-pickers.

Production and operation of some enterprises may be affected, which can lead to a job transfer or unemployment of the related employees. Meanwhile, it is necessary to focus on the indirect and cumulative impacts of the downstream activities related to technical assistance.

The publicity and education, communication and training, solid waste information platform, performance evaluation and other contents in Component 2 are capacity strengthening activities. They do not involve any physical engineering contents such as civil construction or facility installation. No downstream activities will be caused by them, so there will be no direct or indirect environmental or social impacts.

All the TA activities of institutional capability improvement need to conduct effective consultation with the stakeholders. Insufficient stakeholder engagement may cause imperfect management of related impacts and risks to aggravate the downstream impacts and risks generated by the TA activities. The inadequate engagement of the stakeholders possibly causes low sorting efficiency of domestic waste, and implemented plan's failure in solution to the actual problems.

4.1.2 Infrastructure and Equipment Investments Activities

Targeted priority lower-costs SWM investments for participating municipalities will be provided under Component 3. This includes construction of solid waste and plastic management infrastructure for proper collection, transfer, treatment/recycling, and disposal of solid wastes and plastics, including landfills, transfer stations, and intermediate waste

treatment facilities such as material recovery facilities and composting facilities, including potential access roads as well as remediation of contamination of existing dumpsites.

The preliminary identified municipalities foreseen to receive investment financing under Component 3, are (a) Siem Reap, (b) Kampong Speu, and (c) Kandal. This will be reconfirmed during the first year of project implementation on the basis of meeting the eligibility criteria.

Environmental Risks and Impacts

Siting. The main environmental risks related to locations for transfer stations, waste treatment/recycling such as the composting and material recovery facilities and landfill facilities can be mitigated through the siting process. The siting process is there to analyze site suitability for a range of environmental criteria to ensure that there are no/minimal impacts to water resources and environment. For this landfill siting assessment, 24 screening criteria are being applied and include key environmental and social aspects. The full list is provided in **Annex C**. The criteria are divided into five (5) categories:

1. Transport (including distance from service area and access road conditions);
2. Physical site conditions for landfill and waste treatment development (Geotechnical / hydrological / hydrogeological);
3. Current land use, ownership and development zoning;
4. Social impacts, safety and acceptability;
5. Environmental and cultural heritage

Details on the status of site suitability are in the following sections. The material recovery facilities and composting facilities are foreseen to be located at the landfill site and therefore the site suitability assessment applies to all of these facilities. For transfer stations the general environmental and social impact and risks occur during the operation stage and siting is less critical as the waste does not remain at that location but is only sorted and transferred.

Construction:

For solid waste sorting and transfer stations, at the construction stage there is a risk of damages and disturbance to surface vegetation, as well as generation of construction wastewater, dust, noise and solid waste. There are also safety and health risks of the construction workers, including the risk of COVID-19. These risks are considered moderate as the main risks for sorting and transfer stations are occurring during operation stage. Risks mitigation measures will be identified and consulted during the site specific ESIA and ESMPs including sub-project SEP and LMP.

The closure and rehabilitation of the existing dumpsites as well as the construction process for new landfills and treatment facilities such as composting and material recovery facilities can cause direct environmental impacts. Potential adverse impacts include: (i) impacts on flora and fauna, loss of habitat, impact on cultural resources, etc., which might occur due to improper site selection if located in an environmental sensitive area; (ii) air and noise pollution from earthworks and movement of materials and heavy equipment and construction camp (if present); (iii) soil and water resources pollution due to accidental spillage of oil and other lubricants from using and washing of construction equipment and discharge of domestic sewage at construction camps; (iv) destruction and disturbance of surface vegetation and/or river water bodies during the construction period; (v) accumulation

of construction wastes and (vi) failure to ensure occupational health and safety of workers (including the risk of COVID-19); and (vii) the risks of material transportation and mechanical operation to the personal safety of surrounding communities. The environmental risk rating is substantial for landfills and landfill rehabilitation during the construction phase and substantial for material recovery facilities and composting facilities and site specific ESIAs and ESMPs including sub-project SEP and LMP will be undertaken.

Preliminary Mitigation measures for Environmental Risks – Construction phase

Impact	Description	Preliminary Mitigation measures
Air quality	Civil works will be required in case of closing/rehabilitation/ extension of existing dumpsite, development of new landfill, MRF, composting facility, access road, and other facilities. Construction activities can cause temporary ambient air pollution.	<ul style="list-style-type: none"> • Monitoring of air quality in residential areas during construction phase to be put in place • Limit construction hours (day times) • Stabilize the exposed surfaces • Minimize activities that suspend dust particles • Apply water to the areas to be excavated, loading and unloading areas and unpaved roads • Develop a wheel wash at the entrance to public roads or exit of the landfill construction site • Implement speed controls on-site • Maintain enough loading capacity of lorries and barges to avoid spillage • Cover soil stockpiles with erosion control blankets • Use hoarding to avoid wind-blown dust • Apply good construction practices
Noise	Civil works will be required for closing/ rehabilitation/ extension of landfill, development of new landfill, MRF, composting facility, access road, and other facilities. Construction activities can cause temporary noise pollution.	<ul style="list-style-type: none"> • Generally, it is expected that the noise will not be high enough to interrupt sleep or disrupt normal activity. • It is anticipated that construction activities will not be operational during the late hours; therefore the impact on evening averages of ambient noise will be little. • Optimize the use of machines and noisy equipment • In case of receiving complaints from neighboring areas regarding noisy operations acoustic barriers can be placed • Construction works should be stopped at night-time;
Storage of excavated soil	Soil will need to be excavated for the development of new cells or side embankments	<ul style="list-style-type: none"> • The area allocated for soil storage should be selected so that no un-favored pattern of surface water collection should be developed (e.g. stagnant water ponds for long times). • Ensure that the height of the spoil will not cause unaccepted visual impacts to adjacent areas • Use excavated soil in the landfill development or usage in establishing side embankments for containing the waste. • Use excavated soil for coverage for closing of old cells (re-cultivation layers of the final cover) • Soil excavated in the direct vicinity of the existing dump site has to be sampled to assess the extent of contamination. If found contaminated, it shall only be used for daily operation
Water Quality	Accidental spillage of hazardous chemicals and materials	<ul style="list-style-type: none"> • Store all hazardous materials in a dedicated bunded storage area constructed and permitted in accordance with the relevant regulations • Vehicle oil changes and refueling to take place only at designated areas

		<ul style="list-style-type: none"> Any wastewater containing fuels, chemicals and other lubricants to be collected, stored and disposed of in accordance with relevant hazardous waste regulations Surface water management sub-plan to be developed. This is to describe surface water systems and drainage structures to be installed during construction phase
Waste and Hazardous Materials	<p>Non-hazardous waste from general construction waste and domestic waste from workers</p> <p>Hazardous waste streams from use of fuels, oils</p>	<ul style="list-style-type: none"> Avoid or minimize the generation of waste materials Construction wastes could potentially be used in the landfill construction or properly disposed after cell construction is complete Designate a waste storage area with provision for waste segregation prior to disposal Store all hazardous materials in a dedicated bunded storage area constructed and permitted in accordance with the relevant regulations and destruction in line with relevant hazardous waste regulations Vehicle oil changes and refueling to take place only at designated areas Ensure that spills kits are provided through the construction site, and that people are trained in their usage
Construction traffic	Increased construction traffic in an uncontrolled setting	<ul style="list-style-type: none"> Controlled access arrangements to be put in place around any active construction site All truck drivers to demonstrate that they hold the correct licenses and training certification for the class of vehicle they are operating All speed limits and road rules for vehicles to be enforced Traffic control points to be implemented at all entry and exit points to ensure that uncontrolled pedestrian and motorbike interactions are limited Implement the grievance procedure such that community members can notify the sub-project if any project vehicles have been driving in an unsafe manner Emergency response procedures are to include procedures for motor vehicle accidents

Operation:

For the operation of additional collection of solid waste, the environmental impacts are mostly positive as waste will be collected which is currently not collected.

The operation of waste collection and vehicles is different from conventional vehicles and traffic measures required. For the operation of sorting and transfer stations, there is the risk of discharge of wastewater, noise and solid waste. There can also be safety and occupational health risks of waste workers, including high temperature, falling, safety of machine operation, exposure to hazardous waste, and risk of breathing harmful gases, etc.; The risk for transfer stations is preliminary classified as moderate and for the sub-projects. However, E&S risks and impacts will be assessed as part of the site specific ESIA/ESMP including sub-project SEPs that will be developed, disclosed and consulted before the start of civil works activities.

The operation of the solid waste management facilities constructed (landfill, composting and material recovery facilities) or rehabilitated under the project may cause several environmental impacts which might be associated with: (i) generation of leachate, landfill gas, litter and dust, which might bring about the local proliferation of flies, rodents and other

disease-carrying vectors; (ii) inadequate closure of dumps could lead to uncontrolled emission of waste gases, waste burning, and the exposure of deposited waste to the atmosphere and affect air quality; (iii) poor leachate control in both closed and new waste management facilities, which could adversely impact groundwater and surface water resources and pose a human health hazard (via contaminated drinking water); (iv) poorly executed waste cover, which could contribute to the spread of pests and disease-carrying vectors; (v) improper occupational health and safety systems, which might cause risks to safety and health of operators/workers; (vi) malfunctioning of equipment, which might cause the risk of contact with hazardous waste and harmful gases inhalation; (vii) the traffic interference of vehicles and improper roadway safety, which might cause risks to surrounding communities, and the risks caused by production accidents; and (viii) inefficient use of energy and other resources, greenhouse gas emission, etc. Risk rating is high for the landfills and substantial for the composting and material recovery facilities and site specific ESIA/ESMPs will be undertaken for each of the sub-projects, including accompanying SEP.

Impact	Description	Preliminary Mitigation measures
Landfill leachate	Existing dumpsites in Siem Reap, Kampong Speu and Kandal all lack leachate collection and treatment systems, thus causing severe pollution to the environment. Project will strongly reduce pollution due to rehabilitation/closure of existing sites.	<ul style="list-style-type: none"> • Lining and Leachate Collection System • Waste placement and daily cover • Leachate Reduction • Leachate Treatment Plant • Ensure access to safe water supply for local communities • (Ground)water quality monitoring
Landfill gas	Existing dumpsites in Siem Reap, Kampong Speu and Kandal all lack gas collection and treatment systems, thus causing air pollution. Project will significantly reduced emissions.	<ul style="list-style-type: none"> • Landfill Gas Collection and Treatment (flaring) • Composting facilities
Ecosystems, water, biodiversity	All current sites are developed and operated as open dumpsite, without any measures in place to prevent pollution. Some potential sites are located in sensitive areas of high ecological significance.	<ul style="list-style-type: none"> • Thorough site assessment process to prevent sites to be located in sensitive areas • Daily waste coverage • Leachate collection and treatment system • Installation of lining systems • Zoning of vital habitats and ecosystems • Monitoring of species presence and pollution • Flood protection measures • Not accepting hazardous waste
Odor	Existing sites in all three cities cause significant odor due to operations as open dumpsite. Project activities will significantly reduce odor compared to current status.	<ul style="list-style-type: none"> • Daily waste cover, • Use excavated soil in daily operations: usage as daily cover of waste • Installation of gas collection and treatment system • Material recovery and composting facility
Hazardous waste	Currently no monitoring of disposal of hazardous waste at existing sites. Reduced risk for disposal of hazardous waste mixed with municipal waste due to improved operations and regulations	<ul style="list-style-type: none"> • Municipal regulations for landfill operation to provide a list of acceptable and nonacceptable waste. Non-acceptable waste needs to be strictly forbidden from admission • Awareness to avoid a mixing of waste • All workers to be provided with protection equipment, training in waste handling, and strict supervision.

		<ul style="list-style-type: none"> • Prepare emergency response plan
Visual impacts and aesthetics	<p>Rehabilitation of the current sites and mitigation measures (incl. daily waste coverage) will lead to improvements in current aesthetics, particularly affecting nearby communities</p> <p>Visual impacts from landfill to neighboring communities</p>	<ul style="list-style-type: none"> • Daily waste coverage • Windbreak trees • Fencing of site and buffer zone with tree screening to reduce visual impacts • Maximum height of waste disposal to reduce visual impacts
Increased waste truck traffic	Increased waste trucks traffic	<ul style="list-style-type: none"> • All speed limits and road rules for vehicles to be enforced • Traffic control points to be implemented at all entry and exit points to ensure that uncontrolled pedestrian and motorbike interactions are limited • Implement the grievance procedure such that community members can notify the sub-project if any project vehicles have been driving in an unsafe manner • Emergency response procedures are to include procedures for motor vehicle accidents • Procedure for waste spills from trucks
Impacts after Landfill Closure	<p>In case of development of new landfills, if the closure of the existing dumpsites is done by GOC, this would be regarded as an associated facility and will require adherence to WB ESF. Key environmental impacts without adequate closure include air pollution due to continuing waste decomposing processes, risks of open fires, and contamination of groundwater due to uncollected leachate. Closure of the existing dumpsite (or integration into the new landfill) is needed to ensure that the new landfill will receive waste as for the new landfill there will be an applicable gate fee while the current open dumpsites allow free dumping.</p>	<ul style="list-style-type: none"> • Final closure cover: final closure cover is key to reduce and prevent water pollution from leachate as well as minimizing odour impacts, landfill gas generation, visual impacts, disease vectors, and prevention of slope collapsing. • Final capping system be installed progressively through time after the waste has been placed to its ultimate level over each cell or portion thereof. • Establishment of impermeable linings may be considered, as well as development of alternative water sources for surrounding residential a • Measures to minimize remaining leachate after closure will depend on detailed assessments on groundwater pollution, soil permeability, and impacts on any nearby residential areas.

Social Risks and Impacts

Potential social risks for this project include:

(i) **Construction.** Potential conflict among communities - Communities may disagree to the rehabilitation of existing dumpsites located close to them. They may also disagree with the planned construction of a new landfill, especially if it will be located close to them.

(ii) **Construction** Possible resistance among waste-pickers – Despite its good intentions and anticipated positive impacts, some waste-pickers may consider the project as a threat to their current source of livelihood. They may think that the project will limit their activities or, worse, prevent them from continuing with their current activities. Waste-pickers are also considered non-legal workers.

(iii) **Construction.** Physical and economic displacement from land acquisition and/or imposition of restrictions on land use/access – Physical displacement refers to loss of residential land or shelter and/or relocation, while economic displacement pertains to loss of land, assets, or access to assets, leading to loss of income sources or other means of livelihood.¹³ The project may require the acquisition of land or cause to impose restrictions on the use of or access to land, causing temporary or permanent economic displacement to specific stakeholders

(iv) **Construction.** Competition over local utilities, services, and resources - The influx of workers and other individuals seeking to benefit from the potential economic gains from the project may strain the current resources of the host municipalities. The influx of individuals may also cause competition over basic facilities and services as well as Sexual Exploitation Abuse and Sexual Harassment (SEA/SH) as a result of labor influx. There can also be a risk for Indigenous Peoples with influx of workers.

(v) **Construction:** Improper management of negative environmental impacts from the project's construction– Activities during the project's construction are not expected to result to adverse impacts to the environment, but may pose risks to the health and safety of workers and community members alike. For the construction phase, these adverse impacts include noise, air, and water pollution; accidents caused by the operation of heavy machinery and by increased vehicular traffic and associated risks linked to road accidents specifically for landfill construction in closer vicinity to communities; and possible spread of infectious and vector-borne diseases caused by the influx of workers and other individuals seeking to benefit from the potential economic gains from the project and by the disturbance of vegetation.

(vi) **Construction.** Potential risk of weak public participation and public information disclosure – which can lead to waste-pickers and neighboring communities insufficiently informed about the Project, the options for landfill locations being assessed and suitability of different sites and environmental and social mitigation measures of sanitary landfills.

(vii) **Operation.** Risk of further marginalization of vulnerable groups – Physical and economic displacement resulting from the project may further marginalize vulnerable sectors. Hiring processes/policies may not be fair and inclusive, creating bias against vulnerable groups, such as women or other adults with limited educational background. Workplace conditions may not be compliant with local laws and policies, as well as with international standards. Women, children, and the elderly, most especially, may be forced to work or continue with waste picking under unsafe work environment or arrangement,

(viii) **Operation.** Improper management of negative environmental impacts from the project's operation phases – For the operation phase, there are also risks of adverse impacts in terms of noise, air and water pollution, accidents and potential road accidents for the waste trucks.

¹³ Definition lifted from ESS5.

Social Risks – Pre-construction and construction phase

Risks	Description	Preliminary Mitigation measures
Resettlement, economic displacement and livelihoods impacts	<p>This may include impacts on waste pickers at the existing dumpsite; livelihood impacts on children; impacts on landowners; impacts on nearby communities.</p> <p>Children waste pickers specifically under 14, cannot be permitted to participate in waste recycling activities and will require livelihood restoration support and further livelihood support options</p>	<ul style="list-style-type: none"> • General impact on waste pickers impact will be positive as waste pickers will continue to have access to the waste resources under improved Occupational, Health and Safety conditions. • Meaningful consultations with neighbouring communities, waste pickers and other potential affected people a potential site • Development of Resettlement Plan and Livelihood Restoration Plan and monitoring of implementation • Priorities site options that ensure continued access to waste resources for waste pickers • In case of lost access to waste resources provision of Livelihood restoration assistance • Livelihood support options for children waste pickers as per the Resettlement Policy Framework and Livelihood Restoration Framework and the ESF. • Ensure awareness of job opportunities within surrounding communities and consideration for vulnerable groups through further livelihood support activities
Temporary job opportunities	Rehabilitation and extension works at the existing dumpsites and construction of other waste facilities can provide job opportunities for residents of nearby villages and towns. In all cases, residents living in the vicinity are already engaged in the local recycling sector.	<ul style="list-style-type: none"> • To maximise the job benefits for the local population, efforts should be made to ensure that these opportunities are known to the local population, which could consist of transparent information sharing about upcoming job opportunities and exploring of opportunities to encourage local firms as part of consortia for construction tenders.
Community Health and Safety and OHS	<p>Rehabilitation and extension works at the dumpsites and construction of other waste facilities can have negative impact to neighboring communities health and safety including impacts of influx of workers; strain on local resources; and accompanying risks to SEA/SH.</p> <p>Risk of insufficiently applied OHS practices</p>	<ul style="list-style-type: none"> • Supervision of the construction works and clear obligations and code of conduct for firms. • Regular information on progress and Environmental and Social compliance for local communities • Establishing a clear grievance redress system • Monitor labor management procedures • Communicate information about the hours of construction with the local population • Supervise application of OH&S regulations and code of conduct on SEA/SH • Public hearings and meaningful consultations. • Restriction from access to the construction site

Social Risks – During operations phase

Impact	Description	Preliminary Mitigation measures
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Community Health and Safety and Occupational Health and Safety	Rehabilitation and extension of current dumpsites into engineered landfills, or closure of existing sites and development of new sites, will greatly reduce pollution related health and safety risks for neighboring communities and workers due to improved OHS practices.	<ul style="list-style-type: none"> • The application of modern landfill operations and inclusion of performance indicators for landfill management and operation performance in contracts, for instance waste compaction and daily soil coverage, will limit the potential for the development of resident populations of vermin and pests • Landfill gas collection and composting to remove larger part of the organic fraction • Leachate collection and treatment • Lining system and daily waste cover and in case of closure final waste cover • Fencing of site, registration procedures • Integration of waste pickers into the waste material recovery and composting facilities through provision of PPE, training and adherence to OHS procedures • Provision of appropriate PPEs and training • Health checks • Provision of safe water supply to surrounding communities • Showers, washing basins, clean toilets, changing rooms, etc. at facilities
Job opportunities	The project is foreseen to created various job opportunities particularly for villages in close vicinity to the landfills. This may include jobs for daily operations at the landfill, waste sorting at the material recovery facility, composting facility, collection, and other areas along the waste management chain. Operations will require jobs for various backgrounds and qualifications including for poor people with low and medium skills	<ul style="list-style-type: none"> • Ensure awareness of job opportunities within surrounding communities and consideration for poor and vulnerable groups. • Transparent information sharing about the created job opportunities particularly in local areas • Local sourcing of supplies and materials whenever possible
Impacts on property value	The project foresees a wide range of measures that will positively affect land prices around the existing dumpsites.	<ul style="list-style-type: none"> • Gas collection and treatment • Leachate collection and treatment • Lining system • Daily waste cover or in case of closure final waste cover • Waste sorting • Fencing and buffer zones

4.2 ENVIRONMENTAL AND SOCIAL RISK/IMPACT MANAGEMENT

4.2.1 Risk/Impact Management

According to the preliminary qualitative analysis, some subprojects may cause a wide range of significant environmental and social risks and adverse impacts on the population and environment. As for the detailed environmental and social impact analysis of each activity, it is needed to carry out screening and assessment for specific activities and prepare

corresponding documents in accordance with the procedures and requirements specified in this framework in the project implementation process.

The overall social risk is categorized as “High” due to the low borrower capacity on solid waste management, plus the available mitigation measures to restore and improve the livelihoods of the vulnerable groups (such as waste-pickers) are less reliable since they are considered informal users and their livelihood activities are considered illegal or unrecognized. Specific citizen engagement and consultations will need to be undertaken and special attention will need to be paid to impacts on waste-pickers, many of which are women and children.

The overall coordination for the civil works will be ensured by the responsible Ministry of Public Works and Transport for the construction of landfills, treatment facilities and transfer station. The Ministry of Interior as Executive Agency and at the local government level will also take responsibility in ensuring that this framework will be supported.

For Technical Assistance Activities the requirement for analysis of potential and social impacts will be considered within the scope of the technical assistance. In cases where particularly vulnerable groups, such as waste-pickers may be affected, specifically children and women, potential downstream impacts on these vulnerable groups will be assessed and these impacts will be included in assessment and consultations on relevant TA activities including CSOs/NGOs supporting / working with these waste-pickers.

For the infrastructure and equipment investments activities and construction & operation, for the sub-projects site-specific ESIA, ESMPs and SEPs will be prepared and RPs and LRP in case of physical or economic displacement

Table 4.2-1 describes the risks and related risk management actions required for the different type of sub-projects.

Table 4.2-1: Indicative Activities Environmental and Social (E&S) Risk Classification and E&S Management Tools

Activity	Risk rating	Definition	Applicable E&S Tools
Landfill rehabilitation, extension, construction, operation	High	The activities will possibly cause a wide range of significant environmental and social risks and adverse impacts on the population and environment. Some of the impacts can't be mitigated by now, or with special situations such as requiring complex and / or unproven mitigation and/or compensation measures or techniques. There is presence of waste-pickers part of high risk rating definition.	ESIA, ESMP, SEP, Detailed Resettlement Plan ¹⁴ , LMP, IPP etc.
Material recovery, recycling, composting facilities if including land acquisition in residential areas	Substantial	Some of the E&S impacts of the project are possibly significant, but with reliable mitigation and/or compensation measures which are easier to be designed comparing with that of the 'High' risky projects.	ESIA/ESMP ¹⁵ , SEP, DRP, LMP, IPP etc.

¹⁴ As per the definition of the SOP-LAR

¹⁵ Material recovery composting facilities are expected to be placed at the landfill or transfer stations and facilities will be packaged in one contract with one overall ESIA and ESMP, SEP DRP, LMP, IPP etc prepared for the sub-project in the Participating Municipality.

Activity	Risk rating	Definition	Applicable E&S Tools
Transfer stations; material recovery, sorting,	Moderate	The project has potential E&S risks or adverse impacts which are possibly not significant and can be mitigated in predictable ways.	ESIA/ESMP ¹⁶ , SEP, DRP, LMP, IPP etc.
Collection equipment TA activities, including capacity building, policies development, outreach activities, strengthening municipalities in SWM, etc.	Low	The potential adverse risks and impacts on humans and / or the environment may be small or negligible.	E&S screening and inclusion of potential impact as part of the TA

For Siem Reap, a preliminary ESIA and ESMP has been prepared, considering alternatives for the landfill site, the environmental and social aspects of solid waste disposal, solid waste treatment infrastructure, and including social, economic, and cultural surveys for the potential project-affected community at the current open dumpsite and project sites. This preliminary ESIA and ESMP for Siem Reap will be followed by a full site specific ESIA and ESMP to be developed during the project implementation once a landfill site location has been selected and agreed and based on the detailed engineering design and to address specific features of the landfill site to be selected through a consultative and participatory process.

Similarly, for all sub-projects for waste infrastructure, subproject-specific Environmental and Social Impact Assessments and Management Plans for the landfills, transfer stations, material recovery and composting facilities will be prepared, consulted, adopted and implemented in accordance with the requirements of ESS1, once specific landfill sites are determined and agreed through intensive consultations with the stakeholders and PAPs, in accordance with the World Bank ESS10, and detailed engineering designs are at the advanced stage of preparation.

The project will work with municipalities and ministries and help the key agencies in developing and implementing citizen engagement strategies as part of their services. Community and citizen grievance mechanisms will be developed and supported to monitor key indicators and also the improved service delivery for waste collection, for which a specific indicator is included in the Results Framework.

The site-specific ESIA will be prepared in accordance with national legislation and World Bank ESS1, incorporating requirements of other relevant ESSs, and in compliance with the applicable national regulations. The ESIA report, strengthened by the standards of ESS1 of the World Bank as the primary means of documenting the environmental and social sustainability of a project, provides guidance to project decision makers on the environment, as well as social acceptability of the project activities, and permits planning and investment decisions to be made on a comprehensive understanding of the anticipated project impacts.

