

**Cambodia Solid Waste and Plastic Management  
Improvement Project**

**Environmental and Social Management Framework  
(ESMF)**

October 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
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
Paol	Project Area of Influence
PAP	Project-affected People
PDO	Project Development Objective
POM	Project Operation Manual
PRSC	Provincial Resettlement Sub-Committees
RDF	Refuse Derived Fuel
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

## ទិដ្ឋភាពទូទៅនៃគ្របខ័ណ្ឌគ្រប់គ្រងបរិស្ថាន និងសង្គម (ESMF)

ឯកសារគ្របខ័ណ្ឌគ្រប់គ្រងបរិស្ថាន និងសង្គម (ESMF) គឺជាឧបករណ៍ចម្បងសម្រាប់ការវាយតម្លៃ និងការគ្រប់គ្រងហានិភ័យលើបរិស្ថាន និងសង្គម និងហេតុប៉ះពាល់នៃការអនុវត្តគម្រោងគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិកនៅកម្ពុជា។ ESMF ជួយវិភាគអំពីហានិភ័យ និងហេតុប៉ះពាល់នៅពេលអនុវត្តសកម្មភាពរបស់គម្រោង និងសមាសភាពគម្រោងនីមួយៗ។ ការវិភាគហានិភ័យនឹងមិនទាន់អាចធ្វើទៅបានលុះត្រាមានការកំណត់សកម្មភាពជាក់លាក់។ ក្រៅពីការវាយតម្លៃហានិភ័យលើបរិស្ថាន និងសង្គម គ្របខ័ណ្ឌ ESMF ក៏ជាឯកសារបានដាក់បញ្ចូលផែនការគ្រប់គ្រង និងកាត់បន្ថយផលប៉ះពាល់របស់គម្រោង។ ESMF ក៏ជួយផងដែរ(១)របាយការណ៍វាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គមជាក់លាក់ (ESIAs) និងផែនការគ្រប់គ្រងបរិស្ថាន និងសង្គមជាក់លាក់(ESMP) សម្រាប់អនុគម្រោងនីមួយៗនៅពេលដែលទីតាំងត្រូវបានកំណត់ និងការរៀបចំផែនការលម្អិតសម្រាប់ការវិនិយោគហេដ្ឋារចនាសម្ព័ន្ធ និង (២) ឧបករណ៍គ្រប់គ្រងហានិភ័យសង្គមដែលជាតម្រូវការសម្រាប់អនុគម្រោងនីមួយៗ រួមទាំងឯកសារដូចជាផែនការដោះស្រាយផលប៉ះពាល់លម្អិត និងផែនការជនជាតិដើមភាគតិចលម្អិត។

### ការពិពណ៌នាអំពីគម្រោង

គម្រោងមានគោលបំណងធ្វើឱ្យប្រសើរឡើងនូវការគ្រប់គ្រងសំរាម សំណល់រឹង និងប្លាស្ទិកនៅក្នុងក្រុងសាកល្បងដែលត្រូវបានជ្រើសរើសនៅប្រទេសកម្ពុជាតាមរយៈ៖ (i) ការកែលម្អនូវលើការគ្រប់គ្រងសំរាម សំណល់រឹង ដែលអនុវត្តនៅតាមទីក្រុងសាកល្បង និងអាចយកទៅអនុវត្តបន្តនៅតាមក្រុងដទៃទៀតនៅក្នុងប្រទេស (ii) ការរៀបចំគោលនយោបាយច្បាប់គ្រប់គ្រងសំរាម សំណល់រឹង និង (iii) ការជួយគាំទ្រដល់ការកសាងសមត្ថភាពនៅទាំងថ្នាក់ជាតិ និងថ្នាក់ក្រោមជាតិ។