In the light of key characteristics of the physical, biological, and socio-economic environment of the potential project sites, which are deemed to be of significance in determining the potential impacts of project activities, the site-specific ESIA will identify and evaluate:

- Significant environmental and social impacts likely to arise from project activities;

¹⁶ Material recovery composting facilities are expected to be placed at the landfill or transfer stations and facilities will be packaged in one contract with one overall ESIA and ESMP, SEP DRP, LMP, IPP etc prepared for the sub-project in the Participating Municipality.

- Appropriate measures to minimize potential significant environmental and social impacts;
- An environmental and social management plan to mitigate environmental and social impacts;
- Appropriate compensation for impacts that cannot be mitigated;
- Opportunities for public benefit throughout the lifetime of the project;
- Institutional arrangements to oversee the proposed project activities including the necessary capacity building program; and,
- A comprehensive monitoring program to evaluate the impacts of project activities.

Table 4.2-2: Key National Environmental Standards

Environmental Media	National Standard	International Standard
Ambient air quality	Sub-decree on Control of Air Pollution and Noise Disturbance, 2000 Annex 3, Ambient Air Quality Standard, of	World Health Organization (WHO) Air Quality Guidelines, global update 2005
Noise	Sub-decree on Control of Air Pollution and Noise Disturbance, 2000 Annex 4, Max. Standard of Noise Level Allowable in the Public and Residential Areas, of	WHO Guidelines for Community Noise, 1999
Groundwater quality (for drinking)	Drinking Water Quality Standards, 2004	WHO Guidelines for Drinking-water Quality, Fourth Edition, 2011
Groundwater (ambient)	Ministry of Handicrafts and Industry Groundwater Quality Standards	EU Groundwater Directive 2006/118/EC
Surface water quality	Sub-decree on Water Pollution Control, 1999 Annex 5, Water Quality Standards for Public Waters for the Purpose of Biodiversity Conservation, and Annex 6, Water Quality Standards for Public Waters and Health	US EPA National Recommended Water Quality Criteria Mekong River Commission: Technical Guidelines for the Protection of Aquatic Life Mekong River Commission Technical Guidelines for the Protection of Human Health
Effluent quality	Sub-decree on Water Pollution Control, 1999 Annex 7, Effluent standard (Discharged wastewater to public water areas or sewers)	International Finance Corporation-World Bank Group (IFC-WBG) EHS General Guidelines
Leachate management	No specific law, regulation, sub-decree on leachate standards in Cambodia.	IFC-WBG EHS Guidelines for Waste Management Facilities

Leachate Management/Treatment

Since there are no current national standards for leachate treatment in Cambodia, the IFC-WBG EHS Guidelines on Waste Management Facilities shall be the basis for leachate management for the project.

Based on the IFC-WBG EHS Guidelines on Waste Management Facilities, **Table 4.2-3** lists the recommendations on prevention, minimization, and control of leachate generation in municipal solid waste landfill sites:

Table 4.2-3: EHS Guidelines on Municipal Solid Waste Measures for Leachate Management/Treatment

Landfill Siting
<ul style="list-style-type: none"> • Must have stable geology • Must avoid being near particularly vulnerable/sensitive ecosystems • Must avoid being near groundwater / surface water resources

Design and Operation
<ul style="list-style-type: none"> • Must follow existing national requirements and international standards to minimize leachate generation • Use of low-permeability landfill liners to prevent leachate migration and landfill gas • Use of leachate drainage and collection system • Minimize infiltration by using landfill cover (daily, intermediate, and final) • Minimize the daily exposed portion of the sanitary landfill facility where solid wastes are unloaded • Reduce infiltration of rainfall into deposited waste using perimeter drains and landfill cell compaction, slopes and daily cover materials • Prevent run-on of precipitation into the active area of the landfill by using berms or other diversions¹⁷ • Collect and control run-off from the active area of the landfill¹⁷
Leachate Treatment
<ul style="list-style-type: none"> • Must be done onsite and/or discharge to municipal wastewater system • Treatment methods may include aerated lagoons, activated sludge, anaerobic digestion, artificial wetlands, re-circulation, membrane filtration, ozone treatment, peat beds, sand filters, and methane stripping

Groundwater and Leachate Monitoring

Based on the IFC-WBG EHS Guidelines on Waste Management Facilities, the following measures have been recommended for groundwater and leachate monitoring:

Table 4.2-4: EHS Guidelines on Municipal Solid Waste Measures for Leachate Monitoring

Groundwater Monitoring Wells
<ul style="list-style-type: none"> • Must be installed outside the landfill perimeter • Location and depths must be sufficient to evaluate leachate migration from the landfill into the uppermost groundwater unit • Monitoring network must include one (1) monitoring well in the upgradient groundwater flow direction from the landfill and two (2) monitoring wells in the downgradient direction • Must follow existing national requirements and international standards
Sampling
<ul style="list-style-type: none"> • Measure and record quantity and quality of leachate generated <ul style="list-style-type: none"> ○ Changes in leachate quantity/quality not attributable to weather or other factors may indicate changes in the liner, leachate collection, or landfill cover systems • Monitoring wells must be regularly sampled and analyzed for constituents, selected based on: <ul style="list-style-type: none"> ○ Types, quantities, and concentrations of constituents ○ Mobility, stability, and persistence of waste constituents their reaction products in the unsaturated zone beneath the waste management area ○ Detectability of indicator parameters waste constituents, and reaction products in groundwater ○ Constituent concentrations in the groundwater background

4.2.2 Site Suitability Assessments

A key element of the Environmental and Social Impact Management is the implementation of a through site assessment process. It must be noted that this process is ongoing and expected to continue throughout the first year of project implementation.

The site screening process in general applicable to the Project is based on a two-stage approach: (1) preparation of a modelling and negative mapping process and (2) a series of site visits to ground-truth data and gather new information from walk-over surveys. The

¹⁷ Systems should be designed to handle the peak discharge from a 25-year storm; Run-off is typically treated with leachate from the site (IFC-WBG, 2007)

modelling, negative mapping and site investigations were guided by the Cambodian government Guidelines on Selection of Landfill Sites (2016) and the WB landfill siting criteria.

Landfill Site Screening Criteria

Following the initial round of city assessments and shortlisting, a second more detailed round of investigations were conducted concentrating on screening and suitability assessment of existing landfill sites and potential new sites for landfill development in Siem Reap and will continue to be undertaken for Kampong Speu and Kandal. The second-round investigations for Siem Reap were based on reviews of existing studies, documents and data, information from which was analysed using a GIS modelling and mapping tool. This was followed by a second round of site investigations, meetings and interviews with stakeholders. For Kandal and Kampong Speu and potential other participating municipalities

Both the GIS modelling, negative mapping and site investigations were guided by the WB landfill siting criteria, and the Cambodian government Guidelines on Selection of Landfill Sites (2016). The project team used 24 Screening Criteria which can be broadly divided into five Categories:

- Transport (including distance from service area and access road conditions);
- Physical site Conditions for landfill development (Geotechnical/ hydrological/ hydrogeological);
- Current land use, ownership and development zoning;
- Social impact, safety and acceptability; and
- Environmental and cultural heritage.

The full list of screening criteria are provided in **Appendix C** -.

Landfill Site Screening GIS Modelling and (Negative/Exclusion) Mapping

The project Team created a 'Negative Mapping' model using ArcGIS software to collate data in layers of key information such as watercourses, agricultural and residential areas, protected areas, soil types and topography etc. These layers are used to determine site suitability across the entire city based on a cumulative analysis of the data which is presented to show areas of interest of investigation for a suitable landfill, less suitable areas, and 'no-go' zones where a landfill cannot be located due to being in an area such as a sensitive habitat or cultural heritage site. This same process will be applied for landfill site screening for other potential sites in Kampong Speu, Kandal and possibly other participating municipalities.

The negative mapping process employs powerful ArcGIS software to create an Analytical Hierarchy Process (AHP) incorporating the landfill site suitability screening criteria (above), to screen and rank sites by:

- **Cross tabulation and scoring by ranking:** scoring the identified alternatives/options available for each criteria. The score assigned to each option is the sum of its rankings for each of the applied criteria.
- **Evaluation by Ranking:** because the ranking assigned to each criterion may be based on a different scale, it is necessary to normalize the score to a common basis.
- **Criteria Weighting:** consideration is given to the fact that each of the criterion can differ in importance; thus each is assigned a weighting factor based on its judged importance.

The output of the model includes a visual map of each city and surrounding area with colour-coded Suitability Banding in four categories: **Restricted**, **Less Suitable**, **Suitable**, **Most Suitable**. Each map was presented to the provincial government counterparts at the start of each field visit meeting to visually present areas of interest for investigation and to generate discussion and feedback prior to visiting the potential locations.

While the process will be continued during the first year of the project implementation, below some key available information is presented.

Figure 4.2-1, Figure 4.2-2, and Figure 4.2-3 present the site suitability mapping for Siem Reap, Kampong Speu, and Kandal, respectively.

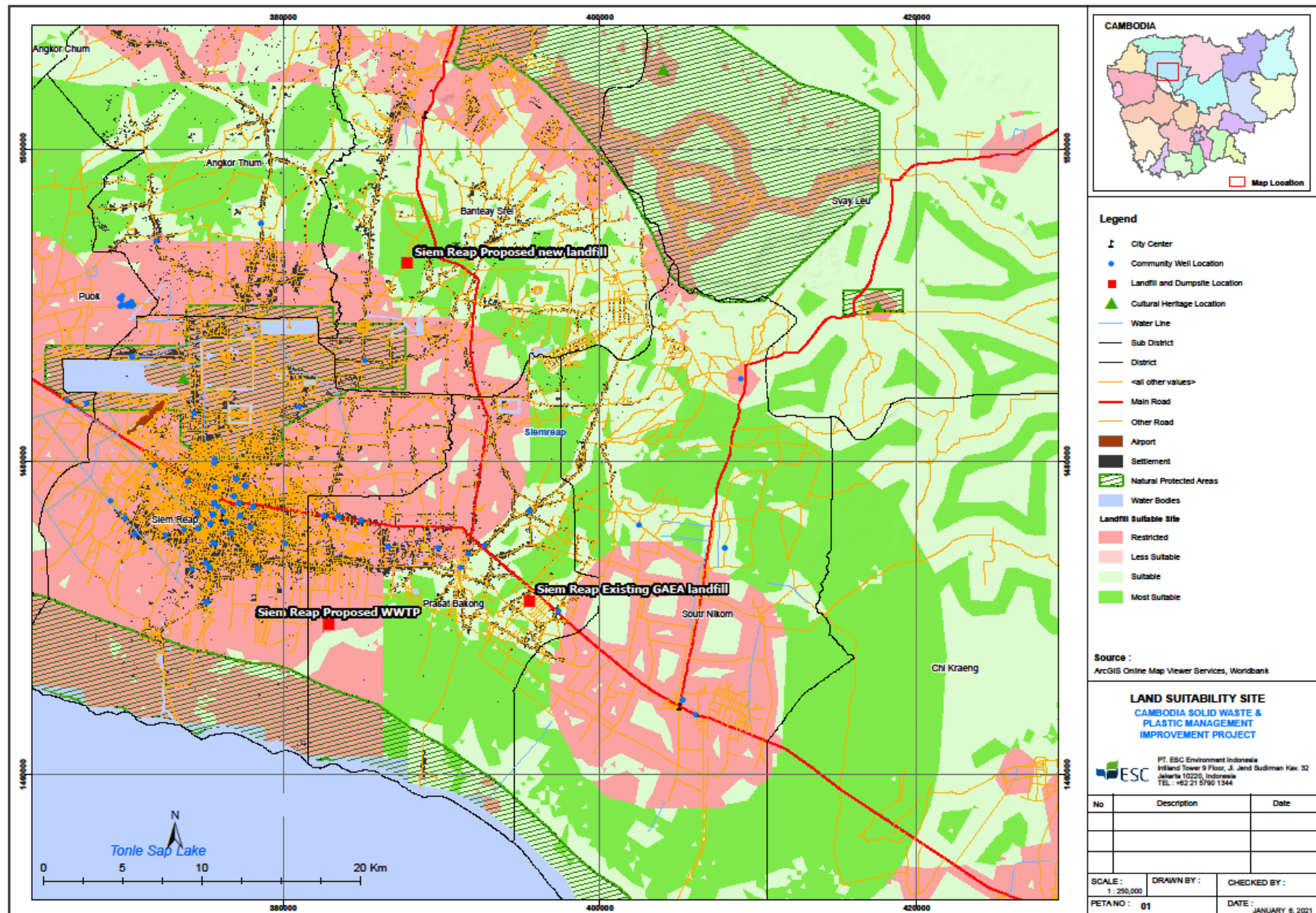


Figure 4.2-1: Site Suitability Map of Siem Reap

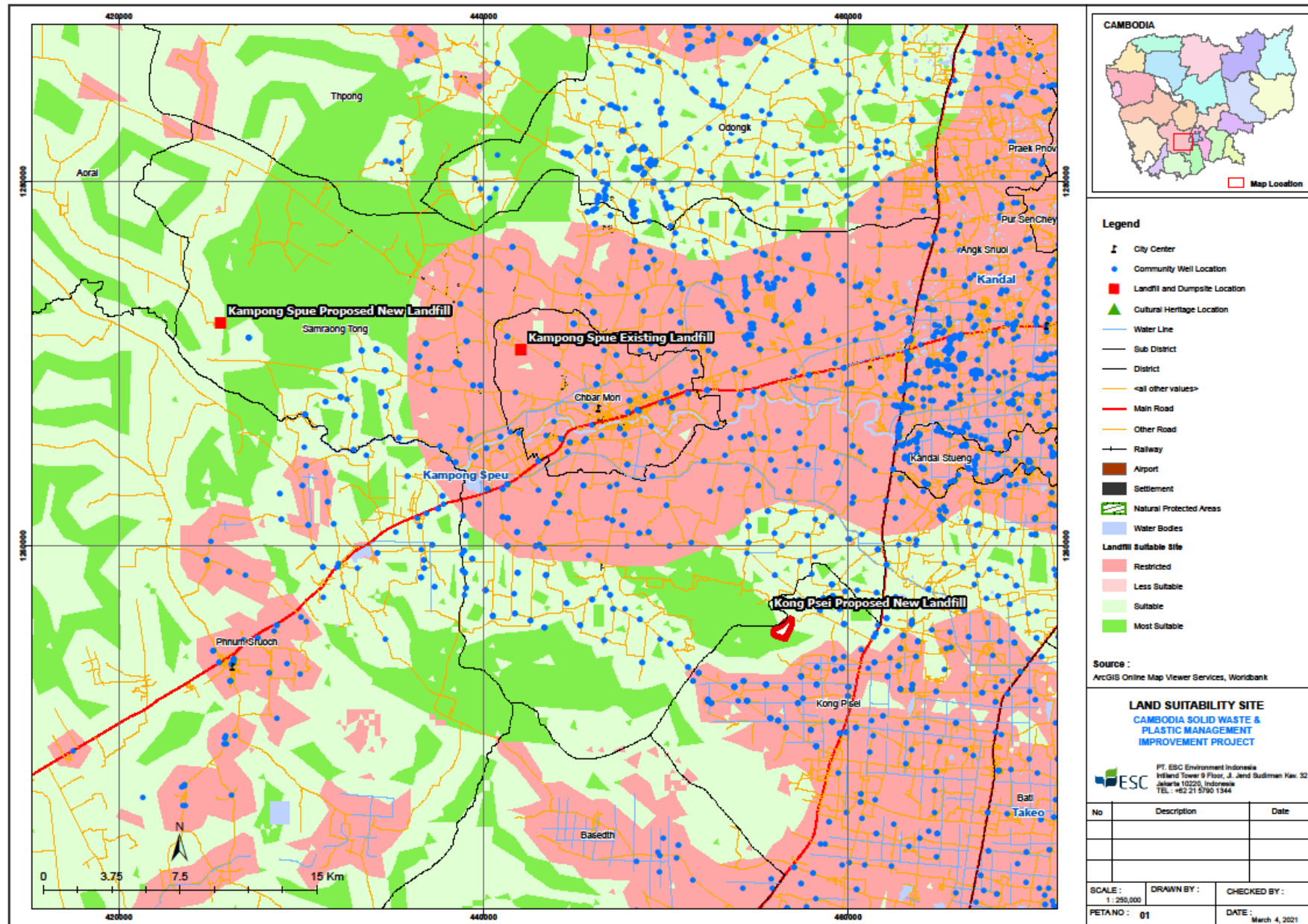


Figure 4.2-2: Site Suitability Map of Kampong Speu

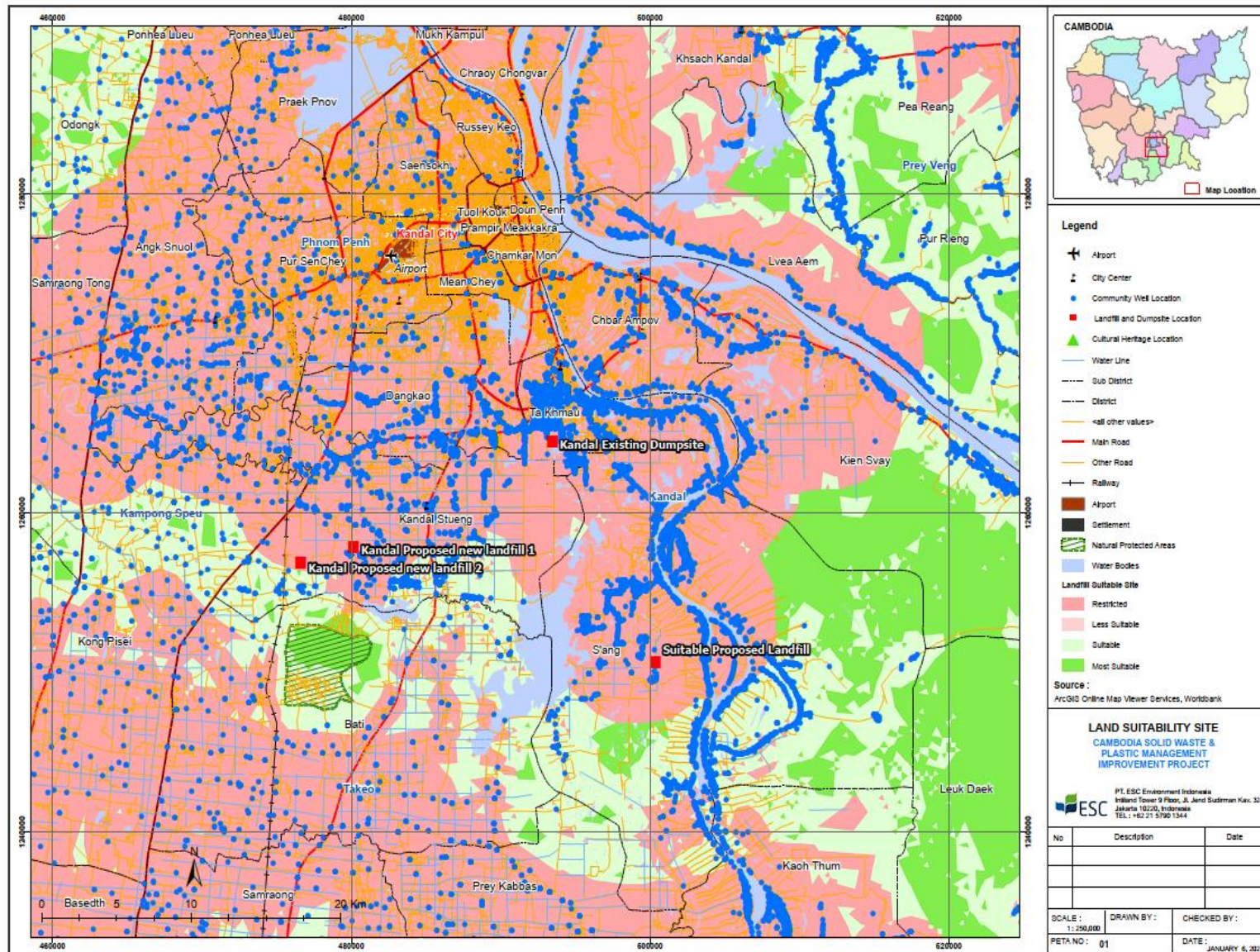


Figure 4.2-3: Site Suitability Map at Kandal

Siem Reap

The existing dumpsite is situated in Anlong Pir Village, Trapeang Thom Commune, Prasat Bakong District, Siem Reap Province, Location 13°18'21.36"N, 104° 2'7.21"E. It occupies a series of worked out quarries across an area of approximately 8 hectares. The site itself is bordered to the east and south primarily by agricultural fields, with the north and west bordered by Anlong Pir Village.



Figure: Existing Dumpsite in Anlong Pir Village, Trapeang Thom Commune

This waste disposal facility has been operating for more than ten (10) years. Around 250 to 300 tons of waste per day are disposed in the existing dumpsite with a reported collection rate of 76%. The land area of the dumpsite measures at approximately 8 hectares, with a 500-m laterite access road from NR

The existing dump site at Anlong Pir Village is currently operating as an open dump. Under a 'Do Nothing' scenario, the Anlong Pir Village dump site will continue to pose a significant environmental, social and public health risk to workers, the surrounding community and the environment. The existing dumpsite is around 200-300 meters away from the closest residential structures, the current existing open leachate pond is even closer. Greenhouse gas will continue to be emitted uncontrolled; uncontrolled leachate discharge will continue; and odour, wind-blown waste and disease vectors (rats, flies, etc.) will continue to affect workers, waste pickers and the surrounding community. The trends, options for improvement of solid waste and plastic management and accompanying risks, opportunities and mitigation measures are outlined below for the two options identified.

For a more detailed assessment of the current dumpsite and options for rehabilitation and extension of current site (Option 1) and potential closure of current site and development of new greenfield site (Option 2) see Preliminary ESIA for Siem Reap.

(1) Rehabilitation of Existing Dumpsite in Anlong Pir Village, Trapeang Thom Commune

Table 4.2-5: Advantages, Disadvantages, and Preliminary Assessment on the Rehabilitation of the Existing Dumpsite in Anlong Pir Village, Siem Reap

Advantages	Disadvantages	Preliminary Assessment
<ul style="list-style-type: none"> Existing site already zoned for landfill use. Additional area available Rehabilitation of the current site may yield further space Existing dumpsite will require closing in any case, therefore cost savings can be made through continued use and site extension Good road access and well located from city service area No flood risk or near environmentally sensitive receptors or cultural heritage sites Not within city expansion area for commercial/residential zones Current pollution will be resolved through rehabilitation A significant proportion of the community is engaged in waste-picking at the dumpsite and will continue to have access to the recyclables but with controlled access and safe working conditions 	<ul style="list-style-type: none"> Communities in relatively close distance (<1.0 km) Part of the community has complained and requested site closure. Current dumpsite has no environmental controls and utilises worked out quarry pits leading to environmental impact on soils, ground/surface water, air etc. Extensive rehabilitation required 	<ul style="list-style-type: none"> The existing dumpsite will need to be closed or integrated in the new sanitary landfills to prevent further adverse environmental impacts and because without closing the existing dumpsite, a new landfill with gate fee will not receive any waste for disposal if an open dump is still around for free. If the closing of the current dumpsite is financed by GOC, it would still be considered as an associated facility to the Project and required adherence to the WB ESF¹⁸. Current environmental and public health issues will be addressed through the Project (leachate treatment; smell; noise; piped clean water supply for communities; etc.) Rehabilitation of the current existing dumpsite would allow waste-pickers, except children, to continue having access to recyclables at the same location and be able to work under improved occupational health and safety working conditions. Community inhabitants may gain additional income through jobs created at the landfill, material recovery, and composting facility. Cost savings would be made through shared site management systems required for closure and extension (leachate treatment system, gas treatment, access control) A more elaborate comparison between options and preliminary environmental and social impacts is included in the preliminary ESIA

(2) Closure of Anlong Pir Dumpsite and Alternative Sanitary Landfill Site Option in Trapeang Tim Village, Kandaek Commune

Location: 13°17'41.19"N, 103°54'41.22"E

New Landfill Site Option is located in Trapang Tim Village, Kandaek Commune, in the Prasat Bakong District of Siem Reap Province. It is located approximately 11 km south-southeast of Siem Reap City center. The potential location is a greenfield site, adjacent to a proposed wastewater treatment plant and surrounded by agricultural land, specifically paddy fields. The nearest village is more than 2 km away to the north. The potential site is currently occupied by scrubland and informal community fishing ponds. The site can be accessed from other parts of the Province via NR6; with the final access along a poor-quality earth/laterite track which, in its current state, would be difficult to navigate during the wet season.

¹⁸ Financing for the clean-up costs and rehabilitation for the closure of the existing dumpsites is included in the Project financing. A some point in time during the WB project will the day to day operation of the dumpsite become subject to ESF requirements and this will be explicitly established in the detailed design and accompanying site specific Environmental and Social Impact Assessment.



Figure 4.2-4: Alternative Sanitary Landfill Site Option in Trapeang Tim Village, Siem Reap

Left image: Drone image of potential site (right), including flood protection bund & rice cultivation area (left)

Right image: Rice fields (right), Flood Protection Bund (centre), landfill site (left)

The site is a flat, low-lying area with a suspected high groundwater table and which may be prone to localized, if not more wide-spread, flooding. The site is underlain by sandy silty clays. There is a flood bund immediately bordering the south of the site, which was built during Khmer times and is designed to prevent seasonal flooding from the Tonle Sap Lake. The site is bounded to the north by land zoned for high value residential development and to the south by the Tonle Sap UNESCO biodiversity reserve. It is also reported that +/- 3 km to the west of the site, the Siem Reap government is planning to build a water supply plant extracting water from the Tonle Sap reservoir.

The Siem Reap government is planning to build a ring road around Siem Reap City that will follow the alignment of the flood protection bund immediately adjacent to the site. This would ensure good access to the site and improved flood protection but may end up encouraging development encroachment into the area around the wastewater treatment plant (WWTP) and landfill site.

The potential site under Landfill Site Option 2 is located in the middle of Zone 2 which is set aside as a protection buffer zone with restricted land use excluding landfill development. Under this option, the landfill site would be squeezed between the city expansion zone and the Tonle Sap UNESCO and Tonle Sap biodiversity reserve.

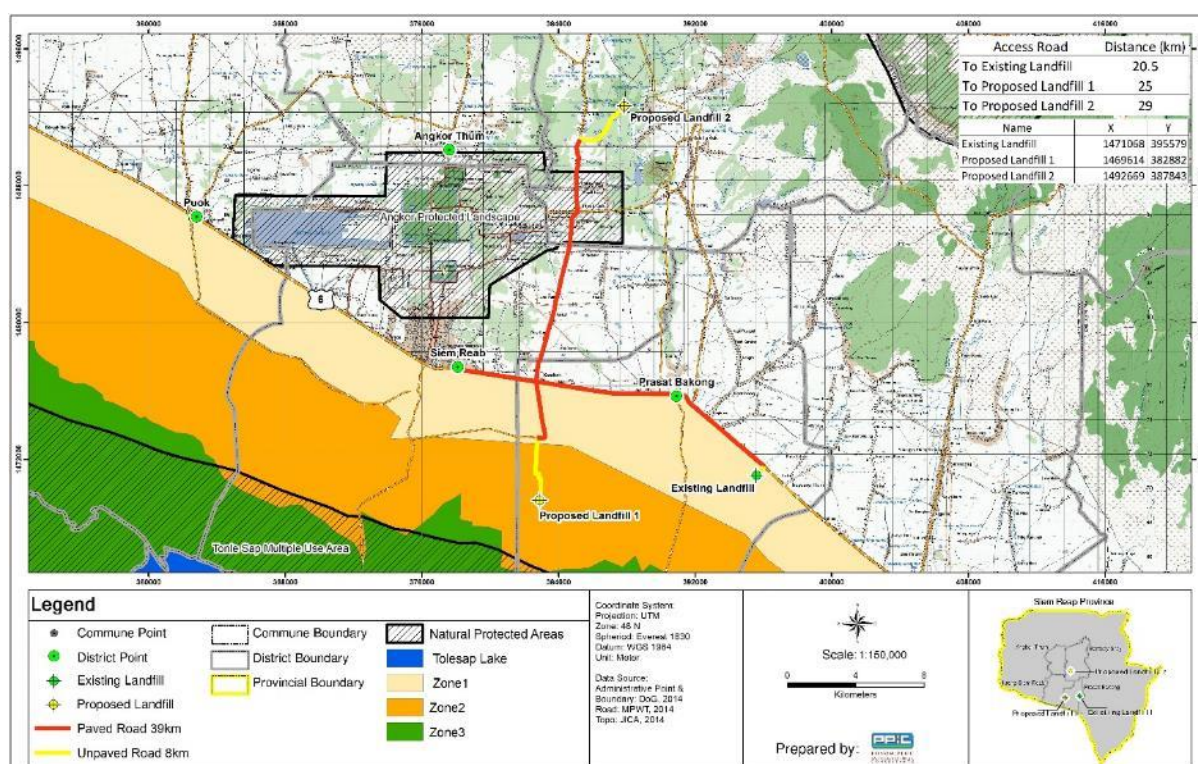


Figure 5: Tonle Sap Biosphere Reserve (TSBR) Zone Map

Table 4.2-6: Advantages, Disadvantages, and Preliminary Assessment on the Proposed Alternative Sanitary Landfill Site in Trapeang Tim Village, Siem Reap

Advantages	Disadvantages	Preliminary Assessment
<ul style="list-style-type: none"> Co-located with the new wastewater treatment plant has advantages: (i) shared land use/zoning; (ii) discharge leachate to and combining it with wastewater; and (iii) WWTP to dispose sludge in Landfill Large area (+50Ha) of public land available. Currently >2 km away from the nearest residential settlement. The site is flat and appears to be underlain by a clayey soil material. Planned ring-road construction, site access will be good, suitable distance (>11 km) from city center. 	<ul style="list-style-type: none"> High value residential city expansion area to the North, Tonle Sap UNESCO biodiversity reserve and restricted development zone (South). The existing site access is in poor condition and passes through dense residential development. Shallow groundwater and potential flood risk area. During the wet season, leachate discharge will need to be stored or pumped offsite. High social costs and risks as current waste-pickers would lose access to recyclables Community Fishery present 	<ul style="list-style-type: none"> The potential new site has advantages from being co-located with the proposed new WWTP and for having an extensive area (+50 ha) available. However the site poses high environmental and social risks and is therefore overall considered not very suitable for development. This is due to being located in a prime residential and industrial development zone, being situated on the edge of a flood zone, being situated within the UNESCO development restriction zone of the of Tonle Sap Biosphere Reserve, and due to the impacts on waste pickers and workers at the existing site.

Kampong Speu

(1) Rehabilitation of Existing Dumpsite in Sampov Village, Sangkat Chbar Mon, Chbar Mon City

The existing main landfill is located in Sampov Village, Sangkat Chbar Mon, Chbar Mon City in Kampong Speu, and can be accessed by earth road, about 0.3 km south of Road No. 44 (DBST). The landfill is not designed or operated as an engineered, controlled or sanitary landfill; therefore, it is considered to be an open dumpsite. The site has been operational since 2013, with waste collection, transportation, and disposal services provided by private waste contractor Vang Seng Green Co., Ltd.

The approximate size is 11 ha, 4.5 ha of which is in operation and the remaining 6.5 ha are rice fields. The current open dump has no environmental controls and there are significant environmental and public health risks resulting from ground/surface water pollution, wind-blown waste, foul odor, smoke from burning waste, vector-borne diseases. The waste leachate is not collected and forms a severe environmental hazard due to surface and groundwater pollution, the produced methane is not collected, and the surrounding environment is being littered due to windblown waste, in particular plastics. There is no site fencing, or access control, allowing informal collectors to reside on and around the site. Waste is also left in open piles in the current open dumpsite with substantial fires. There is no leachate collection or treatment.

The existing waste mass has been extensively burnt. Fires have been started by waste-pickers aiming to recover metals. As a result, there is limited remaining organic content and little sign of any leachate generation. The site is underlain by heavy clay/sand/silts with low permeability.

The site is located close (~10 km) to the central Kampong Speu town in an area zoned for rapid industrial and residential development. The site is currently surrounded by scrub land; however, a high value residential development is currently under construction immediately west and south of the existing landfill. There is no further land available for expansion around the existing site. The current open dump will require extensive rehabilitation to minimize environmental impacts.



Figure 4.2-: Existing Dumpsite in Sampov Village, Sangkat Chbar Mon, Kampong Speu

There are 27 staff members employed by Vang Seng Green Co., Ltd. and approximately 18 waste-pickers working at the dumpsite. Further groundwork assessment is needed to provide detailed information regarding the situation of the waste-pickers.

Table 4.2-7: Advantages, Disadvantages, and Preliminary Assessment on the Rehabilitation of the Existing Dumpsite in Sampov Village, Kampong Speu

Advantages	Disadvantages	Preliminary Assessment
<ul style="list-style-type: none"> • The site has good access to the nearby main (paved) NR44 road and the solid waste service area. • No reported flooding and not close to any environmentally sensitive receptors or cultural heritage sites. • The site is underlain by heavy clay/sands/silts with low permeability and good engineering construction properties. 	<ul style="list-style-type: none"> • Immediately adjacent to a new residential development within a high value commercial and residential development zone. • There is no further land available for expansion around existing site. • A closure and remediation of the existing site would have high social impacts as the current waste-pickers of the site would need to travel to the new landfill site to continue collecting recyclables and require compensation through livelihood restoration project. 	<ul style="list-style-type: none"> • The existing landfill site is located within a high value residential and industrial development zone with insufficient space for extension. • Preliminary conclusion is that most suitable option is to close the site for landfill disposal and potentially develop a transfer station, material recovery and composting facility in this location. • Alternatively to fully close the waste dump and remediate land back to a point where it is suitable for future high value residential or industrial development. This will be a large financial revenue due to increased property value. • In case of full closure, current waste-pickers would need to be integrated into new facilities,

Advantages	Disadvantages	Preliminary Assessment
		provided with access to new site, or other livelihood support • Further analysis to be based on ongoing site identification process

(2) Closing of Sampov Dumpsite and Alternative Sanitary Landfill Site Option West-Northwest of Chbar Mon City

Location: 11°30'29.13"N, 104°19'3.22"E

The area of the potential New Landfill Site No. 1 is located approximately 24 km west-northwest of Chbar Mon City center and about 16 km west of the existing dumpsite. Site access a poor-quality soil/laterite track / unpaved road. There are no utilities (electricity water) within at least 5 km of the site. The exact site and the size/ownership status of the land have not been confirmed yet. Provincial government representatives, however, said that the land would be readily available and there was more than enough to meet the proposed landfill requirements.

The potential site is open, flat, and mixed scrub and agricultural land. Excavations and road cuttings indicate underlying sand, gravel, and clay soil. The site is elevated, has good drainage, and not (reported) flood-prone.

The nearest village is more than a kilometer away. The site is not located near any sensitive receptors, protection areas, or cultural heritage sites.

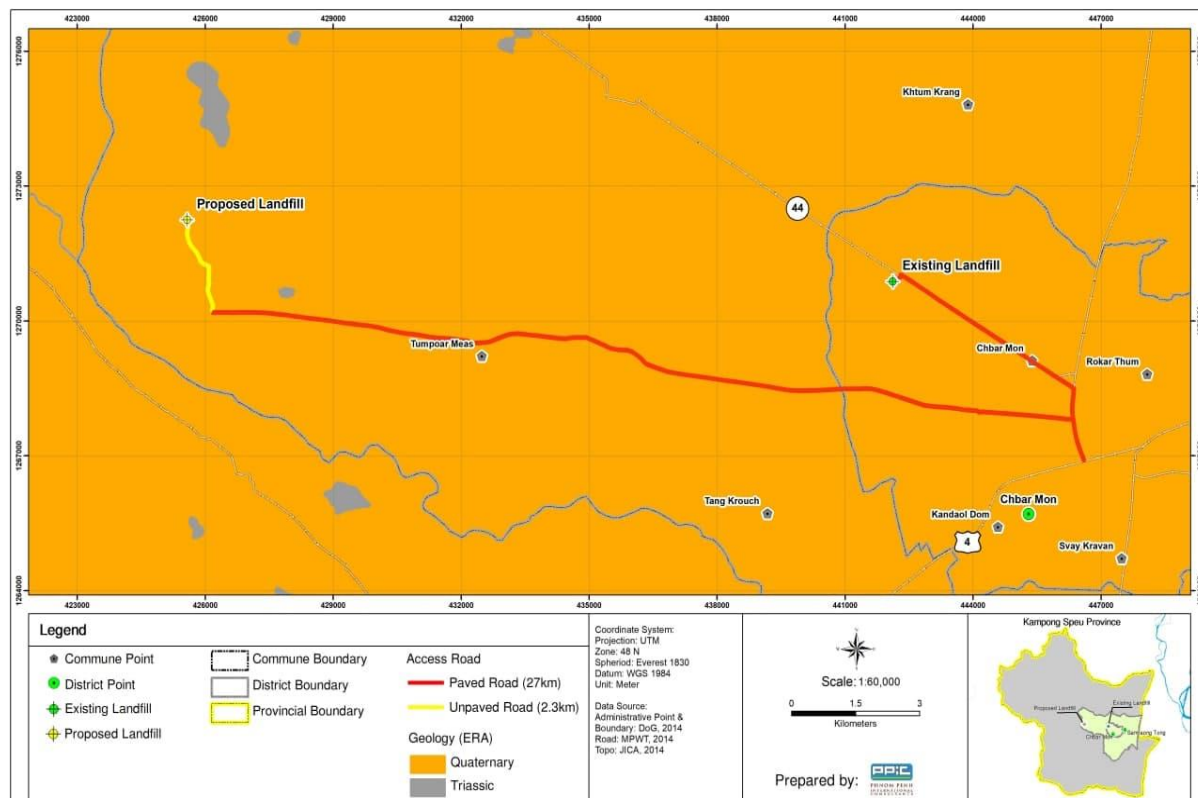


Figure 4.2:- Map of the Existing Dumpsite in Sampov Village, Kampong Speu and Alternative Sanitary Landfill Site Option West-Northwest of Chbar Mon City, Kampong Speu



Figure 4.2-: Alternative Sanitary Landfill Site Option West-Northwest of Chbar Mon City, Kampong Speu

Table 4.2-8: Advantages, Disadvantages, and preliminary assessment on the Alternative Sanitary Landfill Site Option West-Northwest of Chbar Mon City, Kampong Speu

Advantages	Disadvantages	Preliminary assessment
<ul style="list-style-type: none"> Reported deep groundwater and low/no flood risk. The area is relatively remote, with the nearest community >1.0 km away, and away from any future planned urban development. The provincial government reports that extensive area (as much as reasonably required) is available for the landfill development 	<ul style="list-style-type: none"> Far (+10 km) from existing paved roads and no easy access to the site. No utilities (electricity/water) within 5 km of the site. Future access would pass through residential development zone. The area is 24 km from the city centre. The site boundary and ownership has not been clearly defined The travel distance from the existing dumpsite to the new landfill site is large which would constitute large social impacts for the waste-pickers to continue to have access to recyclables at this new location. 	<p>Not suitable due to high cost of access road improvement and accessibility.</p> <ul style="list-style-type: none"> Although the site is suitable for landfill development, the remote location and poor access makes the site not suitable for development.

(3) Closing of Sampov Dumpsite and Alternative Sanitary Landfill Site Option in Kong Pisey District

The area of the potential New Landfill Site No. 2 is located at Kong Pisey, approximately 15 km (direct) from the Chbar Mon City center. However, the site can only be reached by National Highway 4 and National Highway 41, with a combined travel distance of 36 km.



Figure 4.2:- Alternative Sanitary Landfill Site Option in Kong Pisey District, Kampong Speu

The site is a greenfield site located in a valley floor surrounded by mountains, some of which are being worked for quarry materials. There is a small earth dam forming a lake adjacent to the site and a hill overlooking the site is occupied by a Buddhist temple, which would pose issues with ESS8 on cultural heritage. The potential site occupies 61 ha of public land. Currently, there is no land use on the site (limited signs of agriculture, mainly scrub and sparse woodland). There are no community settlements in the immediate surroundings to the site. There does not appear to be any flood risk at the site.

Table 4.2-9: Advantages, Disadvantages, and preliminary assessment on the Alternative Sanitary Landfill Site Option in Kong Pisey District, Kampong Speu

Advantages	Disadvantages	Preliminary assessment
<ul style="list-style-type: none"> Reported deep groundwater and low/no flood risk. The area is relatively remote, with the nearest community >1.0 km away, and away from any future planned urban development. Extensive area (61 ha) is available for the landfill development. 	<ul style="list-style-type: none"> The site is located 36 km, by national road, from the main waste service area. The site is a greenfield site with potential environmentally sensitive receptors including the current spare wood and grassland cover and adjacent lake. The site overlooked by a cultural heritage site; Buddhist Temple. The travel distance from the existing dumpsite to the new landfill site is large which would constitute large social impacts for the waste-pickers to continue to have access to recyclables at this new location. 	<p>Conclusion: Not suitable due to distance from city center and location in an environmentally and culturally sensitive area</p> <ul style="list-style-type: none"> The site is located too far from the city center and waste service area. The site is located in an environmentally and culturally sensitive area and is therefore not suitable for landfill development.

The two (2) potential new sites are both not suitable as they are remote, have site access problems, and/or are located next to environmentally/culturally sensitive sites.

Additional sites will be evaluated in terms of site suitability; this process will not be finalized prior to appraisal and may continue throughout the first year of Project implementation.

Kandal

There were a number of original potential sites identified for Kandal, specifically: the existing dumpsite located in Prekho Village; a more distant site located south-east of Ta Khmao City in Mort Boeung Village, hereinafter referred to as potential New Landfill Site No. 1; and a site located even further to the south-east of Ta Khmao City in Trapang Baku Village, hereinafter referred to as potential New Landfill Site No. 2.

(1) Rehabilitation of Existing Dumpsite in Prekho Village, Sangkat Prekho, Ta Khmao City

The existing main dumpsite is located in Prekho Village, Sangkat Prekho, Ta Khmao City, Kandal Province. The site has been operational since 2015 and CINTRI is the private company contracted to collect and transport solid waste. There is no formal agreement for either the establishment or operation of this site as a landfill. The site is approximately 6 kilometers from Ta Khmao City and can be accessed by earth road, about 0.8 km from the city road. The land is publicly owned and is located within a residential area, with a total reported plan area of 2 ha being operated on government land.

The dumpsite has no management plan and does not operate to any environmental or public health standards associated with a controlled/sanitary landfill; no access control, fencing or security, no weighbridge, no composting plant or material recovery facility, no gas collection or flaring, no leachate collection or leachate treatment plant. There is a small incineration facility without protection. Although there are no (available) plans or designs for the site it does show evidence of some (limited) controlled planning as there is a 2-3 m high earth bund surrounding the main cell and a compacted earth access road runs around the site to the incinerator plant. Historical images of the site show that this is not a worked-out quarry and the existing cells contain waste to a depth of 3-5 m (max.). There is a waste incinerator on the site which was installed by the local government but does not operate to any controlled standards for temperature or emissions. The incinerator has an estimated capacity of 5 tons per day. The site was on fire during both team site visits and shows signs of long-term extensive burning.

Approximately 21 trucks are actively used in collection. An estimated 279 tons per day of waste dumped at the site each day, although there is no accurate record of the waste received, or weight, as there is no access control or weighbridge at the site. The waste are brought to the site and no official sorting is conducted, with wastes dumped in one pile. Solid wastes dumped in the landfill comes from households and business establishments. Burning of wastes is also practiced in the landfill, causing tension with surrounding villages that have complained of respiratory illnesses. No leachate collection or treatment is also in place.

There is one (1) incinerator operation employee, 50 waste-collectors, and approximately 37 waste-pickers working at the dumpsite.

There are approximately 100 scavengers on the dump, two thirds of whom are observed to be children. The scavengers mainly live in a village around the dump with limited access to water and sanitation.



Figure 4.2-6: Existing Dumpsite in Prekho Village, Sangkat Prekho, Kandal

Table 4.2-10: Advantages, Disadvantages, and Preliminary Assessment on the Rehabilitation of the Existing Dumpsite in Kandal

Advantages	Disadvantages	Preliminary Assessment
<ul style="list-style-type: none"> The existing site is already used as a landfill and will require further investment for rehabilitation. The site has good access to a nearby main (paved) road and city service area. Additional land around the site is available. Cost savings can be made through expanding the existing site and shared infrastructure and environmental management systems (E.g. roads, drainage, leachate treatment plant, etc.) with the current cells. The site is not reported as prone to flooding and generally not close to environmentally sensitive receptors or cultural heritage sites. The site (from initial investigations) is underlain with impermeable clays 	<ul style="list-style-type: none"> Site is less than 1.0 km from residential settlements, which are rapidly expanding; community has complained of being directly impacted. Site has shallow groundwater. Current open dump has no environmental controls and will require extensive rehabilitation. The incinerator has no environmental controls. Current waste 'cells' have no liner, leachate collection or treatment, leading to potential pollution of groundwater. A closure and remediation of the existing site would have high social impacts as the current waste-pickers of the site would need to travel to the new landfill site to continue collecting recyclables and require compensation through livelihood restoration project. 	<p>Conclusion: Closure of existing dumpsite with rehabilitation appears the most suitable option.</p> <ul style="list-style-type: none"> The existing landfill site is within a high value development zone. The waste has been extensively burned leaving a low volume of in-situ waste which could be relocated to a new landfill location. The current site can be rehabilitated back to a point where it is suitable for future residential / industrial development with substantial revenues. The current waste-pickers of the site would need to travel to the new landfill site to continue collecting recyclables and require compensation through livelihood restoration project. Alternatively, the transfer station, material recovery facility and composting facility could continue to be located at the existing location with the landfill disposal at a new location. The incineration facility would need to close due to the lack of environmental controls.

These sites have been provided by the municipal government as potential options for new landfill development:

Option a location: 11°23'39.16"N, 104°47'52.89"E

Option b location: 11°24'31.28"N, 104°57'51.47"E

(2) and (3) Closing of Prekho Dumpsite and option for an Sanitary Landfill Site in New Site Option 1 or New Site Option 2

Location (New Site Option 1): 11°23'39.16"N, 104°47'52.89"E

Location (New Site Option 2): 11°24'31.28"N, 104°57'51.47"E

Both sites are not suitable as these are worked out quarries and thus not suitable for development as a landfill. Quarries and excavations that go below groundwater level (majority of cases) will backfill with water. If a liner was provided and the site were below the groundwater level, the inflow of water would lift the liner (when waste is not yet in place) and cause failure points). Even if a stable lined cell could be created in the quarry, because the cell would be below ground level, it would require constant pumping to extract leachate as there would be no gravity flow. Significant engineering and associated cost would be required.



Figure 4.2-: Landfill Sites options 1 (Left) and 2 (Right) in Kandal

Alternative sites are expected to be evaluated for site suitability; these will not be finalized prior to project appraisal and this evaluation may continue throughout the first year of Project implementation.

4.2.3 Technical Assistance Activities

As for institutional strengthening and TA activities, policies and regulations on waste management or plastic waste reduction and recycling may cause some downstream activities occur. For such activities not involving civil construction work, the work outline documents are required to contain the analysis on the potential downstream environmental and social risks and the result reports are required to include specific chapters for description of those potential environmental and social risks and the suggestions on control measures. For those other types of capacity building activities (such as publicity, education, dialog and training, etc.), the detailed content of the activity will be discussed in relation to its relevance with ESF. Once it is determined as being related to the relevant environmental and social standards, the work outline shall be designed accordingly.

4.2.4 Civil Construction Activities

The following environmental and social impact assessment documents of construction projects are envisaged to be derived from the ESMF for this project.

- 1) Environmental and Social Impact Assessment
- 2) Environmental and Social Management Plan
- 3) Labor Management Procedures
- 4) Detailed Resettlement Plan
- 5) Indigenous Peoples Plan (if applicable)

5 ENVIRONMENTAL AND SOCIAL RISK MANAGEMENT PROCEDURE

5.1 RISK SCREENING AND CLASSIFICATION OF SUB-PROJECTS

The technical assistance activities of this project include Component 1 (Development and Strengthening of National Legislative, Regulatory, Policy, and Institutional Frameworks for Solid Waste and Plastic Management) and Component 2 (Integrated Solid Waste and Plastic Management, Planning, Monitoring and Capacity Building for the Participating Municipalities).

The proposed technical assistance activities require no civil construction works. However, establishment of policies and regulations under Component 1 and Component 2 may lead to downstream activities such as promoting plastic waste recycling, composting, reduction of plastic packaging, construction of processing facilities, promotion of alternative products or technologies, or others.

The improvement of domestic waste classification, collection, transportation, treatment and disposal will reduce waste and plastic pollution and produce positive environmental benefits. However, these downstream activities might have potential environmental and social risks and impacts, which are expected as 'Moderate' or 'Substantial'. Within the TA activities, the requirement for analysis of potential and social impacts will be considered within the scope of the technical assistance. The terms of reference, work plans or other documents defining the scope and outputs of technical assistance activities will be drafted in a manner that is consistent with ESSs. In cases where particularly vulnerable groups, such as waste-pickers may be affected, specifically children and women, potential downstream impacts on these vulnerable groups will be assessed and these impacts will be included in assessment and consultations on relevant TA activities including CSOs/NGOs supporting / working with these waste-pickers.

Component 3 of the Project will support subprojects, including construction/installation of transfer stations; sorting and material recovery facilities; treatment, composting and recycling facilities; collection equipment; landfills rehabilitation, closure, extension or construction.

The anticipated subprojects are screened to determine the significance of associated environmental and social risks. The screening is undertaken in line with WB ESF Environmental and Social Risk Classification rating risks as High, Substantial, Moderate and Low Risks, based on a range of relevant factors which may include:

- Type, location, sensitivity, and scale of the project;
- Nature and magnitude of the potential environmental and social risks and impacts;
- Capacity and commitment of the implementing agencies to manage the environmental and social risks and impacts consistent with the ESF);
- Legal and institutional considerations;
- Nature of the mitigation and technology being proposed;
- Governance structures and legislation; and
- Considerations relating to stability, conflict or security.

As per the analysis, mitigation measures and environmental and social risks of subprojects envisaged under Project in the previous chapter, the summary of the environmental and social risks is summarized in **Table 5.1-1**.