គម្រោងនឹងផ្តោតលើការគាំទ្រការកែលម្អនូវសេវាប្រមូលសំរាម សំណល់រឹង រួមទាំងការប្រមូលការដឹកជញ្ជូន និងការទាញយកមកប្រើប្រាស់ឡើងវិញ ការធ្វើប្រព្រឹត្តិកម្ម ការកែច្នៃការចាក់ចោលចុងក្រោយ និងការស្តារឡើងវិញនូវថ្លៃដើមដោយធ្វើការកែលម្អនៃការប្រមូលថ្លៃសេវាប្រមូលសំរាម។ គម្រោងនេះនឹងជួយគាំទ្រដល់ការកែលម្អនូវការត្រួតពិនិត្យតាមដាន និងការពង្រឹងនៃការអនុវត្តរបស់ក្រុមហ៊ុនគ្រប់គ្រងសំរាមសំណល់រឹងឯកជន ការគ្រប់គ្រងព័ត៌មានប្រកបដោយប្រសិទ្ធភាព និងមានភាពជឿជាក់ទុកចិត្តបាន និងការចូលរួមរបស់ប្រជាពលរដ្ឋ និងព័ត៌មានសាធារណៈ។ ការកសាងសមត្ថភាព និងជំនួយបច្ចេកទេសនឹងផ្តោតទៅលើការកែលម្អនៃការអនុវត្តរបស់វិស័យឯកជនតាមរយៈការផ្តល់សេវាប្រឹក្សាប្រតិបត្តិការ។ នៅថ្នាក់មូលដ្ឋាន គម្រោងនេះនឹងជួយគាំទ្រដល់ការអនុវត្តស្តារតីនៃអនុក្រឹត្យលេខ១១៣ របស់កម្ពុជា ជាពិសេសមាត្រា៩ ដែលបានចែងថា "រដ្ឋបាលក្រុង ស្រុកមានតួនាទីគ្រប់គ្រងសំរាម សំណល់រឹងទីប្រជុំជនក្នុងដែនសមត្ថកិច្ចរបស់ខ្លួន"។ គម្រោងនេះក៏នឹងគាំទ្រដល់ការរៀបចំគោលនយោបាយស្តីការគ្រប់គ្រងប្លាស្ទិក និងការកែលម្អដល់ការគ្រប់គ្រងប្លាស្ទិក ដើម្បីកាត់បន្ថយបរិមាណកាកសំណល់រឹងដែលចាំបាច់ត្រូវប្រមូល បង្កើនការទាញយកមកប្រើប្រាស់ឡើងវិញ ប្រត្រូវទុកដាក់ចុងក្រោយ និងការកែច្នៃឡើងវិញ និងរួមចំណែកក្នុងការកាត់បន្ថយកាកសំណល់ប្លាស្ទិកកុំឱ្យធ្លាក់ចូលទៅក្នុងផ្លូវទឹក (ស្ទឹង ប្រលាយ) និងទឹកសមុទ្រ។

សមាសភាគចម្បងនៃគម្រោងមានចំនួនបី និងសមាសភាគទី៤ពាក់ព័ន្ធសង្កេតបន្ទាន់ ដែលនឹងត្រូវបានអនុវត្តក្នុងរយៈពេលប្រាំមួយ (៦) ឆ្នាំ មានដូចជា៖

- សមាសភាគទី១:** ការអភិវឌ្ឍន៍ និងការពង្រឹងច្បាប់ បទប្បញ្ញត្តិ គោលនយោបាយ និងគ្របខ័ណ្ឌស្ថាប័ន
  - សម្រាប់ការគ្រប់គ្រងសំរាម សំណល់រឹង និងប្លាស្ទិក។
- សមាសភាគទី២:** ការគ្រប់គ្រងសំរាម សំណល់រឹង និងប្លាស្ទិកដោយរួមបញ្ចូលគ្នារួមមានការធ្វើផែនការ ការត្រួតពិនិត្យតាមដាន និងការកសាងសមត្ថភាពសម្រាប់ក្រុង/ស្រុកដែលបានចូលរួម
- សមាសភាគទី ៣:** ហេដ្ឋារចនាសម្ព័ន្ធនៃការគ្រប់គ្រងសំរាម សំណល់រឹង និងប្លាស្ទិក
- សមាសភាគទី ៤:** ការឆ្លើយតបជាបន្ទាន់ចំពោះហេតុការណ៍ណាមួយដែលអាចកើតឡើង

សមាសភាគទី១៖ ការអភិវឌ្ឍន៍ និងការពង្រឹងច្បាប់ បទប្បញ្ញត្តិ គោលនយោបាយ និងក្របខ័ណ្ឌនៃស្ថាប័នសម្រាប់ការគ្រប់គ្រងសំរាម សំណល់រឹង និងប្លាស្ទិក

ការអនុវត្តសកម្មភាពនៃសមាសភាគនេះមានគោលបំណងអភិវឌ្ឍន៍ និងពង្រឹងច្បាប់ បទប្បញ្ញត្តិ គោលនយោបាយ និងក្របខ័ណ្ឌស្ថាប័នដែលពាក់ព័ន្ធនឹងការគ្រប់គ្រងសំរាមសំណល់រឹង និងប្លាស្ទិក រួមមាន៖ (ក) ការអភិវឌ្ឍន៍ និងការពង្រឹងច្បាប់ បទប្បញ្ញត្តិ អនុក្រឹត្យ គោលនយោបាយ និងគោលការណ៍ណែនាំដែលទាក់ទង នឹងការគ្រប់គ្រងសំរាម សំណល់រឹង។ (ខ) ការអភិវឌ្ឍន៍ និងការពង្រឹងច្បាប់ បទប្បញ្ញត្តិ អនុក្រឹត្យ គោលនយោបាយ និងគោលការណ៍ណែនាំ ដែលពាក់ព័ន្ធនឹងការគ្រប់គ្រងប្លាស្ទិក ដើម្បីបង្កើនការកាត់បន្ថយ ការប្រើប្រាស់ឡើងវិញ និងការកែច្នៃប្លាស្ទិកឡើងវិញ និង(គ) ការកសាងសមត្ថភាពនៃស្ថាប័នពាក់ព័ន្ធរួមមាន ក្រសួងបរិស្ថាន (MOE) ក្រសួងមហាផ្ទៃ (MOI) និងក្រសួងសាធារណការ និងដឹកជញ្ជូន (MPWT)។

សមាសភាគទី២៖ ការគ្រប់គ្រងសំរាមសំណល់រឹង និងប្លាស្ទិកដោយរួមបញ្ចូលគ្នាមាន ការធ្វើផែនការ ការត្រួតពិនិត្យតាមដាន និងការកសាងសមត្ថភាពសម្រាប់ក្រុង/ស្រុកដែលបានចូលរួម

ការអនុវត្តសកម្មភាពនៃសមាសភាគនេះមានគោលបំណងដើម្បីកសាងសមត្ថភាពរបស់ក្រុង /ស្រុកដែលចូលរួមសម្រាប់ការគ្រប់គ្រង សំរាម សំណល់រឹង និងប្លាស្ទិក រួមទាំងការគាំទ្រក្នុងនោះមាន៖ (ក) ការធ្វើផែនការគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិក សេវាប្រឹក្សាប្រតិបត្តិការ និងការសិក្សាស្រាវជ្រាវអនុវត្តន៍សម្រាប់កិច្ចសន្យាគ្រប់គ្រងសំរាមសំណល់រឹង (ខ) ការអភិវឌ្ឍប្រព័ន្ធគ្រប់គ្រងព័ត៌មានសំរាមសំណល់រឹង ហិរញ្ញវត្ថុ និង ភូមិសាស្ត្រសម្រាប់ការប្រមូលថ្លៃសេវាប្រមូលសំរាម ដើម្បីបង្កើនការស្តារឡើងវិញនូវការចំណាយ និង (គ) ការគ្រប់គ្រងប្រតិបត្តិការ និងការផ្សព្វផ្សាយជាសាធារណៈ ការយល់ដឹង ការអប់រំ និងសកម្មភាពចូលរួមរបស់ប្រជាពលរដ្ឋ។

សមាសភាគទី៣៖ ហេដ្ឋារចនាសម្ព័ន្ធគ្រប់គ្រងសំរាម សំណល់រឹង និងប្លាស្ទិក

ការអនុវត្តសកម្មភាពសម្រាប់ក្រុង ស្រុកដែលបានជ្រើសរើស រួមមាន៖ (ក) ការរៀបចំ និងសាងសង់ហេដ្ឋារចនាសម្ព័ន្ធគ្រប់គ្រងសំរាមសំណល់រឹង និងប្លាស្ទិកសម្រាប់ការប្រមូល ការផ្ទេរ ប្រព្រឹត្តិកម្ម/កែច្នៃឡើងវិញ និងការចោលសំរាមចុងក្រោយ និងការគ្រប់គ្រងប្លាស្ទិកឱ្យបានត្រឹមត្រូវ ដូចជាទីលានទុកដាក់សំរាម ស្ថានីយ៍ផ្ទេរសំរាម និងកន្លែងប្រព្រឹត្តិកម្មសំរាមសំណល់រឹងកម្រិតមធ្យម មានដូចជាកន្លែងប្រព្រឹត្តិកម្មសំរាម និងកន្លែងធ្វើជីកំប៉ុស្ត និងផ្លូវចូលដែលមានមានភាពងាយស្រួល ក៏ដូចជាការសម្អាតការបំពុលនៅកន្លែងចាក់សំរាមដែលមានស្រាប់ (ទីតាំងចាស់) និង (ខ) ការកែសម្រួលលើឯកសារណែនាំដែលពាក់ព័ន្ធ