Table 5.1-1: Summary of Preliminary Ratings of Environmental and Social Risks

Activity	Preliminary Risk Rating
Construction of a new landfill	Substantial (Environment) and High (Social)
Operation of landfill	High (Environment) and High (Social)
Construction and operation of transfer stations	Moderate (Environment and Social)
Construction and operation of material recovery facilities	Substantial (Environment and Social)
Construction and operation of composting facilities	Substantial (Environment and Social)
Rehabilitation/extension of a landfill	High (Environment and Social)
Closure of a dumpsite	High (Social)
Collection equipment, TA activities, including capacity building, policies development, outreach activities, strengthening municipalities in SWM, etc.	Low, E&S screening, and inclusion of potential impact as part of the TA (Environment and Social)
Presence of waste-pickers	High (Social)

The site-specific environmental and social assessment of these activities, or subprojects, will be carried out after the site has been selected and the specific details, including the location and detailed engineering design, will be determined during the first year of the project implementation. The preliminary risk rating will also be reconsidered at this stage. The depth and scope of subproject site-specific environmental and social due diligence will be defined based on the detailed environmental and social screening to be carried out based on the screening criteria provided in **Annex A**, and will generally require the preparation of:

- (1) **Environmental and Social Impact Assessment:** With content of identification and assessing the potential environmental and social risks of the proposed project, analyzing the scheme selection, formulating appropriate reduction measures, putting forward management requirements, and follow-up monitoring and reporting arrangements, this form is generally applicable to the subprojects of 'High' and 'Substantial' risk ratings. The ESIA will analyze the site-specific risks and propose appropriate mitigation measures following the Bank issued guidance notes following the selection of sites. For Moderate risk ratings, ESMP may be sufficient as per the proportionate approach taken to manage E&S risks.
- (2) **Environmental and Social Management Plan:** An ESMP consists of the set of mitigation, monitoring, and institutional measures to be taken during implementation and operation of a project to eliminate adverse environmental and social risks and impacts, offset them, or reduce them to acceptable levels. The "Environmental and Social Management Plan" can be a separate document (e.g., for complex "High risk" projects) independent of the "Environmental and Social Impact Assessment". In some cases, it can be a specific chapter in the document of ESIA. As for the simple subprojects with relatively low risk ("Low" risk ratings), E&S screening will apply.
- (3) **Labor Management Procedure:** This project involves direct workers, contracted workers, primary supplier workers and community workers. The purpose of the LMP is to manage risks of project workers. The tasks of LMP are to identify the major labor needs and risks of the project and assist in labor management. LMP is a "dynamic"

document, which needs to be continuously reviewed and updated by PMO in the process of project planning and implementation. (Please see Appendix 6 for the example of LMP.)

- (4) Detailed Resettlement Plan following the project's Resettlement Policy Framework (RPF), and in agreement with the General Department of Resettlement (GDR) under the MEF on the basis of the Standard Operating Procedures: The sub-projects shall avoid involuntary resettlement as far as possible. In case that is inevitable, it is necessary to put forward detailed mitigation, response and compensation measures for the involuntary resettlements, and formulate the arrangements on funds, institutions, monitoring and assessment action for the implementation of these measures. The required scope and level of detail of the detailed resettlement plan can vary depending on the size and complexity of the resettlement. The Detailed Resettlement Plan is required to be based on the up-to-date and reliable information and consisting of the following outline (a) Executive Summary, (b) Project Description; (c) Scope of Land Acquisition, Resettlement and Economic Displacement; (d) Socioeconomic Information and Profile; (e) Information Disclosure; (f) Grievance Redress Mechanism; (g) Entitlement Assistance and Benefits; (h) Relocation, (i) Resettlement and Livelihood Restoration Budget and Financing Plan (J) Institutional Arrangements; (k) Implementation Schedule; (l) Monitoring and Reporting. (Please see Appendix 7 for the Resettlement Framework). For the sub-projects involving waste-pickers, Livelihood Restoration will be part of the Detailed Resettlement Plans based on meaningful consultation with affected persons in accordance with the RPF and ESS5 and in agreement with the General Department of Resettlement (GDR) under the MEF. This will include both livelihood impacts from physical displacement and economic displacement and include livelihood restoration and support for affected persons. Specific attention will be paid to woman and children waste-pickers to develop suitable measures in line with ESF on the basis of social baseline studies for each of the applicable sub-projects
- (5) Indigenous Peoples Plan: ESS7 under WB ESF applies whenever indigenous peoples are present in, or have collective attachment to a proposed project area, as determined during the environmental and social assessment, regardless of the communities are affected positively or negatively, and regardless of the significance of any such impacts. It is essential to establish and maintain an ongoing relationship based on meaningful consultation with affected indigenous peoples throughout the project's life cycle, to improve project design and promote local support

The ESMF also contains a Chance Find Procedure for Culture Heritage: ESS8 requires that a chance finds procedure is prepared in advance if previous unknown culture heritage is encountered during project activities. It will be included in all contracts relating to construction of the project (Please see Appendix 13 for Chance Find Procedure).

5.2 PREPARATION OF SUBPROJECT ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

Following the screening and classification of sub-projects in line with **Table 4.2-1**, CMUs will ensure that qualified consultants will prepare, with adequate stakeholder engagement, risk

assessment and management plans as per the ESF and National requirements described in this ESMF and with update and implementation of the Project's Stakeholder Engagement Plan, including its Grievance Redress Mechanism (GRM).

The World Bank requires that the depth and breadth of environmental and social assessment should match the risk and impact level of the project, as well as the measures and information release of stakeholders should also be consistent with the risk and impact level of the project. Depending on the actual situation of specific subprojects, the corresponding sub-projects ESIAs and ESMPs will be prepared for the waste management infrastructure and, when required, site-specific Detailed Resettlement Plan and Indigenous Peoples Plan. Environmental and social assessment is required to comprehensively assess the E&S risks and impacts in the whole project cycle, including direct, indirect and cumulative impacts.

Based on the accurate project description and environmental and social status information, environmental and social assessment shall assess potential environmental and social risks and impacts, analyze alternative plans to the project, and determine methods to improve project screening, site selection, planning, design and implementation, so as to formulate management and mitigation measures against the adverse environmental and social impacts in accordance with the sequenced order of management measures. As for the cases of pollutant discharge, it is required to take the remaining environmental capacity, present and future land use, important sites of biodiversity in surrounding region, potential cumulative impacts and impacts of climate change into consideration. According to ESS10 of the World Bank, environmental and social assessment should include the participation of the stakeholders, which is an integral part of the assessment.

Associated facilities will be covered by the ESA process as per the ESS1.

According to the World Bank's ESS2 and ESS6, the environmental and social assessment is also required to take the relevant risks of child labor, forced labor and serious safety issues of major primary supply workers into account.

5.3 APPROVAL OF ENVIRONMENTAL AND SOCIAL DOCUMENTS

5.3.1 Review and Approval Procedures of Domestic Environmental Impact Assessment Documents

The MOE through its EIA Department regulates and monitors the EIA Process. The MOE is responsible for the following: (i) review and approval of IEIA/EIA reports in collaboration with other relevant ministries and (ii) monitoring the EMP implementation of Project Proponents/Owners throughout the different project phases. MOE operates at the municipal and provincial levels through its Provincial Department of Environment (PDoE).

Sub-decree No. 72 on EIA Process, enacted in 1999, requires that an EIA report to be submitted to the MOE, along with the feasibility study of the project for review and approval (Royal Government of Cambodia, 1999). The process being followed with the present project involves the Project Owner submitting the IEIA report with feasibility study, or master plan of the project, to MOE.

Figure 5.3-1 shows the IEIA/EIA process for the proposed project approved by Approving Institution/Cambodia Development Council.

EIA Process for Proposed Projects Which Approved by Approving Institution/CDC or Sub-Committee of Investment Municipality-Province

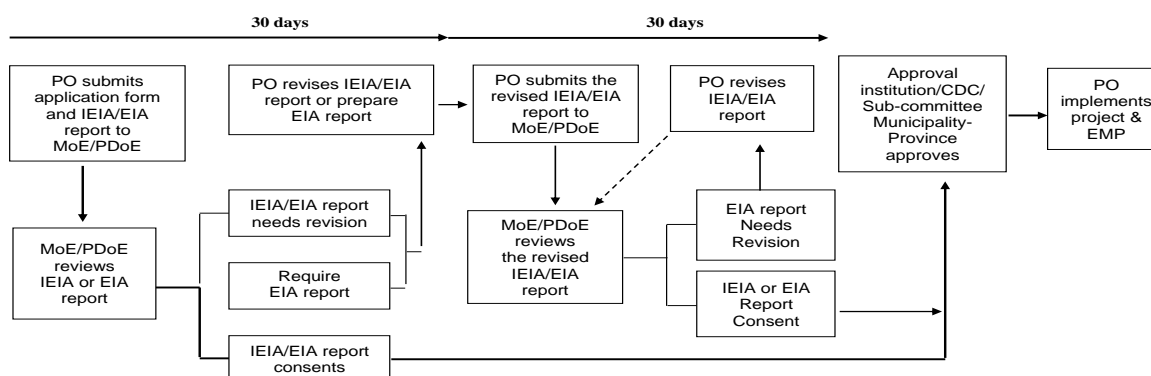


Figure 2.3-1 IEIA/EIA process for the proposed project approved by Approving Institution/Cambodia Development Council.

Remark EIA: Environmental Impact Assessment
 EMP: Environmental Management Plan
 IEIA: Initial Environmental Impact Assessment
 CDC: Cambodia Development Council
 MoE: Ministry of Environment
 PDoE: Provincial Department of Environment
 PO: Project Owner

Figure 5.3-1: EIA Approval Procedure in Cambodia

In Prakas No. 376 of the MOE, entitled “General Guideline in Preparation of IEIA and EIA” (2009), it was stated that the review process on the IEIA, or EIA, takes 30 working days, counted from the date that the EIA Department officially received the IEIA or EIA report. (Art. 10, MOE Prakas No. 376).

5.3.2 The World Bank’s Review and Approval Procedures of Environmental Impact Assessment Documents

The preparation of subproject-specific ESIA/ESMPs and, when required, RPs, LRP and IPPs, will be carried out by relevant CMUs, with the assistance of consultants employed by CMU-3. The environmental and social specialists of respective CMUs will manage the development of ESIA/ESMPs.

The World Bank will review the subproject-specific ESIA/ESMPs prepared in accordance with the ESMF and relevant ESSs before giving the clearance for final disclosure and implementation. This process will be also followed for the site-specific RPs, LRP and IPPs. It is important that the CMUs factor in reasonable time for World Bank reviews and ensure that documentation submitted for review is clear and efficient.

The CMU-3, together with other CMUs, will arrange for the disclosure and public consultations on subproject-specific ESIA/ESMPs and, when required, RPs, LRP and IPPs. Upon completion of the public consultations, CMU-3 will furnish to the Bank consulted draft ESIA/ESMPs and, when required, RPs, LRP and IPPs,, enclosing detailed minutes of consultations. Due to COVID-19 circumstances, the modality of the public consultations will be discussed and agreed with the Bank, and might include virtual consultations and other means of reaching out to potential stakeholders such as emails, phone calls, etc.

The incorporation of relevant measures stated in the site specific ESIA and ESMPs into the bidding documents and the contracts will be ensured by the CMUs. This will be done to ensure that contractors: (i) can properly incorporate and provide the cost of required measures and then are subsequently compliant to the relevant requirements; and (ii) conduct proper implementation of the actions and measures during the project construction and

implementation phase. The requirements of the SEP and, when required, the site-specific Resettlement Plan, Livelihood Restoration Plan and Indigenous Peoples Plan will also be incorporated in the relevant contracts.

5.4 PROCEDURES FOR BUDGETING, IMPLEMENTATION, SUPERVISION, AND REPORTING

The CMUs are responsible for the procedures for budgeting, implementation, supervision and reporting of the implementation of the ESMF, the specific requirements include:

- 1) For all subprojects under the project, the CMUs shall include the review and assessment of the E&S performance of the activities. The site-specific ESIA and ESMPs will include (a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) the capital and recurrent cost estimates and sources of funds for implementing the ESMP. This will be for all three (3) aspects (mitigation, monitoring and capacity development). The budget will also be included in the Resettlement Plans, and Livelihood Restoration Plans.
- 2) The CMUs are required to ensure that the relevant actions of ESCP and the measures coming out of the ESIA and will be actually realized in the implementation. The good practice is often that ESIA company works in collaboration with engineering design once site specific instruments are being prepared to ensure incorporation.
- 3) The CMUs shall guarantee that the subproject participants such as subproject, contractors and supervision units to establish an organizational structure which meets the requirements of E&S management, and arrange special personnel to be responsible for the works of E&S management. The requirements for specific ES management tasks and staff shall be reflected in respective TORs.
- 4) The CMUs shall assess the performance in accordance with the requirements of the national laws and regulations applicable to the subproject, the ESMF, ESCP and the E&S requirements of the subproject. CMUs ensure ESF compliance, including having contractors implementing instruments for civil work activities. The assessment of performance is to be carried during implementation support missions and midterm and at Implementation Completion stage or if any circumstance which require an audit. The construction supervision consultancy will also contain specific ES monitoring and oversight functions.
- 5) The CMUs shall inform the World Bank within 48 hours if it is informed of any environmental and social accidents that may have a significant adverse impact on the workers, the affected communities, the public or open environment. It is required to provide as much detailed information as possible about the accident, including the measures being taken or to be taken as well as the appropriate information provided by the contractors and regulatory agencies. Subsequently, A report will be provided within a one week to the Association on the accident and propose targeting measures to prevent it from happening again.

In addition, the CMU shall track and monitor the implementation of the actions committed in the ESCP and report it in the half-year E&S progress report.

5.5 SUB-PROJECT'S COMPLETION AND ASSESSMENT

The environmental and social management performance of the whole process must be reviewed after the implementation of a subproject. This provides a general overview of the experiences and lessons gathered from the process which would be a basis for the preparation of the completion of the report. The results of implementation of ESF instruments for the completion of each sub-project and project completion will be incorporated with the Project Implementation Completion Report/ICR, which elaborates ES management lessons learned (good and bad practices), ES performance rating, and capacity of institutions (before and after).

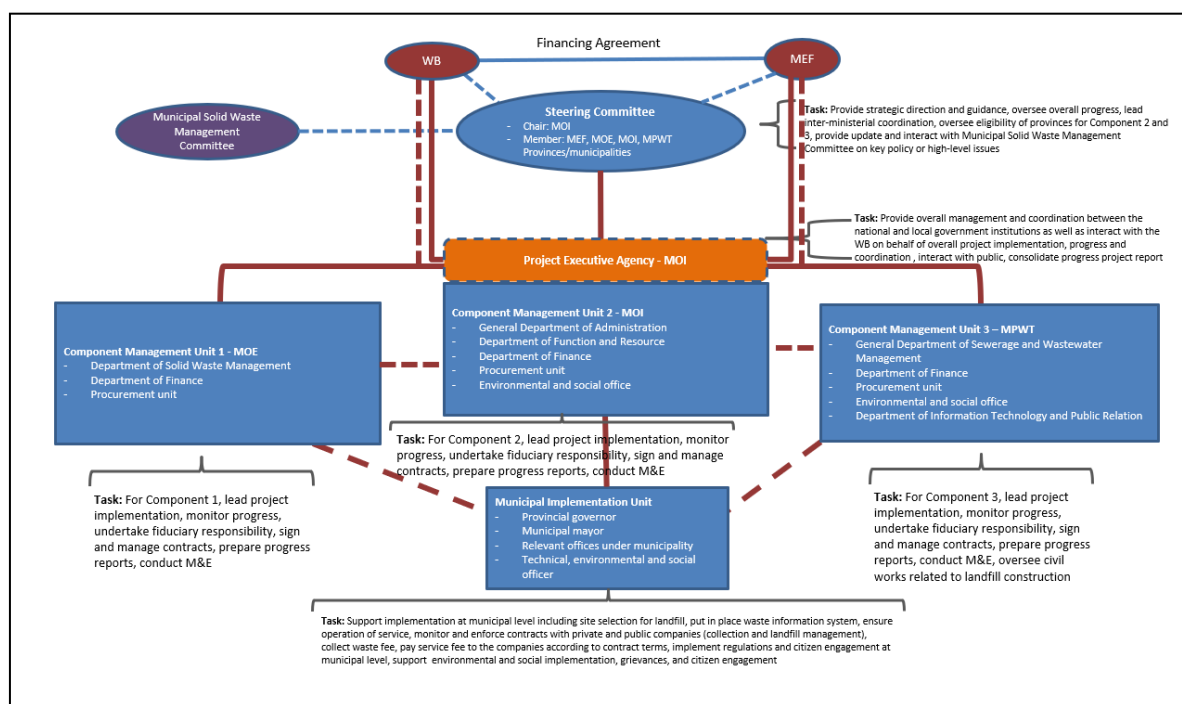
6 IMPLEMENTATION ARRANGEMENT AND STRENGTHENING OF INSTITUTION AND TRAINING PLANS

IMPLEMENTATION ARRANGEMENT'S ROLES AND RESPONSIBILITIES

As indicated above, the Component Management Units (CMUs) at national level will be established at the MOE (CMU-1), MOI (CMU2) and MPWT (CMU3) who will be responsible for the implementation of the components for which they are leading as **Implementing Agencies and in line with their respective legal mandates**. CMU-3 will be supported by the ESO office. Specialized consultants will be required to support project implementation and management and support the implementation of the Environmental and Social Commitment Plan. As part of CMU-2, each municipality participating in the project, will establish a Municipal Implementation Unit as an operational Solid Waste Management unit that will be part of CMU-2 and also report to CMU-1 and CMU-3.

Implementing Agencies will have full fiduciary responsibility (procurement, financial management, environment and social) for their respective components. As per the Standard Operating Procedures on project management for all externally financed Projects, when more than one line ministry is involved in the implementation of a Project, one line ministry is designated as the Executive Agency (EA) while the others are the Implementing Agencies (IAs). The Ministry of Interior is proposed as the Executive Agency given the overall approach of the proposed project in supporting Government's direction to decentralize responsibility for Solid Waste Management to municipal level with operational solid waste/urban department and local government funding for solid waste management and focus on cost recovery for operational costs. The EA will provide overall management, coordination and (consolidated) reporting including consolidated audit report, while fiduciary and safeguard compliance responsibility (procurement, financial management, environment and social) rest fully with IAs for their respective components.

Although each IA has distinct responsibility for respective components, significant inter-ministerial collaboration, and coordination across all components and with local governments will be required to achieve improvement of solid waste management. Specifically, the important and mandated role of the Ministry of Environment in capacity building, institutional strengthening -including environmental performance of technical design of waste infrastructure (along with MPWT)- and environmental monitoring and management of solid waste management is noted across the components. The implementation arrangements are shown in the figure below.



6.1 CAPACITY ASSESSMENT AND NEEDS

The MOE, MOI, and MPWT have significant experience with application of Environmental and Social Framework through a number of World Bank Projects¹⁹ and other international development organizations.

Moreover, the MPWT has extensive experience working with numerous development partners in Cambodia and has an Environment and Social Office (ESO) with experience in the field of engineering, environment, social or public administration, and all, or most, have received training by the World Bank and the MPWT previous international consultants on environment and social topics. The MPWT ESO will need continuous support from the national consultants throughout the implementation.

The CMU-3 will have the support of the Environmental and Social Office to implement the sub-projects' environmental and social management assessments and plans plan. The Municipal Implementation Unit will consist of at least two specialists: (i) technical solid waste and environmental specialist and (ii) social, OHS, grievances and consultation specialist.

¹⁹ Specifically, the Landscape project with MOE, the Livelihood Enhancement and Association of the Poor with MOI and the Road Connectivity Improvement Project with MPWT.

Further specialized consultants to support the project implementation and management will be needed and will need to be sustainably embedded in the Municipal Administration for the continuing responsibility and accountability of operation, management and monitoring of solid waste management in the respective municipalities.

The MEF, through its through its Inter-ministerial Resettlement Committee (IRC) is responsible for land acquisition activities (see the RPF). The permanent Secretariat of the IRC is the GDR, which is the lead agency for the preparation, implementation, and monitoring and reporting of land acquisition and resettlement activities. There is also an IRC-Working Group at the provincial level and Provincial Resettlement Sub-Committees (PRSC) and their working groups, which are established when there are land acquisition activities. The CMU-3 ESO and construction supervisor, and to some extent the contractor, will need to work collaboratively with these agencies in case of land acquisition as detailed in the RPF.

A training program will be delivered to enhance the E&S management capacity for CMUs, specifically CMU-3, Municipal Implementation Units, contractors, sub-contractors, supervising engineers and communities on:

1. ESMF, site- specific ESIA's and ESMPs for the waste infrastructure sub-activities
2. ESCP and quarterly and annual ESF monitoring reports
3. Stakeholder Engagement Plans and GRM
4. LMP and Labor GRM, including violence against children awareness
5. Resettlement Plans, including livelihood restoration and support (in close coordination with GDR) and subsequent resettlement and livelihood compensation and assistance.
6. Construction related trainings, specifically (i) Codes of Conduct for the contractors' workers and Training on the Requirements of Codes of Conduct including OHS, GBV, VAC, GRM; (ii) incidence and accidents reporting; (iii) Community Health and Safety and COVID-19 prevention; (iv) Traffic Management; (v) Labor Camp Management Plan (if applicable);

Contractors, sub-contractors specific training by engineering supervisor together with the by the E&S specialists of CMU-3 with the support of Association, on the requirements of ESF ESSs on the E&S risks at the level of contractors, sub-contractors, waste pickers and communities, including ESHS, OHS, RP, IPPF, EGDP, GBV, VAC, SEP and GRM. This will be executed at least one month before the start of the civil works and monthly throughout the construction period.

The budget for the training will be included in the scope for the preparation of the site-specific ESIA's, the construction supervisor and for the contractors and will also be provided through the support of the CMU-3 ESO and the Municipal Implementation Units as part of the staffing costs.

Communities training and information updates will also be delivered at least one month before the start of the civils works and monthly throughout construction, specifically on: Road safety, GBV, VAC, SEP and GRM, and basic ESMPs and ESMF of the project.

The CMUs will prepare and submit to the WB regular monitoring reports on the environmental and social performance of the Project, including but not limited to the implementation of the ESCP, status of preparation and implementation of E&S documents required under the ESCP, stakeholder engagement activities, functioning of the grievance mechanism(s).

ANNEXES

ANNEX A: ENVIRONMENTAL AND SOCIAL (E&S) SCREENING OF SUBPROJECT

This screening table is filled by the Component Management Units and submitted to the World Bank for review.

Where yes is applicable, a short explanation is required that supports the assigned risk rating.

Screening factor	Y	N	Risk rating				Remark / Suggestion
			L	M	S	H	
E&S Risk of the Subproject							
1. Whether the subproject involves 'Associated Facilities'? (The 'Associated Facility' means a facility or activity which is not funded as a part of the project, and judged by the World Bank as: (a) Directly and significantly related to the project; (b) Simultaneously implemented or planned with the project; or (c) Constructed for the project and is necessary for the project.)							If so, then the relevant E&S requirements of the subproject are applicable to the 'Associated Facilities'.
2. Is the subproject located in nature reserves (existing or planned), scenic areas, forest parks, drinking water conservation areas or areas with high ecological value?							If so, the project will not be supported.
3. Does the implementation of the subproject affect natural habitats (such as forest, river or wetland) outside of nature reserves? Is there any important, vulnerable or endangered species of plants or animals inhabiting in the area?							If so, it is required to provide the relevant impact assessment and mitigation methods in the ESIA.
4. Does the sub-project involve Land Acquisition, resettlement and/or economic displacement? Does the component involve restrictions on the use of land and resources including access to recyclables, so that the community or its internal group loses the traditional or customary right to use resources or recognized right of use? Does the component render any land unusable or any migrant unable to enter?							If yes, DRP should be prepared according to ESS5 and the RPF.
5. Does the sub-project impact (i) waste-pickers, (2) are any of the full or part time waste pickers are under 18 years old but over 14 years old; and (3) are any of the full or part time waste pickers under 14 years old							The DRP will have specific analysis and measures for the waste-pickers and children
6. Does the sub-project expect any labor influx for the works and if the case does this labor influx cause potential impacts to Gender Based Violence? Can the workers be accommodated in the community and does a work camp needs to be put in place?							If yes, then mitigation measures need to be defined to mitigate the GBV/SEA/SH risks and deal with community health and safety.

Screening factor	Y	N	Risk rating				Remark / Suggestion
			L	M	S	H	
							Also, regardless of labor influx workers should sign a code of conduct prohibiting SEA/SH and other anti-social behavior while on-site
7. Is there any indigenous peoples/ethnic minority community in the component area, or is any indigenous peoples / ethnic minority community collectively attached to the component area?							If yes, an IPP should be prepared according to ESS7.
8. Does the component involve reconstruction or expansion on any existing facility, or otherwise relate to it?							If yes, an environmental and social assessment will be undertaken as part of the site-specific ESIA.
9. Is there any known archaeological, historical or other cultural heritage within the scope of the subproject?							
10. Do the public or non-governmental organizations around the subproject express strong opposition to the construction of the project?							
11. Will the subproject bring great safety and health risks to the surrounding communities?							If so, the risk rating of the subproject is classified as S or H.
12. Does the construction and operation of the subproject pose great health and safety risks to the workers?							If so, the risk rating of the subproject is classified as S or H.
13. Will the subproject cause social conflicts related to the recognition of community hazards or unfulfilled benefits to a certain extent?							If so, the risk rating of the subproject is classified as S or H.
Environmental and Social Assessment of Existing Facilities Related to the Project							
14. Does the subproject existing facility have legal business permission and license?							To review relevant documents and records.
15. Does the sub project existing facility comply with the relevant national environmental laws and regulations and discharge standards of 'the three wastes'?							To review compliance records (monitoring reports, certificates, etc.) and consult with relevant departments.
16. Is at the existing dumpsites health care waste disposed? at the existing dumpsite, hazardous waste disposed?							If so, if in compliance with regulations.
17. Is the subproject existing enterprise facing major unresolved environmental penalties or environmental responsibilities? (e.g. pending legal proceedings involving environmental issues)							To consult with relevant departments for data research.
18. Is the subproject existing facility facing environmental and social impact complaints from the surrounding residents or non-governmental organizations?							To conduct media search and consultation with the local communities and non-governmental organizations.
19. Has the subproject existing facility obtained the approval document or registration of EIA report issued by environmental protection department?							To review the approval documents through online audit of relevant departments' websites.