ដូចជាបទប្បញ្ញត្តិទាក់ទងទៅនឹងទីលានទុកដាក់សំរាម ការរៀបចំកែលម្អទីលានទុកដាក់សំរាម និងប្រតិបត្តិការដែលមានស្តង់ដារ គំរូកិច្ចសន្យា និងសៀវភៅណែនាំសម្រាប់ការគ្រប់គ្រង និងប្រតិបត្តិការទីលានទុកដាក់សំរាម។

ការវិនិយោគទីលានទុកដាក់សំរាមប្រកបដោយអនាម័យ គឺត្រូវផ្អែកលើទីលានទុកដាក់សំរាមបែបទំនើប រួមមានការកសាងហេដ្ឋារចនាសម្ព័ន្ធ ដែលអាចប្រើប្រាស់បានដូចជា (i) រណ្តៅចាក់សំរាម និងតំបន់ដែលអាចពង្រីកបន្ថែម និងមានសមត្ថភាពគ្រប់គ្រាន់សម្រាប់អាយុកាលចាប់ពី ១០ឆ្នាំ ទៅ ២០ឆ្នាំ និងមានសក្តានុពល ពង្រីកបន្ថែមនាពេលអនាគត (ii) ប្រព័ន្ធការពារជំរាបទឹកបាតរណ្តៅ (iii) បណ្តាញផ្លូវផ្នែកខាងក្នុង (iv) ប្រព័ន្ធប្រមូលទឹកស្អុយ និងប្រព័ន្ធប្រព្រឹត្តិកម្ម និងប្រព័ន្ធស្រោចស្រប់ឡើងវិញ (v) ប្រព័ន្ធនាញយកឧស្ម័ននៅទីលានទុកដាក់សំរាម (vi) ច្រកចូល និងអាការវដ្តបាលទូទៅ (vii) ស្ថានភាពពឹងផ្អែកទម្ងន់ និង (viii) ឃានដ្ឋាន និងរោងជាង។

ទីតាំងទាញយក និងព្រែកសម្ភារៈប្រើប្រាស់ឡើងវិញ (MRF) ដោយរួមទាំងការផលិតជាតិទន្ធនៈ (RDF) ស្ថានីយ៍ផ្ទេរ និងកន្លែងធ្វើជីកំប៉ុស្តជាផ្នែកនៃការផ្តល់ហិរញ្ញប្បទានហេដ្ឋារចនាសម្ព័ន្ធផងដែរ។ អ្នករើសសំរាម នឹងត្រូវបានដាក់បញ្ចូលក្នុងកន្លែងទាញយកធនធានសំរាមប្រើប្រាស់/កែច្នៃឡើងវិញដើម្បីផ្តល់លទ្ធភាព ពិឱ្យពួកគេចូលទៅរើសសំរាមដែលអាចកែច្នៃឡើងវិញបាន តាមរយៈការសាងសង់កន្លែងទាញយកធន ធានមួយដែលប្រកបដោយសុវត្ថិភាព (MRF)

ព្រមទាំងផ្តល់លក្ខខណ្ឌការងារប្រកបដោយសុវត្ថិភាពដល់អ្នករើសសំរាម និងការពារពួកគេពីហានិភ័យសុខភាពដែលអាចកើតមាន។

សមាសភាគទី៤៖ ការឆ្លើយតបបន្ទាន់ដែលអាចកើតឡើង សមាសភាគដែលពុំទាន់មានផ្តែងដើមនេះត្រូវបានរៀបចំឡើង

ក្នុងគោលបំណងត្រៀមបង្ការផ្តល់នូវការឆ្លើយតបភ្លាមៗ ចំពោះវិបត្តិដែលអាចកើតមានឡើងគ្រប់លក្ខខណ្ឌ ឬក៏មានអាសន្នចាំបាច់ណាមួយ។ សមាសភាគទី៤នេះ (ជាសមាសភាគនៃការឆ្លើយតបពេលមានអាសន្ន) មានតម្លៃស្មើសូន្យ និងមិនមានការពាក់ព័ន្ធនឹងការផ្តល់ហិរញ្ញប្បទានទេ លុះត្រាតែវាមានហេតុការណ៍ណាមួយត្រូវបានបង្កឡើង។

**វិបត្តិ**

ប្រគ្រោះអាសន្នដែលកើតឡើងគឺត្រូវបានវាយតម្លៃដោយធនាគារពិភពលោកថាជាព្រឹត្តិការណ៍ដែលបង្កឡើង ឬទំនងជានឹងបង្កឡើងមានផលប៉ះពាល់ភ្លាមៗ ដល់សេដ្ឋកិច្ច និង/ឬសង្គមធ្ងន់ធ្ងរដែលទាក់ទងនឹងវិបត្តិ ឬគ្រោះមហន្តរាយបង្កឡើងដោយធម្មជាតិ ឬដោយស្នាដៃរបស់មនុស្ស។ គ្រោះមហន្តរាយទាំងនេះរួមមាន៖ (១) ព្យុះស៊ីក្លុន (២) រញ្ជួយដី (៣) ព្យុះភ្លៀងខ្លាំង (៤) ព្យុះសមុទ្រ និងរលកបោកបក់ខ្លាំង (៥) ព្យុះកំបុកភ្លៀង (៦) រលកយក្សស្ពឺណាមិ (៧) បន្ទុះភ្នំភ្លើង (៨) ទឹកជំនន់ (៩) ការបាក់ដី (១០) ភ្លើងឆេះព្រៃ (១១) គ្រោះរាំងស្ងួត (១២) អាកាសធាតុប្រែប្រួលខ្លាំង (១៣) សីតុណ្ហភាពប្រែប្រួលខ្លាំង (១៤) ខ្យល់បក់ខ្លាំង និង (១៥) គ្រោះធម្មជាតិណាមួយ។

រាជរដ្ឋាភិបាលកម្ពុជានឹងស្វែងរកជំនួយគាំទ្រពីធនាគារ ដើម្បីជ្រើសរើសបញ្ជីសកម្មភាពសម្រាប់ផ្តល់ហិរញ្ញប្បទានក្រោម CERC ដោយផ្អែកលើ (១) បញ្ជីវិជ្ជមាន និងបញ្ជីអវិជ្ជមានដែលបង្ហាញក្នុងកថាខណ្ឌទី ៣៤ នៃសៀវភៅណែនាំ CERC និង (២) អាទិភាពដែលបានកំណត់តាមការវាយតម្លៃតម្រូវការរបស់នៃផលប៉ះពាល់នៃគ្រោះអាសន្ន។ រាជរដ្ឋាភិបាលកម្ពុជាអាចស្វែងរកការផ្តល់យោបល់ពីធនាគារពិភពលោកក្នុងការជ្រើសរើសសមាស ភាគរបស់គម្រោងដែលមូលនិធិនឹងត្រូវបានផ្ទេរទៅ CERC ប្រសិនបើចាំបាច់។ នៅក្នុងស្ថានភាពណាមួយដែល CERC ត្រូវបានធ្វើឱ្យមានឡើងគណនានអាចត្រូវបានប្រើសម្រាប់គោលបំណងឆ្លើយតបគ្រោះអាសន្នពីទីភ្នាក់ ងារអនុវត្តនីមួយៗ ដោយផ្អែកលើសៀវភៅណែនាំស្តីពីការឆ្លើយតបបន្ទាន់ដែលមានភ្ជាប់មកជាមួយនៅក្នុងសៀវភៅណែនាំ ទាំងស្រុងនៃការគម្រោង (POM) និងជាកម្មវត្ថុនៃការមិនជំទាស់របស់ធនាគារពិភពលោក។

**ការរៀបចំការអនុវត្ត**

គម្រោងនេះនឹងត្រូវបានអនុវត្តតាមរយៈអង្គការគ្រប់គ្រងសមាសភាគ (CMU)។ ក្រសួងបរិស្ថានគឺជា ភ្នាក់ងារអនុវត្តសមាសភាគទី១។ ក្រសួងមហាផ្ទៃគឺជាភ្នាក់ងារអនុវត្ត សមាសភាគទី២។ ក្រសួងសាធារណការ និងដឹកជញ្ជូនគឺជាភ្នាក់ងារអនុវត្តសមាសភាគទី៣។ ពាក់ព័ន្ធនឹងអង្គការគ្រប់គ្រងសមាសភាគទី២