Screening factor	Y	N	Risk rating				Remark / Suggestion
			L	M	S	H	
20. Has the subproject existing facility obtained the relevant land use certificate or land use approval document issued by the land department?							To review the approval documents through online audit of relevant departments' websites. For the existing enterprise, it is required to carry out Due Diligence on land acquisition.
21. Does the subproject need to be examined and approved by relevant departments such as safety, soil and water conservation, geological disasters, flood control and so on? If necessary, state the approval status.							
Overall environmental and social risks: (The overall level of E&S risk is determined by the highest risk rating of the issues above.)							Documents required:

ANNEX B: SUBPROJECT'S ENVIRONMENTAL AND SOCIAL (E&S) RISK CLASSIFICATION AND E&S MANAGEMENT TOOLS

Activity	Risk rating	Definition	Applicable E&S Tools
Landfill rehabilitation, extension, construction, operation	High	The activities will possibly cause a wide range of significant environmental and social risks and adverse impacts on the population and environment. Some of the impacts can't be mitigated by now, or with special situations such as requiring complex and / or unproven mitigation and/or compensation measures or techniques. There is presence of waste-pickers part of high risk rating definition.	ESIA, ESMP, SEP, Detailed Resettlement Plan ²⁰ , LMP, IPP etc.
Material recovery, recycling, composting facilities if including land acquisition in residential areas	Substantial	Some of the E&S impacts of the project are possibly significant, but with reliable mitigation and/or compensation measures which are easier to be designed comparing with that of the 'High' risky projects.	ESIA/ESMP ²¹ , SEP, DRP, LMP, IPP etc.
Transfer stations; material recovery, sorting,	Moderate	The project has potential E&S risks or adverse impacts which are possibly not significant and can be mitigated in predictable ways.	ESIA/ESMP ²² , SEP, DRP, LMP, IPP etc.
Collection equipment TA activities, including capacity building, policies development, outreach activities, strengthening municipalities in SWM, etc.	Low	The potential adverse risks and impacts on humans and / or the environment may be small or negligible.	E&S screening and inclusion of potential impact as part of the TA

²⁰ As per the definition of the SOP-LAR

²¹ Material recovery composting facilities are expected to be placed at the landfill or transfer stations and facilities will be packaged in one contract with one overall ESIA and ESMP, SEP DRP, LMP, IPP etc prepared for the sub-project in the Participating Municipality.

²² Material recovery composting facilities are expected to be placed at the landfill or transfer stations and facilities will be packaged in one contract with one overall ESIA and ESMP, SEP DRP, LMP, IPP etc prepared for the sub-project in the Participating Municipality.

ANNEX C: LANDFILL AND SOLID WASTE TREATMENT FACILITY SITE SCREENING & SELECTION CRITERIA

The Site Screening Process is based on a two (2) stage approach: (i) preparation of a Modelling and Negative Mapping process and (ii) A series of site visits to ground-truth data and gather new information from walk-over surveys.

The modelling, negative mapping and site investigations were guided by the Cambodian government Guidelines on Selection of Landfill Sites (2016) and the WB landfill siting criteria.

The negative mapping process employs powerful ArcGIS software to create an Analytical Hierarchy Process (AHP) incorporating more than 25 landfill site suitability screening criteria based on both the national Cambodian landfill siting guidelines (2016), and the International WB landfill siting criteria, and provide a simple colour coded map output: Restricted, Least Suitable, Suitable, Most Suitable.

Twenty-four (24) screening criteria were used broadly divided into five (5) categories:

1. Transport (including distance from service area and access road conditions);
2. Physical site Conditions for landfill development (Geotechnical/hydrological/hydrogeological);
3. Current land use, ownership and development zoning;
4. Social impacts, safety and acceptability;
5. Environmental and cultural heritage

The full list siting criteria is shown in **Table C-1**.

Table C-1: Siting Criteria

No.	Siting Criteria	Details/Description
Transport Related		
1	Waste haul distance/time	Site accessible should be within 30 minutes travel time, otherwise larger vehicle or transfer station required.
2	Transfer station	Location within 2 hours of landfill or consider transfer by rail or barge.
3	Roads	Public road should be paved, with OK with, slope, etc. New access road <10 km and <3 km (large and small landfill)
Nature Conditions		
4	Topography	<ul style="list-style-type: none"> • Gentle topography, use cell/bund method • Leachate collection layer at 2% gradient
5	Groundwater	<ul style="list-style-type: none"> • 10-year seasonal high groundwater >1.5m below base • >1m of low permeable soil above GWT or use plastic liner
6	Soils	...
6a	Earthwork Balance	On-site source of site formation, bunds, Final Cover (60cm), Intermediate Cover (30cm), and (prefer) Daily Cover (15cm)
6b	Alternatives and Details	<ul style="list-style-type: none"> • Daily cover can be alternative and/or reused materials • Assume 1 cu.m. cover soil for every 6 cu.m. waste
7	Climatic Conditions	Not in area of high winds (results in blowing litter)
8	Geology	No underlying limestone, carbonated, fissure or porous rock >1.5m thick at uppermost layer
9	Streams	No perennial stream <300m downgradient of site
10	Geology (Seismic Risk)	No significant seismic risk in region of landfill or consider more conservative design to address such

No.	Siting Criteria	Details/Description
11	Geology (Faults)	No faults or significant fractures within 500m of landfill area (gas and leachate migration concerns)
12	Floodplain	...
12a	10-year	No siting within 10-year floodplain
12b	100-year	If within 100-year floodplain, provide design to eliminate potential for “washout”
Land Use		
13	Landfill Capacity	...
13a	Land Area	Land area for 10-year landfill capacity, including 2 to 4 ha Facilities area; 2 to 4 ha for LTP; 10% for buffer
13b	Waste Disposal Volume	Recommended 10-25m deep, density 800-1000 kg per cu.m., with soil:refuse ratio of 1:6
14	Groundwater Recharge	Site area should not be within 10-year groundwater recharge area or pending water supply development
Public Acceptability, Social Impacts and Safety		
15	Residential	No residential development within 250 m
16	Visual	<ul style="list-style-type: none"> Landfill not visible from residential areas <1 km away Landscaping, bund screen, curved road may be required
17	Socio-political / Cultural	...
17a	Socio-political Sites	>1km from socio-politically sensitive (memorials, churches, schools, etc.) sites
17b	Cultural Sites	Avoid access roads passing by culturally sensitive sites
17c	Presence of waste-pickers	Presence of waste-pickers at possible new landfill site.
Safety		
18	Water Supply	No private or public drinking, irrigation, or livestock water supply well within 500 m downgradient of the site
19	Obstructing Infrastructure	No major infrastructure (power lines, gas, sewer, water, etc.) crossing the site
20	Mines	<ul style="list-style-type: none"> Underlying underground mines not adversely affected No underlying minable resources
21	Airports	No siting within 3 km of a turbojet airport and 1.6 km of piston-type airport
Environmental		
22	Wetland	No important biodiverse wetland or reproductive value within landfill area
23	Endangered Species (Fauna)	No rare or endangered species breeding area or protected habitat area within the site (or provide alternative habitat)
24	Forest (Flora)	No significant protected forest within 500 m of landfill area
25	Leachate Treatment	Treat landfill leachate as efficiently and effectively as practically possible

The output of the model includes a visual map of each City and surrounding area with colored Suitability Banding in four (4) categories: Restricted, Less Suitable, Suitable, Most Suitable.

- **Scoring by ranking:** scoring the identified alternatives/options available for each criteria. The score assigned to each option is the sum of its rankings for each of the applied criteria. Ranking score is normalized to same scale
- **Criteria Weighting:** consideration is given to the fact that each of the criterion can differ in importance; thus each is assigned a weighting factor based on its importance.

Figure C-1 shows the result of the negative mapping activity. This was carried out for all priority cities Siem Reap, Kandal, and Kampong Speu.

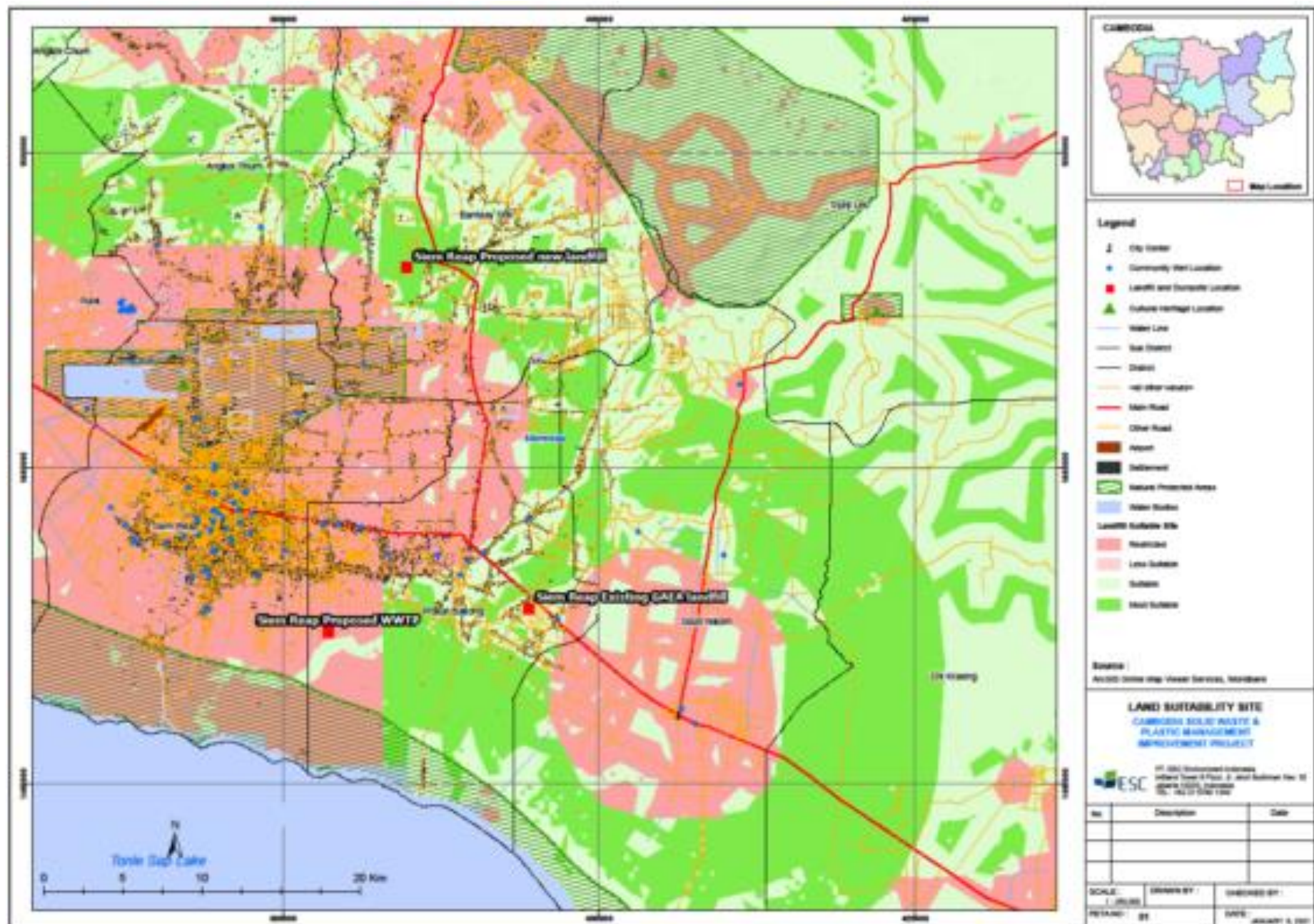


Figure C-1: Siem Reap Landfill Site Suitability Map

ANNEX D: GENERIC TEMPLATE FOR SITE SPECIFIC ESIA DOCUMENTS

Annex D-1: Indicative Outline of ESIA

Where an environmental and social impact assessment is prepared as part of the environmental and social assessment, it will include the following:

Table of Content	
List of Tables/Figures	
List of Acronyms and Abbreviations	
A. Executive Summary	Concisely discusses significant findings and recommended actions.
B. Legal and Institutional Framework	<ul style="list-style-type: none"> Analyzes the legal and institutional framework for the project, within which the environmental and social assessment is carried out, including the issues set out in ESS1, paragraph 26. Compares the Borrower's existing environmental and social framework and the ESSs and identifies the gaps between them. Identifies and assesses the environmental and social requirements of any co-financiers.
C. Project Description	<ul style="list-style-type: none"> Concisely describes the proposed project and its geographic, environmental, social, and temporal context, including any offsite investments that may be required (e.g., dedicated pipelines, access roads, power supply, water supply, housing, and raw material and product storage facilities), as well as the project's primary suppliers. Through consideration of the details of the project, indicates the need for any plan to meet the requirements of ESS1 through 10. Includes a map of sufficient detail, showing the project site and the area that may be affected by the project's direct, indirect, and cumulative impacts.
D. Baseline Data	<ul style="list-style-type: none"> Sets out in detail the baseline data that is relevant to decisions about project location, design, operation, or mitigation measures. This should include a discussion of the accuracy, reliability, and sources of the data, as well as information about dates surrounding project identification, planning, and implementation. Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions. Based on current information, assesses the scope of the area to be studied and describes relevant physical, biological, and socioeconomic conditions, including any changes anticipated before the project commences. Takes into account current and proposed development activities within the project area but not directly connected to the project.
E. Environmental and Social Risks and Impacts	Takes into account all relevant environmental and social risks and impacts of the project. This will include the environmental and social risks and impacts specifically identified in ESSs1–10, and any other environmental and social risks and impacts arising as a consequence of the specific nature and context of the project, including the risks and impacts identified in ESS1, paragraph 28.
F. Mitigation Measures	<ul style="list-style-type: none"> Identifies mitigation measures and significant residual negative impacts that cannot be mitigated and, to the extent possible, assess the acceptability of those residual negative impacts. Identifies differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable. Assesses the feasibility of mitigating the environmental and social impacts; the capital and recurrent costs of proposed mitigation measures, and their suitability under local conditions; the institutional, training, and monitoring requirements for the proposed mitigation measures. Specifies issues that do not require further attention, providing the basis for this determination.

G. Analysis of Alternatives	<ul style="list-style-type: none"> • Systematically compares feasible alternatives to the proposed project site, technology, design, and operation—including the "without project" situation—in terms of their potential environmental and social impacts; • Assesses the alternatives' feasibility of mitigating the environmental and social impacts; the capital and recurrent costs of alternative mitigation measures, and their suitability under local conditions; the institutional, training, and monitoring requirements for the alternative mitigation measures. • For each of the alternatives, quantifies the environmental and social impacts to the extent possible, and attaches economic values where feasible.
H. Design Measures	<ul style="list-style-type: none"> • Sets out the basis for selecting the particular project design proposed and specifies the applicable ESHGs, or if the ESHGs are determined to be inapplicable, justifies recommended emission levels and approaches to pollution prevention and abatement that are consistent with GIIP.
I. Implementation Arrangements and capacity assessments and needs	<ul style="list-style-type: none"> • Sets out the basis for specific implementation arrangements for the sub-project implementation and the specific capacity assessments and needs
References	Set out the written materials, both published and unpublished, that have been used.
Appendices	Record of meetings, summary of consultations, and surveys with stakeholders, including those with affected people and other interested parties. The record specifies the means of such stakeholder engagement that were used to obtain the views of affected people and other interested parties.

Annex D-2: Indicative Outline of ESMP

An ESMP consists of the set of mitigation, monitoring, and institutional measures to be taken during implementation and operation of a project to eliminate adverse environmental and social risks and impacts, offset them, or reduce them to acceptable levels. The ESMP also includes the measures and actions needed to implement these measures. The Borrower will (a) identify the set of responses to potentially adverse impacts; (b) determine requirements for ensuring that those responses are made effectively and in a timely manner; and (c) describe the means for meeting those requirements.

Depending on the project, an ESMP may be prepared as a stand-alone document or the content may be incorporated directly into the ESCP. The content of the ESMP will include the following:

A. Mitigation	<p>The ESMP identifies measures and actions in accordance with the mitigation hierarchy that reduce potentially adverse environmental and social impacts to acceptable levels. The plan will include compensatory measures, if applicable. Specifically, the ESMP:</p> <ol style="list-style-type: none"> Identifies and summarizes all anticipated adverse environmental and social impacts (including those involving indigenous people or involuntary resettlement); Describes—with technical details—each mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; Estimates any potential environmental and social impacts of these measures; and Takes into account, and is consistent with, other mitigation plans required for the project (e.g., for involuntary resettlement, livelihood restoration, Indigenous Peoples, or cultural heritage).
B. Monitoring	<p>The ESMP identifies monitoring objectives and specifies the type of monitoring, with linkages to the impacts assessed in the environmental and social assessment and the mitigation measures described in the ESMP. Specifically, the monitoring section of the ESMP provides:</p>

	<ul style="list-style-type: none"> a. a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, b. detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; c. monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.
C. Capacity Development and Training	<ul style="list-style-type: none"> • To support timely and effective implementation of environmental and social project components and mitigation measures, the ESMP draws on the environmental and social assessment of the existence, role, and capability of responsible parties on site or at the agency and ministry level. • Specifically, the ESMP provides a specific description of institutional arrangements, identifying which party is responsible for carrying out the mitigation and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training). • To strengthen environmental and social management capability in the agencies responsible for implementation, the ESMP recommends the establishment or expansion of the parties responsible, the training of staff, and any additional measures that may be necessary to support implementation of mitigation measures and any other recommendations of the environmental and social assessment.
D. Implementation Schedule and Cost Estimates	<p>For all three aspects (mitigation, monitoring, and capacity development), the ESMP provides</p> <ul style="list-style-type: none"> a. an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; b. the capital and recurrent cost estimates and sources of funds for implementing the ESMP. These figures are also integrated into the total project cost tables.
E. Integration of ESMP with the Project	<p>The Borrower's decision to proceed with a project, and the Bank's decision to support it, are predicated in part on the expectation that the ESMP (either stand alone or as incorporated into the ESCP) will be executed effectively. Consequently, each of the measures and actions to be implemented will be clearly specified, including the individual mitigation and monitoring measures and actions and the institutional responsibilities relating to each, and the costs of so doing will be integrated into the project's overall planning, design, budget, and implementation.</p>

ANNEX E: ENVIRONMENTAL, HEALTH, AND SAFETY GUIDELINES FOR THE WASTE MANAGEMENT FACILITIES

I. Overview of Relevant Laws to Environment, Health and Safety

Anukret on Solid Waste Management

The purpose of the anukret is to provide regulation on solid waste management and safety precautions to ensure the protection of community health and environmental preservation.

On Household Waste Management

The Ministry of Environment (MOE) of the Kingdom of Cambodia governs the guidelines on waste disposal, collection, transport, storage, recycling, minimizing, and dumping in provinces and municipalities to set a standard and safe procedure of waste management. Provincial and municipal authorities establish the waste management plans of their respective governing areas. Disposal of waste in unauthorized areas is prohibited.

On Hazardous Waste Management

The MOE establishes the guidelines on hazardous waste management. The management of hazardous wastes shall be done separately from household wastes and disposal of hazardous wastes are strictly prohibited in public sites, drainage, water, rural, and forest areas.

Transportation and storage of hazardous wastes in landfills are required to be approved by permit by the MOE, in which case the owner of such landfills must submit quarterly report of the hazardous wastes to the MOE. This includes: (i) type and amount of waste, (ii) sources of waste, (iii) packing and transport facility, and (iv) process and management of the waste inside the location. Furthermore, investments made for the treatment of hazardous wastes are subject to approval from the MOE.

Medical waste is to be collected by the Medical Waste Management Unit and then treated (incinerated) at the Waste Management Unit's Facility to destroy infectious waste in return for fees to be paid to the Medical Waste Management Unit. There are reported incidences of co-mingling medical and hazardous waste with municipal waste and illegally dumping them at the open dumpsites.

For the Project financed landfills, waste acceptance criteria will be formulated and stricter testing and monitoring required under the landfill management and operation contracts.

II. World Bank Policy

The Environment, Health and Safety guidelines of the World Bank Group applies to municipal solid and industrial waste management facilities that include the following processes:

- Waste collection and transport;
- Waste receipt,
- Unloading, processing, and storage;
- Landfill disposal;
- Physio-chemical and biological treatment; and,
- Incineration Projects (WBG, 2007).

Table E-1: EHS Guidelines in Waste Management Facilities

Phase	Description
Landfill Siting	<p><u>Environmental Conditions for Waste Management Facilities</u> The guidelines provide that the proximity of groundwater and recharge area, surface water. Private or public drinking, irrigation, or livestock water supply, and perennial stream must be considered in landfill siting. Also, the exposure of the site option to hydrometeorological and seismic hazards, must be considered in the site selection. (Section 1.1.1, p.10-11, 14)</p> <p><u>Community Health and Safety</u> In the identification of landfill sites, the nearest residential developments must be over 250 meters from the site option.</p>
Landfill Design and Development	<p>Guidelines for the design and development of waste management include the following:</p> <p><u>Noise Management</u></p> <ul style="list-style-type: none"> • Construction of a buffer zone, • Road quality maintenance • Use of equipment with low-noise emission levels, • Use of sound-insulating materials, acoustic screens and silencing equipment, • Enclose inherently noisy equipment in a fixed structure, and • Inclusion of noise considerations in the design process. <p><u>Emission Management</u></p> <ul style="list-style-type: none"> • Inclusion of landfill gas collection system and its use if practical, • Use of gas blowers, and • Installation and regular sampling of boreholes
Landfill Operations	<p><u>Labor Management Occupational Safety</u> Occupational Safety Procedures for the landfill operation must include provisions related to:</p> <ul style="list-style-type: none"> • Accidents and injuries, including those involving trucks and moving equipment, unstable disposal site surfaces, and fires and explosions, • Chemical exposure, including exposure to chemical burns, and • Exposure to pathogens and vectors that can be health hazards. <p>Facilities managing municipal solid waste must work together with government entities to allow the collection and sorting of solid waste, if possible, initiatives to help them form formal entities, such as cooperatives or micro-enterprises, can be done to formally contract them into the process of the facility. Once such work is formalized, the workers must be officially registered, provided with protective equipment, provided with washing and sanitation facilities, and receive regular health examinations and vaccinations under a health surveillance program. The design of the facility must also consider easier access of the to recyclables and reduce their contact to wastes that pose hazards. (p. 23-26)</p> <p><u>Community Health and Safety</u> The following impacts likely to occur during the operation phase must be looked into:</p> <ul style="list-style-type: none"> • <i>Waste scavenging</i>: should not be allowed under any circumstances in hazardous and non-hazardous industrial waste management facilities. Only facilities handling municipal solid waste may consider incorporating the employment of waste-pickers into the operations of the facility • <i>Physical, chemical, and biological hazards</i>: access to facilities, especially for areas that hold toxic waste, must be restricted and implement security procedures. • <i>Litter</i>: garbage outside the facility must be managed to avoid the exposure of the adjacent community to hazardous substances and potentially spread disease. • <i>Noise</i>: measures to management noise should be taken to void causing nuisance to the adjacent areas., • <i>Dust and odors</i>: Buffer areas must be included in the design, especially between processing areas and potential receptors, especially residences, hospitals and

Phase	Description
	<p>schools. Processing areas must be located in areas at the downwind from these areas to manage and control exposure of community to dust and odors.</p> <ul style="list-style-type: none"> • <i>For informal living near waste management facilities</i>, they often have poor living conditions with only minimal water and sanitary facilities. They are also especially at risk to exposure to hazardous and toxic waste and fumes. As much as possible, the economic displacement of these must be avoided, especially without provision of any alternatives. <p>(Section 1.1.1, p.10-11, 14; Section 1.3 p.26)</p>
Decommissioning or Closure	<p>Specific procedures on closure must emphasize preservation of long-term integrity and security of the site. The closure and post-closure plan must include mitigating impacts to human health and environment after the closure. All plans must be aligned with the defined post-closure use.</p>

Source: World Bank Group (2007)

ANNEX F: LABOR MANAGEMENT PROCEDURES (LMP)

See separate document for Annex F.

ANNEX G: RESETTLEMENT POLICY FRAMEWORK (RPF) AND LIVELIHOOD RESTORATION FRAMEWORK

See separate document for Annex G.

ANNEX H: INDIGENOUS PEOPLES PLANNING FRAMEWORK (IPPF)

See separate document for Annex H

ANNEX I: GENERIC ESMP

I. Background, Objectives of the ESMP and Institutions

The Environmental and Social Impact Assessment (ESIA) study for the Cambodia Solid Waste and Plastic Management Improvement Project (CSWPMIP) assessed the potential impacts and recommended mitigating measures in view of the possible rehabilitation of the old dumpsite and the construction of a sanitary landfill and other related SWM facilities such as transfer stations, composting and material recovery facilities in Siem Reap. The Environmental and Social Management Plan (ESMP) shall ensure the preservation of ecological balance and environmental safety and that a sound social and environmental management plan is established for the Project.

Although the proposed Project, in general, has its direct and indirect negative social and environmental impacts, these could be minimized through sound planning and the introduction of proper construction and monitoring techniques during all phases of project implementation.

The benefits that are expected to accrue from project implementation far outweigh the expected adverse effects on the environment. In order to ensure that proper designs and operational standards are adhered to and that the environment and public safety is not compromised, appropriate site practices and procedures outlined in this section should be strictly followed throughout the lifetime of the project.