**សាលាក្រុងនីមួយៗដែលចូលរួមក្នុងគម្រោងនឹងបង្កើតអង្គការអនុវត្តក្រុង** (CIU) ដែលជាអង្គការគ្រប់គ្រងសំរាប់សំណល់រឹង អង្គការសេវាទឹកក្រុងសម្រាប់ការអនុវត្តនៅថ្នាក់មូលដ្ឋាន។

**ការជ្រើសរើសក្រុង និងខេត្តដែលមានលក្ខណៈសម្បត្តិគ្រប់គ្រាន់**

ដំណើរការជ្រើសរើសយករដ្ឋបាលក្រុង និងខេត្តគោលដៅនឹងត្រូវអនុវត្តរួមគ្នារវាងក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ (MEF) ក្រសួងមហាផ្ទៃ(MOI) ក្រសួងបរិស្ថាន (MOE) និងក្រសួងសាធារណការ និងដឹកជញ្ជូន (MPWT) ដើម្បីកំណត់ក្រុងដែលមានលក្ខណៈសម្បត្តិគ្រប់គ្រាន់។ ការកំណត់យកទីតាំងចាក់សំរាមសមស្រប ណាមួយនឹងត្រូវបានបង្ហាញនៅពេលចាប់ផ្តើមអនុវត្តគម្រោងដោយផ្អែកលើលក្ខណៈវិនិច្ឆ័យជ្រើសរើស គ្រឹមត្រូវ។

- លក្ខណៈវិនិច្ឆ័យនៃការជ្រើសរើសទីតាំងសមាសភាគទី៣គឺត្រូវផ្អែកលើ៖ (១) តម្រូវការនៃការប្រព្រឹត្តិកម្មសំរាមសំណល់រឹងប្រកបដោយប្រសិទ្ធភាព ហេដ្ឋារចនាសម្ព័ន្ធនៅលានសំរាមដែលមានលទ្ធភាពរ៉ាប់រងប្រជាជនច្រើនជាង ១០០,០០០ នាក់ ដែលចំនួននេះត្រូវស្មើនឹងចំនួននៃអ្នកដែលបង្កើតសំរាម។ (២) ឆន្ទៈសម្រាប់ការស្តារឡើងវិញនូវការចំណាយយ៉ាងហោចណាស់សម្រាប់កិច្ចការងារប្រតិបត្តិការនៃទីលានទុក ដាក់សំរាម និងកិច្ចសន្យានៃការគ្រប់គ្រងទីលានជាមួយនឹងស្ថាប័នធនាគារអនុវត្ត និងការទូទាត់សម្រាប់ប្រតិបត្តិការ និងការគ្រប់គ្រងការចោលសំរាម។ និង (៣) ដដែលអាចរកបានសម្រាប់ទីលានទុកដាក់សំរាមសំណល់រឹង និងហេដ្ឋារចនាសម្ព័ន្ធប្រព្រឹត្តិកម្មផ្សេងទៀតស្របតាមតម្រូវការរបស់ក្របខ័ណ្ឌបរិស្ថាន និងសង្គមរបស់ធនាគារពិភពលោក (WB ESF)។

ចំពោះរដ្ឋបាលក្រុងដែលជ្រើសរើសគោលដៅ នឹងត្រូវទទួលបានការគាំទ្រហិរញ្ញប្បទានវិនិយោគដំបូងជាមួយនឹងជំនួយបច្ចេកទេស និងការកសាងសមត្ថភាព។ ក្នុងដំណើរការរៀបចំនៃការវិនិយោគសម្រាប់សមាសភាគទី៣ ការរៀបចំផែនការ និងការវាយតម្លៃផលប៉ះពាល់បរិស្ថាននិងសង្គមជាក់លាក់នៃទីតាំងគម្រោង ទាំងអស់នឹងត្រូវអនុវត្តសម្រាប់អនុគម្រោងក្នុងលក្ខខណ្ឌសមស្របដោយគិតពិចារណាលើហានិភ័យ និងហេតុប៉ះពាល់របស់គម្រោង ជាពិសេសហេតុប៉ះពាល់ទៅលើបរិស្ថាន និងសង្គមពិទាបទៅខ្ពស់ដែលអាច បណ្តាលមកពីសកម្មភាពផ្សេងៗដូចជាការវិនិយោគលើហេដ្ឋារចនាសម្ព័ន្ធ និងការស្តារទីលានចាក់សំរាមស្ថិតនៅក្រោមសមាសភាគនីមួយៗ។ ក្នុងអំឡុងពេលរៀបចំ ESIA/ESMPs ហេតុប៉ះពាល់បរិស្ថាន និងសង្គម និងវិធានការកាត់បន្ថយត្រូវតែបង្ហាញ