II. An organizational set-up for the ESMP will be established prior to the construction and operation of the landfill. Matrix of Potential Risks / Impacts and Mitigation Measures

A considerable number of potential impacts had been identified and the mitigating measures will be addressed during the design and construction of the sanitary landfill facility (SLF) project including the transfer station, material recovery facility, and composting facility. This is to make sure that the project will have the least impact on the environment surrounding the site. The identified potential impacts and generic mitigating measures are tabulated below.

Table 6.1-1: Generic Mitigating Measures for Potential Project Impacts

Component	Potential Impacts	Generic Mitigating Measures ²³
Pre-Construction Phase		
Siting of the location of the landfill and other solid waste management (SWM) facilities	Wrong siting of landfill and other SWM facilities	<ul style="list-style-type: none"> - Conduct detailed site suitability analysis that is being undertaken to select a suitable site - Main environmental risks related to locations for transfer stations, waste treatment/recycling such as the composting and material recovery facilities and landfill facilities can be mitigated through the siting process - Conduct site-specific ESIA for the landfill and waste treatment facilities sub-projects
Demography	Physical and economic displacement	<ul style="list-style-type: none"> - Inventory of project affected households, groups, and businesses in line with the RPF and LRF - Conduct of consultations with project-affected groups and other relevant stakeholders - Develop and implement a resettlement plan and livelihood restoration plan in line with the Resettlement Plan Framework and Livelihood Restoration Framework
Construction Phase		
Civil works activities	Mobilization and demobilization of equipment, materials and personnel	<ul style="list-style-type: none"> - A transportation management plan should be developed and implemented - Spraying of water on the streets and roads when mobilization is performed during a particular hot day at least twice a day - Implement stakeholder engagement plan that includes consultation and dissemination of information regarding the mobilization and demobilization - Establish Grievance Redress Mechanism
Natural landscape	Clearing of vegetation	<ul style="list-style-type: none"> - Minimize clearing as much as possible -
	Cutting of trees	<ul style="list-style-type: none"> - Secure the necessary permits - - Conduct tree inventory - Replace cut trees
Air quality	Dust generated from construction activities	<ul style="list-style-type: none"> - Stabilize the exposed surfaces - Minimize activities that suspend dust particles - Water spraying for heavily transport areas and in urban communities - Apply water to the areas to be excavated as well as the loading and unloading areas and unpaved roads - Develop a wheel wash at the entrance to public roads or exit of the landfill construction site - Implement speed controls on-site - Regular water spraying to those dusty static construction areas - Maintain enough loading capacity of lorries and barges to avoid spillage - Cover soil stockpiles with erosion control blankets - Use hoarding to avoid wind-blown dust - Apply good construction practices

²³ To be specified and costed as part of site-specific ESIA.

Component	Potential Impacts	Generic Mitigating Measures ²³
Noise	Construction noise during the development stages	<ul style="list-style-type: none"> - Avoiding evening or night-time construction work as far as possible; - Installation of noise fencing at critical/sensitive site boundaries (construction of screening mounds to shield subsequent building and construction activities) - Maintain the site roads in good condition to reduce noise and vibration from vehicle's movement - Proper scheduling of vehicle movement to avoid accumulated noise - Apply good construction practices
Odor	Odor impact will occur, causing nuisance to neighboring communities during the implementation of the construction work for the rehabilitation of the existing site but will be significantly minimized after the works are completed	<ul style="list-style-type: none"> - Application of cover for the waste at existing dumpsite for both options. - Installation of landfill gas treatment system - Leachate treatment system - Use of odour counter actant and/or masking sprays in case odor is a chronic problem
Soil integrity		<ul style="list-style-type: none"> - Use excavated soil in the landfill operations: usage as daily cover of waste, and usage in establishing side embankments for containing the waste ▪ Use excavated soil for coverage for closing of adjacent old cells (re-cultivation layers of the final cover) - Soil excavated in the direct vicinity of the existing dump site has to be sampled to assess the extent of contamination and accompanying suitability for landfill construction
Soil erosion		<ul style="list-style-type: none"> - Installing erosion matting over the stockpiles if further surface compaction and/or seeding fails - Protect the stockpiles from flooding and run-off by placing berms or equivalent around the outside where necessary - Protection of most susceptible soil surfaces - Protection of drainage channels
Topsoil losses	Topsoil losses may occur during the construction works mobilization in relation with setting camps, materials plants and other related infrastructure	<ul style="list-style-type: none"> - Storage of topsoil in stockpiles - Storage locations that prevent the stockpiles being compacted by vehicle movements or contaminated - Segregation from subsoil stockpiles - No storage where there is a potential for flooding - No storage close to streams, subject to local topography
Biodiversity and habitat	Biodiversity decreased due to loss of habitat	<ul style="list-style-type: none"> - Limit the construction area according to the planned detailed engineering design - Adequate site selection through thorough site assessment process - Limit the construction area according to the planned detailed engineering design - leachate collection and treatment system - installation of lining systems - zoning outside of vital habitats and ecosystems - monitoring of species presence and pollution - flood protection measures
Water resources	Contamination of water resources by suspended	<ul style="list-style-type: none"> - Minimizing land disturbance - Isolation of areas to be excavated from surface water run-on through the use of bunds;

Component	Potential Impacts	Generic Mitigating Measures ²³
	solids during site construction activities	<ul style="list-style-type: none"> - Use of temporary silt fences, silt traps and sedimentation ponds at the downstream end of excavation works; - Covering of stockpiles and peripheral embankments to reduce the potential for erosion and sediment entrainment; and - Re-seeding of bare areas promptly upon completion of earthmoving - Proper handling of waste to avoid spillage
Water quality	Risk of surface water and groundwater quality from construction activities	<ul style="list-style-type: none"> - Minimize land disturbance - Manage run-off and sediment exiting to disturbed areas - Manage drainage within the disturbed areas - Manage ground cover - Good construction quality assurance procedures and protocol during installation of the basal, lateral and top containment engineering systems - Leachate treatment
Traffic	Traffic congestion	<ul style="list-style-type: none"> - Evaluation of the transport route should be studied to mitigate any impacts on traffic and transportation - A traffic management plan should be developed and implement to ensure minimal traffic disruption - Trucks and construction vehicles in the project area will only be permitted to use the construction access roads and required to operate at specified speeds - Apply speed limit in urban communities/areas, especially schools and hospitals
Employment opportunity	Increase income of the community that will be hired in the construction at the landfill site	<ul style="list-style-type: none"> - Positive impact - Ensure good labor and working conditions - Priority hiring to be given to locals - Local sourcing of supplies and materials whenever possible
	Potential conflict between migrant labor and local community including crime, disputes, cultural and disease	<ul style="list-style-type: none"> - Local induction to migrant labor should be organized and be implemented - Health and safety protocols to all workers must be implemented - Establishment and dissemination of grievance mechanism to affected communities - Consultation/Updating of the project activities with the representatives of the community
Public services and utilities	Competition for basic services (i.e., health, housing)	<ul style="list-style-type: none"> - Sustained coordination between project proponent and local authorities - Integration of project activities in local plans and programs
	Resource competition (i.e., water, food)	
Community health and safety	Spread of infectious diseases	<ul style="list-style-type: none"> - Strengthen local health system - Strictly implement appropriate measures that address the incidence of respiratory diseases
	Increase in respiratory diseases	
	Vehicular accidents	<ul style="list-style-type: none"> - Develop and implement traffic management plan - Coordinate project activities with local authorities - Post appropriate signage and information on vehicular traffic
	Air pollution (dust and odor)	<ul style="list-style-type: none"> - Implement appropriate measures that control dust, odor, and noise - Limit noise-generating activities to daytime only
	Noise pollution	

Component	Potential Impacts	Generic Mitigating Measures ²³
		- Coordinate project activities with surrounding communities
Occupational health and safety	Workplace accidents	- Keep record of workplace accidents
	Spread of infectious diseases	- Regular conduct of toolbox meetings - Provision of appropriate PPEs - Encourage sanitary practices among workers - Conduct of regular health check-ups among workers - Provision of appropriate health facilities for workers
Heritage and culture	Chance and accidental finds	- Develop and implement a chance find procedure
	Disturbance to existing heritage/cultural sites	- Rehabilitation, if needed
Operation Phase		
Mobilization and demobilization of filling materials	Negative perception and/or social tension	- A transportation management plan should be developed and be implemented that includes usage of material cover during material transportation - Regular spraying of water on the streets when mobilization is performed during a particular hot day at least twice a day - Implement stakeholder engagement plan that includes consultation and dissemination of information regarding the mobilization and demobilization - Establish Grievance Redress Mechanism
Visual impact	Visual impact	- Ensure proper covering of the vehicle during waste transport - Provide vehicle wheels washing bay at the exit of the landfill - Schedule waste transportation hours avoiding heavy traffic and peak hours
Litter	Litter	- Proper covering of the vehicle during waste transport
Occupational Health and Safety	Dust generation from hauling trucks, placement of waste, cover, capping and restoration of materials	- Deposition of waste in small well-defined cells, protected by windbreaks - Establishing frequent waste collection schedules - Optimize waste collection routes to minimize distance travelled and overall fuel use and emission
	Gas emission	- Design a landfill gas collection system and operate in accordance with the applicable national requirements
	Emission of bio-aerosols such as CH ₄ H ₂ S	- Design a landfill gas collection system and operate in accordance with the applicable national requirements
	Ambient air quality decrease due to the generation of CO ₂	- Design a landfill gas collection system and operate in accordance with the applicable national requirements
Noise Quality	Noise from site operations and waste haulage traffic	- Use of mobile noise barriers as necessary - Use of modern, well-maintained mobile plant fitted with noise suppressors
	The landfilling operation will involve, <i>inter alia</i> , the extensive use of heavy and large mobile plant and equipment, including landfill compactors, bulldozers, dump trucks, excavators and front-end loaders	- Utilize the vehicle that has pass the emission test
Odor quality	Odors at landfill sites are generated from the decomposition of waste and are greatest during the	- Diversion of organic wastes to the composting yard where odor suppressors (i.e., phosphate rock, is mixed with the organic wastes);

Component	Potential Impacts	Generic Mitigating Measures ²³
	<p>movement and placement of waste at the composting yard and landfill.</p> <p>Odor from leachate in the treatment ponds and during leachate treatment may be significant if not properly controlled.</p>	<ul style="list-style-type: none"> - <i>Provision of tarpaulin covers on windrows and on matured compost;</i> - Acceptance only of conforming wastes for disposal - <i>Prompt (immediate) compaction following deposition;</i> - Application of daily cover, at least 100mm thick, to all exposed surfaces of waste - <i>Collection and venting or flaring of landfill gas to reduce odor impacts; and</i> - <i>Use of odor counter-actant and/or masking sprays – however, these are not recommended unless odor becomes a chronic problem</i>
Water Quality	<p>Risk of surface water and groundwater pollution from breach of site containment measures</p> <p>Leachate - Given the proximity of the site to unlined local surface watercourses and the high groundwater table, any substantial or concentrated release of leachate from the landfill could impact local water quality</p>	<ul style="list-style-type: none"> - Minimize the daily exposed working face and use perimeter drains and landfill cell compaction, slopes and daily cover materials to reduce infiltration of rainfall into the deposited waste - Prevent run-on of precipitation into the active area of the landfill - Capping system and internal berms and drains during cellular filling to minimize the quantity of leachate generated - Active control of leachate levels to less than 300 mm above the top of the basal containment layer in order to minimize the head of leachate on the basal lining system - Leachate collection and abstraction system to remove leachate from the landfill. Leachate will be re-circulated through deposited waste to reduce its strength or sent to the leachate treatment ponds for treatment prior to discharge - A comprehensive monitoring plan in order to provide an early warning of any uncontrolled release of leachate from the landfill. Regular monitoring of key indicator parameters, together with more extensive analysis should contamination be detected - <i>If leakage is occurring, undertake intensive monitoring to establish the part of the site from which leakage is occurring. Thereafter, pump out leachate from the affected area and maintain levels as low as possible</i> - If required and appropriate, instigate remedial engineering works to isolate the area where a breach in the lining system has occurred - <i>Maintain the effectiveness of the leachate treatment plant</i>
Aquatic biota	Disturbance of aquatic biota due to contamination of the water body from untreated leachate	<ul style="list-style-type: none"> - Regular maintenance of the leachate treatment plant and ensure the compliance with the quality standard - <i>Regular monitoring of effluent quality to ensure that the leachate treatment plant operates well</i>
Demography	Influx of workers and individuals seeking economic opportunities	<ul style="list-style-type: none"> - <i>Proper consultation and dissemination of information to local communities on employment option, alternatives and timing</i>
Occupational health and safety	<p>Workplace accidents</p> <p>Spread of infectious diseases</p>	<ul style="list-style-type: none"> - Provision of appropriate PPEs such as protective clothing, gloves, respiratory face masks and slip resistant shoes and hard soled safety shoes - Provide training regarding to the use of PPE and other related occupational health and safety related issues - Conduct monitoring on waste pickers occupational health and safety issues

Component	Potential Impacts	Generic Mitigating Measures ²³
		<ul style="list-style-type: none"> - Regular conduct of toolbox meetings - Encourage sanitary practices among workers - Conduct of regular health check-ups among workers - Provision of appropriate health facilities for workers - Conduct socialization regarding occupational health and safety matter to all waste pickers - Provide safety signages at the landfill site - Provide barricading in the landfill facilities - <i>Provide/encourage waste pickers to have regular medical check-up</i>
Community health and safety	Increase of water borne diseases due to contamination on untreated leachate in the water bodies	- <i>Regular maintenance of the leachate treatment plant and ensure the compliance with the quality standard</i>
	Hazardous waste	- <i>Collect hazardous waste and dispose by the sub-contracted licensed hazardous waste collector</i>
Traffic and transportation	Increased traffic in the area and surrounding (especially dump trucks), congestion and site access disruption	- <i>Implement traffic management plan</i>
Closure and After-use Phase		
Occupational health and safety	Occupational health and safety during cell capping works	- <i>Use of PPE among workers</i>
Water quality	Due to leachate generation	- <i>Treat the leachate channeling to the leachate treatment plant prior to discharging to water bodies</i>
Air quality	Landfill gas emission	- <i>Design a landfill gas collection system and operate in accordance with the applicable national requirements</i>
Landslide	Due to unstable waste pile	<ul style="list-style-type: none"> - Follow the design criteria in the landfilling method - <i>Conduct soil cover compaction</i>
Work termination and decreased local economy	Closure of landfill for waste pickers and waste collector, work termination	- <i>Proper information dissemination about the closure of the landfill to the affected communities. This should be done prior to the closure.</i>
Visual impact	Positive impact due to changes of landscape	- <i>Provision of soil layer as part of permanent capping layers for greenery</i>
Biodiversity	Biodiversity enhancement from revegetation at landfill area	- <i>Cover components should be consistent with post closure use and local climatic condition</i>
Water quantity	Decreasing run-off	<ul style="list-style-type: none"> - Impermeable layers should be the final capping as membrane to prevent infiltration into the landfill. - <i>Capping should be designed with proper sloping level and geo drains if necessary for run-off to flow</i>
Change of land use	Increasing area for green open space	- <i>It should be part of the closure plan is the monitoring arrangements on the utilization of green open space</i>

ANNEX J: STAKEHOLDER ENGAGEMENT ACTIVITIES, MINUTES OF PUBLIC CONSULTATIONS, SUMMARY OF MAIN TAKE-AWAYS AND ATTENDANCE SHEETS

Stakeholder Engagement Activities Undertaken for the Preparation of the ESMF

Stakeholder engagement activities conducted are summarized in **Table J-1**.

Table J-1: Summary of Stakeholder Engagement Activities during the Preparation of the ESMF

Date and Location	Stakeholders	Discussion
26 January 2021 Siem Reap Provincial Hall	Representatives from the following offices: <ul style="list-style-type: none"> Provincial authority Provincial administration Department of Energy and Mines Department of Environment Siem Reap City Hall 	<ul style="list-style-type: none"> Discussion on locations for consideration in selecting a proper sanitary landfill site, site option 1 for the rehabilitation and extension of the existing dumpsite and landfill site option 2 near the proposed WWTP presented by Siem Reap provincial authority
26 January 2021 1. Existing dumpsite in Anlong Pir Village in Siem Reap 2. Site option 2 near the WWTP	Waste-pickers	<ul style="list-style-type: none"> Interview with waste-pickers <ul style="list-style-type: none"> The discussion with the waste-pickers focused on their backgrounds such as tenure and the process of their jobs as waste-pickers. Specifically, also discussed were the steps in collecting waste; including where they sell the waste and the arrangement on what waste-pickers may scavenge at the site. Discussion on their daily activities, livelihood and their average income. Conducted drone assessment of the project site and its surrounding areas Site observation <ul style="list-style-type: none"> Geography People, including waste-pickers Water consumption Power connection Biodiversity Ecosystems Road condition General environment Operation of existing dumpsite Culture and protected area Surrounding Environment
27 February 2021 Trapeang Thom Commune	Commune chief of Trapeang Thom Commune	<p>Gathered data on the following:</p> <ul style="list-style-type: none"> Total number of the waste-pickers at the existing dumpsite All contacts of village chiefs from his commune (Trapeang Thom) Future plan for the development in his area Information related to the existing dumpsite His view on the existing dumpsite Information related to waste-pickers and GAEA Demonstrations staged by the waste-pickers Vulnerable people with the certificate of being the poor citizen. <ul style="list-style-type: none"> More than 70% of waste pickers classified as poor are assisted financially through the

		Livelihood Enhancement and Association of the Poor (LEAP) Project.
27 February 2021 Anlong Pir dumpsite	<ul style="list-style-type: none"> Waste-pickers (day/night shifts) Junkshop owner 	<ul style="list-style-type: none"> Work routine of waste-pickers Operation of junk shop near the dumpsite
28 February 2021 Anlong Pir Village	Village chief of Anlong Pir	Gathered data on the following: <ul style="list-style-type: none"> Information related to the existing dumpsite Living standard of waste-pickers from his village Over 90 % of the waste-pickers have been loaned from MFIs Complaints from the villagers against the dumpsite management such as smell, leachate, flies and the surroundings Information related to GAEA and CINTRI
	CINTRI representative for Siem Reap	<ul style="list-style-type: none"> CINTRI operation in Siem Reap Its future plan
28 February 2021 CINTRI dumpsite, Anlong Pir Village	Waste-pickers	<ul style="list-style-type: none"> Work routine of waste-pickers Information on CINTRI and GAEA
28 February 2021 Nearby villages from Anlong Pir and Phnom Dey dumpsites	<ul style="list-style-type: none"> Waste-pickers Villagers 	<ul style="list-style-type: none"> Work routine of waste-picker residents and how they engage with middlemen. Their daily/monthly income Family members involved in waste-picking job
17 April 2021 Key Informant Interviews (Siem Reap)	Commune and village chiefs from Trapeang Thom, Kandaek, Trapeang Toeum, Phnom Dei, Anlong Pir, Roka Kambot, La Ve, Soun	<ul style="list-style-type: none"> Current situation of the dumpsite Programs targeted for the waste-pickers (children, education, community integration) Plans related to solid waste management Livelihood plans related to the dumpsite Views/opinions regarding the possible sub project Quality of environment in the area Effect of the dumpsite in the surrounding area
18-19 April 2021 Focus Group Discussions (Siem Reap)	Anlong Pir and Phnom Dei Villages, Trapeang Thom Commune <ul style="list-style-type: none"> Waste-pickers Workers in waste-related businesses, Owners of waste-related business Tropheang Teom Village, Kandek Commune <ul style="list-style-type: none"> Farmers and fisherfolks Women's group 	<ul style="list-style-type: none"> Situation of waste-pickers <ul style="list-style-type: none"> Types of waste collected Situation of junkshop owners Situation of workers in waste-related businesses Situation of farmers, fisherfolks, and women's group

Documentation of Stakeholder Engagement Activities

Field Visit (27 February to 1 March 2021)

Results from field visits and direct interviews with the stakeholders:

- Useful data on the existing dumpsite and its history have been collected
- Different site options were presented
- The site options locations were visited
- Total number of waste-pickers at the existing dumpsite was provided
- Daily activities of the waste-pickers have been recorded
- Livelihood, living conditions of the waste-pickers and the nearby villagers were assessed
- Having learned about the markets of collected wastes and the flow of the business
- Having learned about the different views on the existing dumpsite between waste-pickers and the villagers (who are not waste-pickers)
- The surrounding environment of the existing dumpsite has been observed
- New contacts with other stakeholders were provided
- Local authorities from different levels have welcomed the proposed project and ready for assistance.
- Having learned about different views on the possible sub-project from various stakeholders



Figure J-1: Photos from the Field Visit (27 February to 1 March 2021)

Key Informant Interviews (17 April 2021)

Summary results from the Key Informant Interviews:

- Concerns regarding dumpsite entrance pathway, waste odor during wet season, air and water pollution, and waste management capacity were discussed
- Having learned about the absence of specific programs targeted towards waste-pickers
- Initiatives in enhancing the living condition of waste-pickers, such as cooperation with LEAP project and local NGOs, were provided
- Having learned that commune has no role or responsibility in managing the dumpsite
- Having learned about the views and opinions on the possible landfill sub-project near the WWTP location, if placed near the dam, people would worry about losing water source for rice fields and fishing opportunities.
- Environmental impacts of the dumpsite in Anlong Pir and Phnom Dei village before and after its establishment were assessed
 - o *Before:* People were not affected; no environmental, health, and livelihood issues
 - o *After:* Foul smell, leakage of leachate affected water quality and paddy fields, and sickness (e.g., diarrhea and flu)
- Positive and negative impacts of the dumpsite were explained
 - o *Positive:* Job creation and income-generating activities (e.g., collection of scrap metal and organic waste for raising animals)
 - o *Negative:* Damaged crops and reduced rice yields



Figure J-2: Photos from the Key Informant Interviews (17 April 2021)

Focus Group Discussions (18-19 April 2021)

Summary results from the Focus Group Discussions:

- Different perspectives on the dumpsite's effects were collected from various groups:
 - o Waste-pickers, owners and workers of waste-related business, farmers, fisherfolk, and women's group
- Having learned about the processes of waste-picking
- Types of wastes collected by waste-pickers and buying prices have been identified

- Having learned about the partnership arrangements between business owners and waste-pickers
- Employment details of workers in waste-related businesses nearby the dumpsite were presented
- Having learned about the potential risks of an engineered landfill on the livelihood of farmers, fisherfolks, and women's group
 - o *Rice planting*: Leachate leaks might affect paddy fields
 - o *Water quality*: Will be polluted and cause bad smell and less fish in the reservoir
 - o *Water in dam reservoirs*: Will be reduced due to the need for water in rice paddy irrigation, fishing, and drinking water for animals
- Environmental (land, water, air, and noise) and livelihood (people) contexts within the proposed sanitary landfill area were discussed
- Having learned about the participants' job alternatives for waste-picking if dumpsite were closed
 - o Livestock feeding, rice planting, construction workers, factory workers, etc.
- Insights on the assistance needed by participants were recorded
 - o Requested for sanitary landfill to not affect the health of the people and its surroundings, need for more knowledge and understanding of landfills



Figure J-3: Photos from Conduct of Focus Group Discussions (18-19 April 2021)

Summary Reports for Initial Stakeholder Engagement Activities

Key Informant Interviews (Siem Reap)



Preparation Studies for Environmental and Social Framework Documents for Proposed World Bank Financed Solid Waste and Plastic Management Improvement in Cambodia

Cambodia Solid Waste and Plastic Management Improvement Project

Results of the Key Informant Interview

A. Overview of the Key Informant Interviews (KII)

Due to the COVID-19 emergency situation, the Royal Government of Cambodia (RGC) has imposed restrictions on the travel to the project site to conduct face-to-face onsite interview session. This activity was conducted via online by the consultant from CEST and KCC, commissioned by the World Bank.

The blended approach was implemented which means that the consultants were offsite while the participants were onsite at the venue and this was made possible with the assistance from the local government of Siem Reap and the participating communes. The onsite key informants were gathered in one place observing the COVID-19 health and safety protocols on disinfection, social distancing and wearing of face mask to avoid further transmission of the viral infections.

With the necessary adjustments made in conformity with the prevailing COVID-19 restrictions in Cambodia, the consultant facilitated the conduct of the key informant interview session via online platform where the interviewer/facilitator was mediated through an internet-based communication platform. The process include posing and asking the key questions to draw out the participants' insights on the potential risks and impacts and plans regarding old dumpsite and the proposed new landfill in line with the solid waste and plastic management project of the government. Local language was used in the conversation to facilitate greater understanding, dialogue and participation throughout the session.

The participants were represented by the Commune and Village Chiefs of the following: Trapeang Thom, Kandaek, Trapeang Toeum, Phnom Dei, Anlong Pir, Roka Kambot, La Vea, Soung.

B. Summary of KII Results

Key Questions	Response	Response Made By
What is the current situation on the dumpsite?	<p>During interview with all key informants, they all have raised their concerns related to the following: dumpsite entrance pathway; waste odor during wet season; air and water pollution; and waste management capacity at dumpsite of private companies.</p> <ul style="list-style-type: none"> • Dumpsite entrance pathway: The situation of the entrance pathway located around 600 m from NR 6 to existing dumpsite is not good because this pathway is bumpy with many potholes and dusty condition which has caused difficulty in transporting solid waste to the dumpsite. Furthermore, the dust from the pathway has affected health of people living along. Thus, they are all requesting for the rehabilitation of this pathway by paving concrete road if the project really aims to improve the existing dumpsite. • Waste odor during wet season: The waste odor during wet season is described as much worse than during the dry season and the odor is diffused approximately up to 2 km radius from the dumpsite. Before, the people living in the villages around dumpsite found it difficult to live with the 	All Participants



Preparation Studies for Environmental and Social Framework Documents for Proposed World Bank Financed Solid Waste and Plastic Management Improvement in Cambodia

Key Questions	Response	Response Made By
	<p>presence of the dumpsite but currently, it has been observed that villagers have seemingly adapted to the present situation they are in.</p> <ul style="list-style-type: none"> • Water pollution: During wet season, the leachate from dumpsite flowed into surrounding small canals, rice fields and farmlands. People who have lands around there cannot do farming activities. Fish was also extinguished. Furthermore, the water in small canals cannot be used for animals because it has been leachate polluted. • Air pollution: Frequently, in the dry season, the waste was burned in the dumpsite. The smoke emitted from waste burning seriously polluted the surrounding environment and affected health of people living around the dumpsite. • Waste management capacity at dumpsite: The dumpsite covers approximately 17 ha of land in which 8 ha belong to CINTRI and 9 ha belong to GAEA. As observed, the actual situation of waste management of both companies still remains poor, especially that the wastes are scattered around the area. 	
Does the commune have specific programs targeted to waste pickers, including programs specific to child waste pickers, education, and community integration?	<p>We do not have specific programs targeted to waste pickers, including children waste pickers, education, and community integration. Generally, the relevant local authorities do not allow the children who are studying to pick waste in the dumpsite because we worry about the effect to their study. But currently, because of COVID 19 outbreak, all schools in province have been closed for a while. Now we see there are some children going to the dumpsite to pick waste for additional income. Even local authorities have no specific programs targeting waste pickers, but they are enhancing the living condition of waste pickers through cooperation with LEAP project. The Livelihood Enhancement and Association of the Poor - LEAP Project is working with the purpose to improve access of the poor and vulnerable households in communities to financial service, opportunities for generating income. More than 70% of households of waste pickers are the targeted group of the project.</p>	Mr. Soy Seiha, Trapeang Thom Commune Chief
Does the village/commune have plans on or related to SWM? Is it included in the VDC plan/Commune Investment Plan? Could the study team be provided with a copy of said documents?	<p>The dumpsite at Trapeang Thom commune is being operated by two private companies, GAEA and CINTRI within 8 ha and 9 ha of land, respectively, with direct technical management aspect from relevant provincial departments and provincial hall; thus, commune level has no role or responsibility in managing this dumpsite. It means that it is not within the capacity of the commune. Regarding SWM plan, the commune did not integrate into commune investment plan (CIP).</p>	Mr. Soy Seiha, Trapeang Thom Commune Chief
Does the village/commune have plans for groups that depend on the dumpsite for their livelihood? Is it included in the VDC plan/Commune Investment Plan?	<p>Commune has no plan to integrate in to CIPs for group that depends on the dumpsite for their livelihood, but commune is enhancing the living condition of waste pickers through cooperation with LEAP project and other local NGOs.</p>	Mr. Soy Seiha, Trapeang Thom Commune Chief
What are your views/opinions regarding the proposed project and the possible landfill site alternatives?	<p><u>On the Existing Dumpsite</u> The dumpsite area is located in Anlong Pir village, since it has been going on for more than ten (10) years. It cannot be acceptable due to the dumpsite condition which has not been properly implemented by private companies and does not comply with the terms of the contract between the companies and</p>	All Participants



Preparation Studies for Environmental and Social Framework Documents for Proposed World Bank Financed Solid Waste and Plastic Management Improvement in Cambodia

Key Questions	Response	Response Made By
	<p>relevant provincial departments / provincial hall. Meanwhile, this is being agreed among local authority, waste picker and private companies to operate the dumpsite by allowing waste pickers to enter the dumpsite to collect valuable waste before being covered by soil. If not allowed to pick up, they will protest against dumping operation here, as they get part of the revenue from the dumpsite. Therefore, there is an understanding between the local people and the dumping company to make this place work until now.</p> <p><u>On the Propose Landfill</u> Currently, this area is a potential eco-tourist area by connecting to the Tonle Sap Lake and otherwise this area is a flooded forest during the rainy season and is becoming an important fish conservation area.</p> <p>Nearly 100% of people living inside this area are farmers with main occupation in farming and fishing. Generally, they are able to plant rice 3 times per year by depending on water source for irrigation from 78 dam. The 78 dam is the main water source for rice fields, animals and fishing. If proposed landfill will be placed near the dam, the people would worry about losing water source for rice fields and fishing opportunity also.</p>	
Could you describe the quality of the environment in the area (in the area where the dumpsite is and its surrounding areas) before the dumpsite was established and now?	<p><u>Before dumpsite establishment:</u> 1. Anlong Pir village It did not affect people living in the village for environmental aspect, they could cultivate and do fishing, etc. 2. Phnom Dei village There was no bad impact to people living in the village for environmental issue and the health situation was normal condition.</p> <p><u>Current situation after established dumpsite:</u> 1. Anlong Pir village There are a lot of exposure from the sanitation sector such as bad smell spreading around 2 to 3 km around the dumpsite, the water quality around the dumpsite is not so good due to the leakage of some leachate flowing into the stream, drilled wells, ponds. It has affected the paddy fields, reducing rice yields and has also affected drinking water; especially in the rainy season, water in the village cannot be consumed and some people usually get diarrhea and flu. 2. Phnom Dei village There is foul odor and some people complained on the stench, but now people are accustomed to the smell of rubbish and there are health problems for people with chickenpox.</p>	<p>Mr. Chhim Ley, Anlong Pir Village Chief</p> <p>Mr. Lios Pheum, Phnom Dei Village Chief</p>
How has the dumpsite affected its surrounding area? The community? The residents? (Positive and Negative)	<p><u>Positive Impacts:</u> Can create jobs and additional income for people as well as provide convenience for people to dump garbage.</p> <p>Most of the villagers, about 70%, choose to collect scrap metal. Some of the families go together to earn their living and can collect some organic waste for raising animals.</p> <p><u>Negative Impacts:</u></p>	<p>Mr. Chhim Ley, Anlong Pir Village Chief</p> <p>Mr. Lios Pheum, Phnom Dei Village Chief</p>



Preparation Studies for Environmental and Social Framework Documents for Proposed World Bank Financed Solid Waste and Plastic Management Improvement in Cambodia

Key Questions	Response	Response Made By
	During the rainy season, the quality of leachate leaking from dumpsite affects the quality of groundwater, such as unusable water from the well; some crops are damaged; and, rice yields are reduced. And, there are flies from the dumpsite coming to the villages.	

C. Participants

The participants were composed of a total of eight (8) key representatives from the eight villages surrounding the dumpsite in Trapeang Thom with seven (7) males and one (1) female in attendance. The list of the KII participants is found in the table below.

	Name	Sex	Age	Position	Address	Phone Number
1	Soy Seiha	M	N/A	Commune chief	Trapeang Thom	097 959 1969
2	Meol Sokongkea	F	N/A	Commune chief	Kandaek	017 813 766
3	Khaom Luos	M	N/A	Village chief	Trapeang Toeum	092 835659
4	Lios Pheum	M	N/A	Village chief	Phnom Dei	012 184234
5	Chhim Ley	M	N/A	Village chief	Anlong Pir	092 270 255
6	Chhum Ya	M	N/A	Village chief	Roka Kambot	097 304 206
7	Chuch So	M	N/A	Village chief	La Vea	092 911 027
8	Saem Ly	M	N/A	Village chief	Soung	077 707 986

D. Attendance Sheet

THE ATTENDANCE LIST OF THE FOCUS GROUP DISCUSSION

Name of meeting : _____
 Date : 17-04-2021
 Location : គោរម្យត្រពាំងធំ
 Total Participants : 8 (Male= 7 Female= 1)

No.	Name	Gender	Position	Organization	Contact Number	Signature
1	ស៊ី សេអ៊ា	Male	Commune chief	គោរម្យត្រពាំងធំ	097 959 1969	[Signature]
2	ម៉េល សុកងក្លា	Female	Commune chief	កង្កែប	017 813 766	[Signature]
3	ខាម លួស	Male	Village chief	គោរម្យត្រពាំងធំ	092 835659	[Signature]
4	លីស ផ្សេម	Male	Village chief	ភ្នំដេញ	012 184234	[Signature]
5	ឌីម លេ	Male	Village chief	គោរម្យត្រពាំងធំ	092 270 255	[Signature]
6	ឌីម យ៉ា	Male	Village chief	គោរម្យត្រពាំងធំ	097 304 206	[Signature]
7	ច្រូច សូ	Male	Village chief	គោរម្យត្រពាំងធំ	092 911 027	[Signature]
8	សាម លី	Male	Village chief	គោរម្យត្រពាំងធំ	077 707 986	[Signature]

Focus Group Discussions (Siem Reap)

Preparation Studies for Environmental and Social Framework Documents for Proposed World Bank Financed Solid Waste and Plastic Management Improvement in Cambodia

Cambodia Solid Waste and Plastic Management Improvement Project

Results of the Focus Group Discussions

A. Overview of the Focus Group Discussions (FGDs)

Due to the COVID-19 emergency situation, the Government of Cambodia has imposed restrictions on the travel to the project site to conduct face-to-face onsite focus group discussions. This activity was conducted via online by the consultant from CEST and KCC team, commissioned by the World Bank.

The blended approach was implemented which means that the consultants were offsite while the participants were onsite at the venue and this was made possible with the assistance from the local government of Siem Reap and the participating communes and villages. The onsite focus group discussions were gathered in one place observing the COVID-19 health and safety protocols on disinfection, social distancing and wearing of face mask to avoid further transmission of the viral infections.

With the necessary adjustments made in conformity with the prevailing COVID-19 restrictions in Cambodia, the consultant facilitated the conduct of the focus group discussions via online platform where the interviewer/facilitator was mediated through an internet-based communication platform. The process include posting and asking the key questions to draw out the participants' insights on the potential risks and impacts and plans regarding old dumpsite and the proposed new landfill in line with the solid waste and plastic management project of the government. Local language was used in the conversation to facilitate greater understanding, dialogue and participation throughout the session.

The participants were waste-pickers, workers in waste –related business, owners of waste related business, farmers and fisherfolk and women's group. The waste-picker identified from different categories such as children with 14 years old and below, youth 15-20 years old both male and female, women with 20 years old and above and other vulnerable groups (elderly, PWDs). They are located in Along Pir and Phnom Dei villages, Trapeang Thom commune while Farmers and fisherfolk and women's group were from Tropheang Teom Village, Kandek Commune.

B. Summary of FGD Results

1. Waste-pickers

The participants of this FGD were waste-pickers - further classified into five (5) groups: (a) Children with 14 years old and below (boys and girls), (b) youth 15-20 years old (male and female), (c) women 15-20 years, (d) men 15-20 years old, (e) vulnerable groups (elderly, PWDs).

Categories and Key Questions	Responses
Length of time working as a waste-picker	The participants have been working as waste-pickers from two (2) months to 13 years while elderly people have worked since the dumpsite started opening in 2007.
Steps in waste-picking (from collecting waste down to their sale) and Frequency of doing these steps per week	Generally, wastes are collected after being dumped by the truck, then the collected wastes are sundried at the dumpsite or at home. After that, the waste-pickers transport collected wastes to their home.



Preparation Studies for Environmental and Social Framework Documents for Proposed World Bank Financed Solid Waste and Plastic Management Improvement in Cambodia

Categories and Key Questions	Responses
	Two (2) weeks later, the dried wastes are segregated and transported to sell at junkshop located in Kantraing commune, Bakong District, Siem Reap Province.
Location site where livelihood activities are commonly conducted (within the dumpsite)	The waste-pickers set-up a tent or an umbrella for their leisure time with their family. There are approximately 50 to 60 tents/umbrellas at the dumpsite. There are also drinks stalls for them inside dumpsite.
Where do you sell the waste that you collect?	After two (2) weeks of waste-picking, generally, they transport solid waste to sell at the following places: Angkrang market located in Angkrang village, Kantraing commune, Bakong district, Siem Reap province. Except for some of them who sell to the nearby junkshop because they have no means of transportation and/or their homes are also close to that junkshop, while others have buyers who directly buy at home.
On the arrangement for waste-picking at the dumpsite	The waste-pickers are free to pick up solid waste in the dumpsite. There is no established grouping arrangement. There are no "written" rules or regulations, so to speak. But they follow and observe "first come, first pick up" norm. Scavenging solid waste is according to the ability of the individual waste-picker. The one who grabs the best location, where the waste is being dumped, picks the most. There is no form of arrangement fellow waste-pickers or waste-pickers and waste truck drivers.
On waste-pickers' borrowing money from the buyer or pay with waste collection (in kind) and form of other support and partnership	The participants said that they do not borrow money from any buyers in terms of solid waste trade. Only one of them had experienced borrowing money in advance from a junkshop without any interest as his family urgently needed some cash.

Type of Wastes Collected

There are 11 types of waste collected by the waste-pickers and accordingly, among these, the 5 topmost valuable items are the following:

- Copper (from electric wire, cuprum, brass etc.) at US\$ 4.75/kg;
- Aluminum type 1 (Beer cans, Soft drink can, discarded food wrap foils) at US\$1.38/kg;
- Stainless steel (Robinet, shower head etc.) at 0.88/kg;
- Aluminum type 2 (Window frame) at 0.75/kg; and,
- Plastic type 1 (Bottle of drinking water) at 0.14/kg. As for the organic fraction of waste (for livestock feeding) for 20 litres of volume, this is either sold or not but has a given value of US\$ 0.75 to a bucket.

The different type of wastes collected at the dumpsite located in Trapeang Thom, Siem Reap and sold to the surrounding junkshops, the value of wastes per kg and their ranking according to its value in terms of unit rate (in US\$) are described in the table below.

Type of Wastes Collected	For selling? (tick if Yes)	Unit	Unit Rate (USD)	Valuable (rank)
Copper (from electric wire, cuprum, brass etc.)	Yes	Kg	4.75	1
Aluminum type 1 (Beer cans, Soft drink can, discarded food wrap foils)	Yes	Kg	1.38	2



Preparation Studies for Environmental and Social Framework Documents for Proposed World Bank Financed Solid Waste and Plastic Management Improvement in Cambodia

Type of Wastes Collected	For selling? (tick if Yes)	Unit	Unit Rate (USD)	Valuable (rank)
Stainless steel (Robinet, shower head etc.)	Yes	Kg	0.88	3
Aluminum type 2 (Window frame,	Yes	Kg	0.75	4
Plastic type 1 (Bottle of drinking water)	Yes	Kg	0.14	5
Plastic type 2 (HDPE bottle such as soap, shampoo etc...)	Yes	Kg	0.13	6
Tin materials (can of milk powder, fast food etc...)	Yes	Kg	0.13	7
Paper type 1 (Carton, paper boxes, etc)	Yes	Kg	0.08	8
Paper type 2 (Book paper, A4 paper)	Yes	Kg	0.06	9
Plastic type 3 (Plastic bag)	Yes	Kg	0.04	10
Glass bottle	Yes	Kg	0.03	11
Organic waste (for livestock feeding) for 20 litres of volume	Yes/No	Bucket	0.75	

2. Junkshop Owners

A group of junkshop owners around the dumpsite with two (2) owners were the participants of this FGD. The owners were located in Anlong Pir village in which one of the owners had three (3) workers while the other no workers.

Length of Time in the Junkshop Business

The participants said that they have been running their junkshop business for about four (4) to five (5) years now while other junkshop owners have just started the business for about five (5) months only. They collect scraps from each household in the villages and from the individual waste-pickers to sell to the main junkshops at provincial center or vice versa.

Partnership Arrangement Between Business Owners and Waste Pickers

The operation is considered as a small business and also some just has started. There are times the main junkshop owner provided advance cash for the investment. There are also times that the junkshop owners have owed money from the waste-pickers (sellers) in case they are short of the floating capital while other junkshop owners do by giving cash advance to the waste-pickers and get paid back when their scraps are available.

Buying Price And Ranking Of The Most Valuable Waste

The buying price of the scraps is almost the same as the market price of other junkshops. The prices are not so much competitive. Normally, the profit range is between 30 Khmer Riels to 600 Khmer Riels per kilogram. Sometimes, the price varies for the exported items abroad and also depends on type of each item (waste). The most valuable item (waste) is copper material including electric wire, cuprum, brass, etc; and the unit price per kilogram is shown in the table below.

Item description	Buy in (Riel/kg)	Buy in (USD/Kg)	Sell out (Riel/kg)	Sell out (USD/Kg)
Copper (from electric wire, cuprum, brass etc)	20,000	5	20,500	5.125
Aluminum type 1 (Beer cans, Soft drink can, discarded food wrap foils...)	5,500	1.33-1.38	5,350-6,600	1.34-1.65



Preparation Studies for Environmental and Social Framework Documents for Proposed World Bank Financed Solid Waste and Plastic Management Improvement in Cambodia

Item description	Buy in (Riel/kg)	Buy in (USD/Kg)	Sell out (Riel/kg)	Sell out (USD/Kg)
Aluminum type 2 (Window frame, bike accessories etc.)	2,500-3,500	0.63-0.88	2,600-4,000	0.65-1
All kinds of steel	1,000-1,200	0.25-0.3	1,030-1,300	0.26-0.325
Plastic type 1 (Bottle of drinking water)	600	0.15	630-650	0.16
Plastic type 2 (HDPE bottle such as soap, shampoo etc...)	600	0.15	630-700	0.16-0.175
Tin material (can of milk powder, fast food etc.)	600-700	0.15-0.18	630-800	0.16-0.2
Paper type 2 (Book paper, A4 paper)	300-300	0.08	330-350	0.08-0.088
Paper type 1(Carton, paper box, etc.)	200-500	0.05-0.13	600-650	0.15-0.16
Glass bottle	100	0.03	130-150	0.03-0.038

3. Workers in Waste-related Businesses

A group of waste-related businesses nearby the dumpsite with two (2) workers from a junkshop were the participants of this FGD. The two workers from the junkshop were located in Anlong Pir village.

Key Questions	Responses
Type of work engaged in and type of business of the employer	Their works are scale weighing, bill checking, scrap preparing and waste-keeping/-stocking
Length in the work	One worker just started working for around half a month and the other worked been working for around one (1) month.
Terms of Employment	
Payment basis	With monthly payment basis
Amount paid	The salary is between 50 US dollar (20,000 Riels) to 125 US dollar (500,000 Riels)
Status of employment (regular, seasonal, temporary worker)	There is no contract agreement between both parties. They work seasonally, mostly during school vacation. They are temporary workers with no signed contract.
Working Hours	
Expected work duration	Working hours start from 7-11am and 1-5 pm, 7 days per week and no day-off.
Payment on days did not go to work	During the day-off, the salary is still paid only with permission from the owner.

4. Farmers, Fisherfolks, and Women's Group

A group of 12 farmers and fisherfolks were the participants for this FGD. The main occupation of all participants were farmer and second occupation as fisherfolk. The participants were located in Trapeang Toem village, Kandek commune where the landfill site alternative was proposed. Furthermore, a group of nine (9) women was also call to join this FGD to discuss the questions related to the proposed landfill.

The summary of the responses of the 12 farmers and fisherfolks are in the table below.

Key Questions	Responses
How long have you been farming/fishing?	They have been farming and fishing for between 20 to 47 years since they grew up. As the fishing is secondary occupation.



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Key Questions	Responses
How are your crops irrigated? Please specify provider and water source.	In the proposed sanitary landfill area, some farmers are planting rice 3 times per year. During the dry season they get water source from 78 dam reservoirs and in rainy season, people use rain water.
How will a construction of an engineered landfill potentially affect your livelihood?	For the engineered landfill to be constructed in the future, the anticipated potential affect to their livelihood identified are as follows: <ul style="list-style-type: none"> • Rice planting: Leaking of the leachate from the landfill might affect the paddy fields and the surrounding areas including around 130 households whose priority occupations are farmers. • The water quality will be extremely polluted causing bad smell, and less amount of fish in the reservoir • Reducing the amount of water inside the 78 dam reservoirs due to the need of water for rice paddy irrigation, fishing and drinking water for animals.

The summary of the responses of all the participants of this FGD are in the table below.

Key Questions	Responses
On the Environment	
Land	
In the past five (5) years, has the dumpsite area grown bigger or smaller?	Most participants mentioned up that the dumpsite area has grown bigger with more earth pits while few participants said that the dumpsite area is still the same due to the waste disposed into the deep pits and get covered.
In the past five (5) years, has the dumpsite area used only for dumping waste?	Yes, absolutely it is used for dumping waste only.
Water	
Are there nearby bodies of water? Where are they?	Surrounding the dumpsite area, there are some tube wells, open pits and ponds. Moreover, groundwater is the main source of water for daily use, and surface water is supplied for daily use through activities such as animal husbandry, cleaning, etc. However, waste-pickers in dumpsite need to buy drinking water. The pond is approximately 500m from the dumpsite. Furthermore, most households living in the villages near the dumpsite have their own wells. As for households living near the pond, they use the pond water for raising animals, watering crops and domestic livestock, but not for drinking.
In the past five (5) years, what are your observations on the quality of water in these water bodies?	The leachate from the dumpsite might leak into the rice fields and ponds. Thus, the water from that area causes bad smell in the rainy season while dry season could be a bit better.
How about groundwater in the area?	The quality of ground water especially drilled wells during dry season is fine no smell affected. Therefore, in the last 4 years, the smell was so bad but currently the smell looks better as the dumpsite has managed a better leachate leakage prevention system.
Air and Noise	
In the past five (5) years, what are your observations on the quality of air here in the dumpsite?	In the dry season there is less odor, but in the rainy season there is a strong odor from the garbage. Furthermore, the smell spreads around 1km away, especially when they burn the garbage but for the waste-pickers, they are not sensitive to smell.
In the past five (5) years, what are your observations here in the dumpsite in terms of noise?	Actually, there is a bit noise from the dump truck during night time but it is acceptable as they live a bit far from the access road.
People	



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Key Questions	Responses
In the past five (5) years, has the number of residents/families (if increasing or not), livelihood, income improvement, among others, changed?	The number of people living around the dumpsite seem to have increased with more income. Furthermore, many households have better living condition than before. Beside occupation as waste-pickers they have other main occupations such as farming, livestock raising, animal raising and doing small business.
On the Landfill Site Alternatives	
How will the project affect specific types of livelihood in case the dumpsite is closed down and a new landfill is on a different location instead of rehabilitation of the current dumpsite into an engineered landfill? How do you think can such impacts be mitigated?	If dumpsite was closed, all the participants said that they would go to find other jobs such as livestock feeding, rice planting, construction workers, factory workers etc. to do instead of waste-picking
Synthesis of impacts (c/o facilitator with support from documenter/s)	N/A
What assistance (i.e. services on health, water, sanitation) would you need if the impact will not be mitigated?	<ul style="list-style-type: none"> • Not yet aware of the form and technique of making a sanitary landfill • Requested to build the sanitary landfill that will not affect the health of the people and its surroundings. • Do not know/do not have experience and techniques to understand the landfill.



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Annexes

FGD Result (Group 1)

Name of Village:	Anlong Pir	Village code:
Name of Commune:	Tropeang Thom		
District:	Prasat Bakong		
Province:	Siem Reap		
Date of Interview:	18 April 2021		
Name of Interviewer:	Mr. Chhun Bunmeng		
Note taker:	Mrs. Kun Chantrea		
Facilitator:	Ms. Chhun Sokhom		
Title of FGD:	Waste pickers – Children: 14 years old and below; boys and girls		
Place of Interview:	Rest hall near dumpsite in Anlong Pir Village		
Date:	18 April 2021		
Starting time:	8:30 am		
Completion time:	10:00 am		

Participants' Profile

	Name	Sex	Age	Highest Level of Education Attained	No. of Family Members
1	Sanh Sokneang	Female	13	Grade 5	5
2	Bros Bora (<i>farmer</i>)	Male	13	Grade 4	6
3	In Hun	Male	10	Grade 3	6
4	Brors Sreylai	Female	14	Grade 6	6
5	Khoeun Vanndet	Male	13	Grade 4	4
6	Khoeun Seyha	Male	10	Grade 1	4
7	Thai Thy	Male	13	Grade 6	6

Participants' Response

1. How long have you been working as a waste picker?

They all mentioned up that they have been working as waste pickers for between 2 to 4 years.

2. Please detail the steps you do in waste picking (from collecting waste down to their sale). How often do you do these steps per week?

Generally, they collect waste after being dumped by the truck then get it sundried at the dumpsite or at home. After that, they transport it to their home. Two weeks later, the solid waste collected



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will be transported to at junk shop that is located in Kantraing commune, Bakong district, Siem Reap province.

3. Please locate the site where livelihood activities are commonly conducted (within the dumpsite).

They just have tents or umbrellas for their leisure time and use them as shelters in sunny or rainy days.

4. What type of waste they collect and type of waste they sell? Around how much do you earn per kg? What is the most valuable waste?

Types of Waste collected	For selling? (tick if Yes)	Unit	Unit Rate (USD)	Valuable (rank)
Copper (from electric wire, cuprum, brass etc)	Yes	Kg	4.75	1
Aluminum type 1 (Beer cans, Soft drink can, discarded food wrap foils...)	Yes	Kg	1.38	2
Stainless steel (Robinet, shower head etc.)	Yes	Kg	0.88	3
Aluminum type 2 (Window frame,	Yes	Kg	0.75	4
Plastic type 1 (Bottle of drinking water)	Yes	Kg	0.14	5
Plastic type 2 (HDPE bottle such as soap, shampoo etc...)	Yes	Kg	0.13	6
Tin material (can of milk powder, fast food etc...)	Yes	Kg	0.13	7
Paper type 1(Caton, paper box, etc)	Yes	Kg	0.08	8
Paper type 2 (Book paper, A4 Paper)	Yes	Kg	0.06	9
Plastic type 3 (Plastic bag)	Yes	Kg	0.04	10
Glass bottle	Yes	Kg	0.03	11
Organic waste (for livestock feeding) for 20 litres of volume	Yes/No	Bucket	0.75	

Note: the value of organic waste could not be ranked against other waste because it has a different unit.