និងការពិគ្រោះយោបល់ជាមួយក្រុមដែលទទួលបានផលប៉ះពាល់ពីគម្រោងផងដែរ។ គម្រោងមានគោលបំណងជៀសវាង កាត់បន្ថយ និង ឬដោះស្រាយ ហេតុប៉ះពាល់ទាំងនេះ ហើយធ្វើឱ្យដំណើរការសិក្សារួមបញ្ចូលទៅនឹងតម្រូវការ និងកង្វល់របស់អ្នកដែលនឹងរងហេតុប៉ះពាល់។ នៅក្រោមសមាសភាគទី២ ក្រុងដែលទទួលបានសិទ្ធិបឋម ដូចជាខេត្តសៀមរាប(ក្រុងសៀមរាប) ខេត្តកំពង់ស្ពឺ(ក្រុងច្បារមន) ខេត្តបាត់ដំបង(ក្រុងបាត់ដំបង) ខេត្តព្រះសីហនុ (ក្រុងព្រះសីហនុ) និងខេត្តកណ្តាល (ក្រុងតាខ្មៅ) ត្រូវគេរំពឹងថានឹងទទួលបានជំនួយបច្ចេកទេស និងហិរញ្ញប្បទានកសាងសមត្ថភាព។ ចំពោះសមាសភាគទី៣ សាលាក្រុងដែលទទួលបានសិទ្ធិបឋមដូចជា ក្រុងរបស់ខេត្តសៀមរាប កំពង់ស្ពឺ និងកណ្តាល ត្រូវបានគេរំពឹងថានឹងទទួលបានហិរញ្ញប្បទានវិនិយោគលើការគ្រប់គ្រងសំណល់ និងហេដ្ឋារចនាសម្ព័ន្ធ។

**ឧបសម្ព័ន្ធសំខាន់ៗចំពោះក្របខ័ណ្ឌគ្រប់គ្រងបរិស្ថាន និងសង្គម (ESMF)**

**ក្របខ័ណ្ឌគោលនយោបាយការដោះស្រាយផលប៉ះពាល់ (RPF)៖** មានហេតុប៉ះពាល់នៃកម្មសិទ្ធិដី និង/ឬជីវភាពរស់នៅ ដែលអាចកើតមានឡើងក្នុងអំឡុងពេលការងារសំណង់ស៊ីវិល និងសកម្មភាពសាងសង់នៅក្រោមសមាសភាគទី៣។ អនុគម្រោងជាច្រើននឹងត្រូវធ្វើការស្តារឡើងវិញសម្រាប់ការបន្តប្រើប្រាស់ និងឬ/បិទ និងការរុករាននៃដីចាក់សំរាមដែលមានស្រាប់ ដែលអាចត្រូវការដីបន្ថែមសម្រាប់ការពង្រីក។ ជាមួយនឹងវត្តមានរបស់អ្នករើសសំរាម សហគមន៍ក្បែរនោះ ក្រុមងាយរងគ្រោះនិងក្រុមអ្នកពាក់ព័ន្ធផ្សេងទៀត ក្របខ័ណ្ឌគោលនយោបាយ ការតាំងទីលំនៅថ្មី ត្រូវបានរៀបចំឡើង ដើម្បីពិចារណាពីផលប៉ះពាល់ដែលអាចកើតមានលើដីធ្លី ជីវភាពរស់នៅ និងប្រភពចំណូលដោយសារអនុគម្រោងដែលនឹងបង្កឱ្យមានការផ្លាស់ទី បែបបួរវត្ត ឬបែបសេដ្ឋកិច្ចដោយសារការប៉ះពាល់ដី ឬដោយសារការរឹតត្បិតការទទួលបានអេកូឡូជី ជាធនធានសំណល់។ ផ្នែកសំខាន់មួយនៃESMF នេះ RPF ត្រូវបានបង្ហាញក្នុងឧបសម្ព័ន្ធ G និងរួមបញ្ចូលគោលការណ៍ណែនាំស្តីពីការដោះស្រាយ និងកាត់បន្ថយការទន្ទ្រានដីធ្លី និងផលប៉ះពាល់លើ ជីវភាពរស់នៅ។