5. Where do you sell the waste that you collect?

The collected waste is sold at Angkrang market in Angkrang village, Kantraing commune, Bakong district, Siem Reap province.

6. Do you have any form of partnership with waste collectors or waste truck driver?

At the landfill, they are free to pick up solid waste, no groups are divided .no rules, no regulations, no terns are divided, first come, first pick up. Picking up solid waste according to the ability of the individual waste picker, the one who grabs the best location, where the waste is being dumped, picks the most. So, there are no forms of partnerships between waste pickers and waste pickers or waste pickers and waste truck drivers.

**7. Do the waste collectors borrow money from the buyer or pay with waste collection (in kind)?
Form of other support and partnership?**

They did not borrow money from buyers.



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FGD Result (Group 2)

Name of Village:	Anlong Pir	Village code:	*****
Name of Commune:	Trapeang Thom		
District:	Prasat Bakong		
Province:	Siem Reap		
Date of Interview:	18 April 2021		
Name of Interviewer:	Mr. Chhun Bunmeng		
Note taker:	Mrs. Kun Chantrea		
Facilitator:	Ms. Chhun Sokhom		
Title of FGD:	Waste pickers – Youth: 15-20 years old; male and female		
Place of Interview:	Rest hall near dumpsite in Anlong Pir Village		
Date:	18 April 2021		
Starting time:	10:20 AM		
Completion time:	11:40 AM		

Participants' Profile

	Name	Sex	Age	Highest Level of Education Attained	No. of Family Members
1	Vath Sreyvy	Female	16	Grade 6	5
2	Bros Brem	Male	15	Grade 7	6
3	Heng Sokha	Male	19	Grade 9	5
4	Moeun Sophorn	Male	15	Grade 9	6
5	Seng Chanveasna	Male	17	Grade 6	5

Participants' Response

1. How long have you been working as a waste picker?

They have been working as waste pickers for 1, 3, 5, and 10 years.

2. Please detail the steps you do in waste picking (from collecting waste down to their sale). How often do you do these steps per week?

Generally, they collect waste after being dumped by the truck then get it sundried at the dumpsite or at home. After that, they transport it to their home. two weeks later, the solid waste collected will be transported to be sold at junk shop that is located in Kantraing commune, Bakong district, Siem Reap province.



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3. Please locate the site where livelihood activities are commonly conducted (within the dumpsite).

They just have a tent or umbrella for their leisure time with their family.

4. What type of waste they collect and type of waste they sell? Around how much do you earn per kg? What is the most valuable waste?

Types of Waste collected	For selling? (tick if Yes)	Unit	Unit Rate (USD)	Valuable (rank)
Copper (from electric wire, cuprum, brass etc)	Yes	Kg	4.75	1
Aluminum type 1 (Beer cans, Soft drink can, discarded food wrap foils...)	Yes	Kg	1.38	2
Stainless steel (Robinet, shower head etc.)	Yes	Kg	0.88	3
Aluminum type 2 (Window frame,	Yes	Kg	0.75	4
Plastic type 1 (Bottle of drinking water)	Yes	Kg	0.14	5
Plastic type 2 (HDPE bottle such as soap, shampoo etc...)	Yes	Kg	0.13	6
Tin material (can of milk powder, fast food etc...)	Yes	Kg	0.13	7
Paper type 1(Caton, paper box, etc)	Yes	Kg	0.08	8
Paper type 2 (Book paper, A4 Paper)	Yes	Kg	0.06	9
Plastic type 3 (Plastic bag)	Yes	Kg	0.04	10
Glass bottle	Yes	Kg	0.03	11
Organic waste (for livestock feeding) for 20 litres of volume	Yes/No	Bucket	0.75	

Note: the value of organic waste could not be ranked against other waste because it has a different unit.

5. Where do you sell the waste that you collect?

Collected waste is sold at Angkrang market in Angkrang village, Kantraing commune, Bakong district, Siem Reap province and at Svay Thom village.

6. Do you have any form of partnership with waste collectors or waste truck driver ?

At the dump site, free waste collection, no close connection been arranged among them. No prioritized groups are appointed.

7. Do the waste collectors borrow money from the buyer or pay with waste collection (in kind)? Form of other support and partnership?

One of them used to borrow money from a Junk shop owner without interest or signed agreement.



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FGD Result (Group 3)

Name of Village:	Anlong Pir	Village code:	*****
Name of Commune:	Trapeang Thom		
District:	Prasat Bakong		
Province:	Siem Reap		
Date of Interview:	18 April 2021		
Name of Interviewer:	Mr. Chhun Bunmeng		
Note taker:	Mrs. Kun Chantrea		
Facilitator:	Ms. Chhun Sokhom		
Title of FGD:	Waste pickers – Women: 20 years old and above		
Place of Interview:	Rest hall near dumpsite in Anlong Pir Village		
Date:	18 April 2021		
Starting time:	13:30 pm		
Completion time:	15:00pm		

Participants Profile

	Name	Sex	Age	No. of Family Members
1	Chin Savoeun	Female	42	8
2	Som Lis	Female	37	4
3	Hinh MaLai	Female	36	4
4	Kin Savoeun	Female	40	-
5	Chhiv Sar	Female	28	-
6	Chhiv Sang	Female	37	-
7	Kong Srey	Female	33	-
8	Chorm Sros	Female	35	-

Participants' Response

1. How long have you been working as a waste picker?

They have been working as waste pickers for between 2 months to 13 years.

2. Please detail the steps you do in waste picking (from collecting waste down to their sale). How often do you do these steps per week?

Firstly, they wear the gloves and boots, then wait for the dump truck to arrive. They collect waste after being dumped and then let it dry at the dumpsite or at home. After that, they transport it to their home. two or four weeks later. The dry solid waste is segregated and then transport to sell at junk shops.



3. Please locate the site where livelihood activities are commonly conducted (within the dumpsite).

They just have a tent or umbrella for their leisure time with their family. There are 50 to 60 tents or umbrellas at dump site. There are also drinks stalls for them inside dumpsite compound.

4. What type of waste they collect and type of waste they sell? Around how much do you earn per kg? What is the most valuable waste?

Types of Waste collected	For selling? (tick if Yes)	Unit	Unit Rate (USD)	Valuable (rank)
Copper (from electric wire, cuprum, brass etc)	Yes	Kg	4.75	1
Aluminum type 1 (Beer cans, Soft drink can, discarded food wrap foils...)	Yes	Kg	1.38	2
Stainless steel (Robinet, shower head etc.)	Yes	Kg	0.88	3
Aluminum type 2 (Window frame,	Yes	Kg	0.88	4
Plastic type 1 (Bottle of drinking water)	Yes	Kg	0.15	5
Plastic type 2 (HDPE bottle such as soap, shampoo etc...)	Yes	Kg	0.13	6
Tin material (can of milk powder, fast food etc...)	Yes	Kg	0.13	7
Paper type 1(Caton, paper box, etc)	Yes	Kg	0.08	8
Paper type 2 (Book paper, A4 Paper)	Yes	Kg	0.06	9
Plastic type 3 (Plastic bag)	Yes	Kg	0.04	10
Glass bottle	Yes	Kg	0.03	11
Organic waste (for livestock feeding) for 20 litres of volume	Yes/No	Bucket	0.75	

Note: the value of organic waste could not be ranked against other waste because it has a different unit.

5. Where do you sell the waste that you collect?

Some of them sell at the nearby junkshop because they have no means of transportation and their home also close to that junkshop, while others have buyers to directly buy at home.

6. Do you have any form of partnership with waste collectors or waste drunk driver?

At the dump site, free waste collection, no function divided. Besides, they had to grab each other when the dump truck arrived. Whoever grabs a good place will get a lot, while those who do not win will just stand and watch others picking up the waste.

**7. Do the waste collectors borrow money from the buyer or pay with waste collection (in kind)?
Form of other support and partnership?**

They did not borrow money from buyers.



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FGD Result (Group 4)

Name of Village:	Anlong Pir	Village code:	*****
Name of Commune:	Trapeang Thom		
District:	Prasat Bakong		
Province:	Siem Reap		
Date of Interview:	18 April 2021		
Name of Interviewer:	Mr. Chhun Bunmeng		
Note taker:	Mrs. Kun Chantrea		
Facilitator:	Ms. Chhun Sokhom		
Title of FGD:	Waste pickers – Men: 20 years old and above		
Place of Interview:	Rest hall near dumpsite in Anlong Pir Village		
Date:	18 April 2021		
Starting time:	15:30 pm		
Completion time:	17:00 pm		

Participants Profile

	Name	Sex	Age	No. of Family Members
1	Ngin Phouen	Male	73	8
2	It Soth	Male	50	3
3	Khean Norn	Male	53	5
4	Chhin Kosal	Male	-	4
5	Heang Han	Male	-	5
6	Toeum Vun	Male	-	4
7	Toeum Von	Male	-	5
8	Horn Hot	Male	-	4
9	Chan Ra	Male	-	6
10	Sim Rin	Male	-	5

Participants' Response

1. How long have you been working as a waste picker?

They have been working as waste pickers since the dumpsite started in 2007.

2. Please detail the steps you do in waste picking (from collecting waste down to their sale). How often do you do these steps per week?

Firstly, they wear the gloves and boots, then wait for the dump truck. They collect waste after the dump truck dumped and then let it dry at the dumpsite or at home. After that, they transport it to



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their home. from two to four weeks later, the solid waste is segregated and transported to be sold at junk shop at Phnom Dey village.

3. Please locate the site where livelihood activities are commonly conducted (within the dumpsite).

They just have a tent or umbrella for their leisure time with their family.

4. What type of waste they collect and type of waste they sell? Around how much do you earn per kg? What is the most valuable waste?

Types of Waste collected	For selling? (tick if Yes)	Unit	Unit Rate (USD)	Valuable (rank)
Copper (from electric wire, cuprum, brass etc)	Yes	Kg	4.75	1
Aluminum type 1 (Beer cans, Soft drink can, discarded food wrap foils...)	Yes	Kg	1.30	2
Stainless steel (Robinet, shower head etc.)	Yes	Kg	0.88	3
Aluminum type 2 (Window frame,	Yes	Kg	0.63	4
Plastic type 1 (Bottle of drinking water)	Yes	Kg	0.15	5
Plastic type 2 (HDPE bottle such as soap, shampoo etc...)	Yes	Kg	0.13	6
Tin material (can of milk powder, fast food etc...)	Yes	Kg	0.13	7
Paper type 1(Caton, paper box, etc)	Yes	Kg	0.08	8
Paper type 2 (Book paper, A4 Paper)	Yes	Kg	0.06	9
Plastic type 3 (Plastic bag)	Yes	Kg	0.04	10
Glass bottle	Yes	Kg	0.03	11
Organic waste (for livestock feeding) for 20 litres of volume	Yes/No	Bucket	0.75	

Note: the value of organic waste could not be ranked against other waste because it has a different unit.

5. Where do you sell the waste that you collect?

The buyers will come to directly buy at their homes. All buyers come from Angkrang market in Angkrang village, Kantraing commune, Bakong district, Siem Reap province.

6. Do you have any form of partnership with waste collectors or waste drunk driver?

At the dump site, free waste collection system, no prioritized groups have been appointed.

**7. Do the waste collectors borrow money from the buyer or pay with waste collection (in kind)?
Form of other support and partnership?**

They do not borrow money from buyers.



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FGD Result (Group 5)

Name of Village:	Anlong Pir	Village code:	*****
Name of Commune:	Trapeang Thom		
District:	Prasat Bakong		
Province:	Siem Reap		

Date of Interview:	18 April 2021
Name of Interviewer:	Mr. Chhun Bunmeng
Note taker:	Mrs. Kun Chantrea
Facilitator:	Ms. Chhun Sokhom

Title of FGD:	Waste pickers – Other vulnerable groups: elderly, PWDs
Place of Interview:	Rest hall near dumpsite in Anlong Pir Village
Date:	19 April 2021
Starting time:	15:30 pm
Completion time:	17:00 pm

Participants' Profile

	Name	Sex	Age	No. of Family Members
1	Nil Sat	Female	73	5
2	Heng Chan	Female	-	-
3	Sar Roem	Female	-	-
4	Chet Sao	Female	-	-
5	Heng Yom	Female	-	-
6	Nil Dorm	Female	-	-
7	Las Ky	Female	-	-
8	Chhoun Chun	Female	-	-
9	Chhoeung Yong	Female	-	-
10	Prom Korn	Female	-	-

Participants' Response

1. How long have you been working as a waste picker?

They have been working as waste pickers since the dumpsite started in 2007.



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**2. Please detail the steps you do in waste picking (from collecting waste down to their sale).
How often do you do these steps per week?**

They collect waste after being dumped by the truck and then let it dry at the dumpsite or at home. After that, they transport it to their home. two or four weeks later, the solid waste is segregated and transported to be sold at junk shop in Phnom Dey village.

3. Please locate the site where livelihood activities are commonly conducted (within the dumpsite).

They just have a tent or umbrella for their leisure time with their family.

4. What type of waste they collect and type of waste they sell? Around how much do you earn per kg? What is the most valuable waste?

Types of Waste collected	For selling? (tick if Yes)	Unit	Unit Rate (USD)	Valuable (rank)
Copper (from electric wire, cuprum, brass etc)	Yes	Kg	4.75	1
Aluminum type 1 (Beer cans, Soft drink can, discarded food wrap foils...)	Yes	Kg	1.30	2
Stainless steel (Robinet, shower head etc.)	Yes	Kg	0.88	3
Aluminum type 2 (Window frame,	Yes	Kg	0.63	4
Plastic type 1 (Bottle of drinking water)	Yes	Kg	0.15	5
Plastic type 2 (HDPE bottle such as soap, shampoo etc...)	Yes	Kg	0.13	6
Tin material (can of milk powder, fast food etc...)	Yes	Kg	0.13	7
Paper type 1(Caton, paper box, etc)	Yes	Kg	0.08	8
Paper type 2 (Book paper, A4 Paper)	Yes	Kg	0.06	9
Plastic type 3 (Plastic bag)	Yes	Kg	0.04	10
Glass bottle	Yes	Kg	0.03	11
Organic waste (for livestock feeding) for 20 litres of volume	Yes/No	Bucket	0.75	

Note: the value of organic waste could not be ranked against other waste because it has a different unit.

5. Where do you sell the waste that you collect?

Buyers will come to their home to buy. Buyers come from Angkrang market in Angkrang village, Kantraing commune, Bakong district, Siem Reap province.

6. Do you have any form of partnership with waste collectors or waste drunk driver?

At the dump site, free waste collection, no partnership among them has been formed. No nepotism. No favoritism.

**7. Do the waste collectors borrow money from the buyer or pay with waste collection (in kind)?
Form of other support and partnership?**

They do not borrow money from buyers.



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FGD Result (Group 6)

Name of Village:	Anlong Pir	Village code:
Name of Commune:	Trapeang Thom		
District:	Prasat Bakong		
Province:	Siem Reap		
Date of Interview:	19 April 2021		
Name of Interviewer:	Mr. Chhun Bunmeng		
Note taker:	Mrs. Kun Chantrea		
Facilitator:	Ms. Chhun Sokhom		
Title of FGD:	For owners of businesses around the dumpsite that are related to waste collection		
Place of Interview:	At their house in Anlong Pir Village		
Date:	19 April 2021		
Starting time:	9:00 am		
Completion time:	10:00 am		

Participants' Profile

	Name	Sex	Age	No. of Family Members
1	Sy Keut	Male	58	5
2	Yvon Sina	Male	37	4

Participants' Response

- How long have you been in this business? Please detail the steps you do from acquiring consolidated waste from waste pickers. What type of waste do you buy from them?
 - Having had the business for 4 to 5 years and other junkshop just started business for around 5 months.
 - With 4 outsourced workers.
 - Collect scraps from each household and sell it to main junkshops at provincial center or sometime the waste pickers bring it to the junkshop by themselves.

- Around how much do you earn per kg? What is the most valuable waste?

The buying price is almost the same as other junkshops and unlimited to the quantity of scraps. Normally, the profit range is from 30 riels to 600 riels per kilogram; sometime it varies for the exported ones and depends on the items.



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Item description	Buy in (Riel/kg)	Buy in (USD/Kg)	Sell out (Riel/kg)	Sell out (USD/Kg)
Copper (from electric wire, cuprum, brass etc)	20,000	5	20,500	5.125
Aluminum type 1 (Beer cans, Soft drink can, discarded food wrap foils...)	5,500	1.33-1.38	5,350-6,600	1.34-1.65
Aluminum type 2 (Window frame, bike accessories etc.)	2,500-3,500	0.63-0.88	2,600-4,000	0.65-1
All kinds of steel	1,000-1,200	0.25-0.3	1,030-1,300	0.26-0.325
Plastic type 1 (Bottle of drinking water)	600	0.15	630-650	0.16
Plastic type 2 (HDPE bottle such as soap, shampoo etc...)	600	0.15	630-700	0.16-0.175
Tin material (can of milk powder, fast food etc...)	600-700	0.15-0.18	630-800	0.16-0.2
Paper type 2 (Book paper, A4 paper)	300-300	0.08	330-350	0.08-0.088
Paper type 1(Carton, paper box, etc)	200-500	0.05-0.13	600-650	0.15-0.16
Glass bottle	100	0.03	130-150	0.03-0.038

3. Do you have any form of partnership with the waste picker? Have there been instances where waste pickers borrow money from you or ask for other forms of favor?

As it is small business and just recently operate this business, the main junkshop has provided some money to us for investment, and sometime owed to the seller first (waste pickers). While another local junkshop has provided some money to the sellers (waste pickers) and get back with the scraps.



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FGD Result (Group 7)

Name of Village:	Anlong Pir	Village code:
Name of Commune:	Trapeang Thom		
District:	Prasat Bakong		
Province:	Siem Reap		
Date of Interview:	19 April 2021		
Name of Interviewer:	Mr. Chhun Bunmeng		
Note taker:	Mrs. Kun Chantrea		
Facilitator:	Ms. Chhun Sokhom		
Title of FGD:	For workers in businesses around the dumpsite		
Place of Interview:	Rest hall near dumpsite in Anlong Pir Village		
Date:	19 April 2021		
Starting time:	7:30 am		
Completion time:	9:00 am		

Participants' Profile

	Name	Sex	Age	Highest Level of Education Attained	No. of Family Members
1	Tann Rithy	Male	14	Grade 4	8
2	-	Female	20	Grade 11	8

Participants' Response

- Ask participants what type of work they engage in and the type of business of their employer.
 - Work in scale weighing section and billing.
 - Scrap packaging and waste keeping/ stocking.
- How many years have you been working there?
 - Started work for around half a month
 - Started work for around one month
- Terms of employment:
 - How are you paid?
With monthly payment.
 - How much are you paid?
The salary is between 50 US dollars (20,000 Riel) to 125 US dollars (500,00 Riels).



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c. Are you hired as a regular, seasonal, or temporary worker? Please elaborate.

- There is no contract agreement between both parties.
- Working as seasonal period during school vacation.
- Temporary worker, no contract.

4. Working hours:

a. From what time up to what time are you expected to work?

Working hours start from 7-11 am and 1-5 pm, 7 days per week and no day-off.

b. Do you also get paid on days when you did not go to work?

During the day off, the salary is still paid in case there is a permission from the owner.



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FGD Result (Group 8 and 9)

Name of Village:	Anlong Pir	Village code:	*****
Name of Commune:	Trapeang Thom		
District:	Prasat Bakong		
Province:	Siem Reap		

Date of Interview:	19 April 2021
Name of Interviewer:	Mr. Chhun Bunmeng
Note taker:	Mrs. Kun Chantrea
Facilitator:	Ms. Chhun Sokhom

Title of FGD 8:	Farmers and fisherfolk from the immediate surrounding community
Place of Interview:	Tropheang Teom Village, Kandek Commune
Date:	19 April 2021
Starting time:	2:00 pm
Completion time:	3:15 pm

Title of FGD 9:	Women's group from the immediate surrounding community
Place of Interview:	Tropeang Teom Village, Kandek Commune
Date:	19/04/2021
Starting time:	3:30 pm
Completion time:	4:50 pm

Participants' Profile

	Name	Sex	Age	No. of Family Members
1	Seang Sim	Male	50	6
2	Vy Hun	Male	39	3
3	San Phat	Male	59	8
4	Kaom Lous	Male	63	3
5	Mao Chan	Male	50	3
6	Sam Piseth	Male	41	4
7	Kaom Lai	Male	40	4
8	Sok Yun	Male	50	4
9	Ros Vichhun	Male	35	3
10	Nat Nuon	Male	36	3
11	Theuon Kea	Male	37	4
12	Eun Sam An	Male	40	5



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Participants' Profile for FGD 9

	Name	Sex	Age	No. of Family Members
1	Kaom Reuy	Female	-	-
2	Korng Ny	Female	-	-
3	Rae Vuon	Female	-	-
4	Chhuon Reung	Female	-	-
5	Song Pum	Female	-	-
6	Kaom Vann	Female	-	-
7	Ros Mao	Female	-	-
8	Suong Mai	Female	-	-
9	Nob Por	Female	-	-

Participants' Response

For Farmers and Fisherfolks

1. How long have you been farming/fishing?

They have been farming and fishing for between 20 to 47 years since they grew up. The fishing is their secondary occupation.

2. How are your crops irrigated? Please specify provider and water source.

In the proposed sanitary landfill location, some households are planting rice 3 times per year. During the dry season they get the water source from 78 Dam reservoir; and rain water is used by farmers in the rainy season.

3. How will a construction of an engineered landfill potentially affect your livelihood?

For Farmers and Fisherfolks

- If the proposed sanitary landfill area, there might be some concerns which will affect their livelihood as below:
- Rice planting: Afraid that there might be leachate leakage flowing into their paddy fields and it will affect the annual rice yields and environmentally affect the villagers' health .
- The amount of water inside the 78 dam reservoir will be reduced which will affect the irrigation system, fishing opportunity and drinking water for animals and livestock.
- The water quality will be extremely polluted which causes stench to the surrounding areas and fishing yields will be less.

For Women's Group

- Water quality: People living around the area are using the water for daily consumption, they are afraid that it will affect the yield of crops as there might have the leachate leakage flowing into their paddy fields.
- Health issues: Illness might arise due to possible increase of mosquitoes which will cause dengue fever



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- Amount of fish in the reservoir will be cut down and the fear of toxic fish cannot be eaten.
- During rainy season, it might cause flooding in the nearby villages, so the waste will be floating everywhere in those villages.

For All Participants

On Environment (changes over the past 5 years)

1. Land

a. Land Area: Has the dumpsite area grown bigger or smaller?

Most participants mentioned up that the dumpsite area has grown bigger with more earth pits while few participants said that the area of dumpsite is still the same due to the waste disposed into the deep pit and get covered layer by layer.

b. Land Use: Is the dumpsite area used only for dumping waste?

Yes, absolutely, it is used for dumping waste only.

2. Water

a. Are there nearby bodies of water? Where are they?

Surrounding the dumpsite area, there are some tube wells, open pits and ponds. Moreover, groundwater is the main source of water for daily use, and surface water is supplied for daily use through activities such as animal husbandry, cleaning, etc. However, waste pickers in dumpsite still buy drinking water. The pond is approximately 500m from the Dumpsite. Furthermore, most households living in the villages near the dumpsite have their own wells. As households living near the pond, they use the pond water for raising animals, watering crops and domestic livestock, but not for drinking.

b. What are your observations on the quality of water in these bodies?

The leachate from the dumpsite is leaking into the rice fields and ponds. Thus, the water from that area causes bad smell in the rainy season while dry season, the smell becomes a bit better.

c. How about groundwater in the area?

The quality of ground water especially drilled wells during dry season is fine, no smell affected. Therefore, in last 4 years, the smell was so bad but currently, the smell looks better as the dumpsite has reduced the leakage problem.

3. Air and Noise

a. What are your observations on the quality of air here in the dumpsite?

In the dry season there is less odor, but in the rainy season there is a strong odor from the garbage. Furthermore, the smell is around 1km away, especially when they burn the garbage but for the waste pickers, they are not sensitive to smell.



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b. What are your observations here in the dumpsite in terms of noise?

Actually, there is a bit noise from the dump truck during night time but it is acceptable as they live a bit far from the access road.

4. People

a. Has the number of residents/families (if increasing or not), livelihood, income improvement, among others, changed?

People living around the dumpsite seem to have the increased income. Furthermore, many households have living better condition than before. Beside occupation as waste pickers they have other main occupations such farming, livestock raising, animal raising and doing small business.

At the Existing Dumpsite

5. How will the project affect specific types of livelihood in case the dumpsite is closed down and a new landfill is on a different location instead of rehabilitation of the current dumpsite into an engineered landfill? How do you think can such impacts be mitigated?

If dumpsite was closed, all the participants said that they would go to find other jobs such as livestock feeding, rice planting, construction worker, factory etc to do instead of waste picking.

6. Synthesis of impacts (c/o facilitator with support from documenter/s)

N/A

7. What assistance (i.e., services on health, water, sanitation) would you need if the impact will not be mitigated?

- Not yet aware of the form and technique of making a sanitary landfill
- Do not know, do not have experience and techniques to understand the landfill
- Requested to build the landfill which will not affect people's health , animals, birds and the surrounding environment,