**ក្របខ័ណ្ឌផែនការជនជាតិដើមភាគតិច (IPPF)៖** នៅដំណាក់កាលបច្ចុប្បន្ននៃគម្រោងព័ត៌មានលម្អិត និងបច្ចេកទេសនៃអនុគម្រោងមិនត្រូវបានដឹងទេ ហើយនឹងត្រូវបានកំណត់ក្នុងដំណាក់កាលនៃការអនុវត្តគម្រោង ដូច្នេះវាអាចមានវត្តមានរបស់ជនជាតិដើមភាគតិចនៅក្នុងតំបន់ជុំវិញអនុគម្រោង។ ក្របខ័ណ្ឌផែនការជនជាតិដើមភាគតិច (IPPF) ត្រូវបានរៀបចំដើម្បីបង្កើតផែនការជនជាតិដើមភាគតិចជាក់លាក់មួយ។ ក្នុងករណីនេះ ជនជាតិភាគតិចត្រូវបានកំណត់នៅក្នុងការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គម ជាក់លាក់ (ESIA) របស់គម្រោងនីមួយៗ។ ជាផ្នែកសំខាន់នៃESMFនេះ IPPFត្រូវបានបង្ហាញក្នុងឧបសម្ព័ន្ធH ដើម្បីប្រើប្រាស់ជាមូលដ្ឋានក្នុងការរៀបចំផែនការជនជាតិដើមភាគតិច(IPP)នៃអនុគម្រោងនីមួយៗ ប្រសិនបើកំណត់ថាចាំបាច់។

**នីតិវិធីគ្រប់គ្រងការងារ (LMP)៖** គម្រោងនឹងដាក់បញ្ចូលនូវប្រភេទកម្មករផ្សេងៗគ្នាទៅតាមជំនាញនោះ គឺចាំបាច់សម្រាប់សកម្មភាពរៀបចំគម្រោង ការកសាងសមត្ថភាព និងការពង្រឹងស្ថាប័ននៅទូទាំងសមាសភាគ នៃគម្រោងទាំងអស់។ នីតិវិធីគ្រប់គ្រងការងារ(LMP) ត្រូវបានរៀបចំឡើងដើម្បីធានាថាកម្មករគម្រោងទាំងអស់មានការយល់ដឹងច្បាស់លាស់អំពីអ្វីដែល ត្រូវការនៅពេលដែលបញ្ហាការងារជាក់លាក់កើតឡើងក្នុងអំឡុងពេលសកម្មភាពធ្វើគម្រោង។ ជាផ្នែកសំខាន់មួយនៃ ESMF LMPត្រូវបានបង្ហាញនៅក្នុងឧបសម្ព័ន្ធF ដើម្បីផ្តល់នូវតម្រូវការការងារសំខាន់ៗ កំណត់ហានិភ័យដែលទាក់ទងនឹងកម្លាំងពលកម្ម និងកំណត់ធនធាន ដែលចាំបាច់ដើម្បីដោះស្រាយកង្វល់ការងាររបស់គម្រោង។

**សកម្មភាពការចូលរួមរបស់ភាគីពាក់ព័ន្ធ និងការពិគ្រោះយោបល់សម្រាប់ ESMF៖** ESMF ត្រូវបានផ្សាយជាសាធារណៈនៅលើគេហទំព័ររបស់ក្រសួងមហាផ្ទៃនៅថ្ងៃទី២១ ខែកុម្ភៈ ឆ្នាំ២០២២ ហើយបន្ទាប់មកវាត្រូវបានផ្សាយនៅលើគេហទំព័ររបស់ក្រសួងសាធារណការ និងដឹកជញ្ជូន និងត្រូវបានប្រឹក្សាយោបល់នៅដើមខែមីនា ឆ្នាំ២០២២ (សូមមើលឧបសម្ព័ន្ធ J) ជាមួយនឹងភាគីពាក់ព័ន្ធច្នាក់ជាតិ អង្គការមិនមែនរដ្ឋាភិបាល និងអ្នកតំណាងមតិព័ត៌មានដែលអនុគម្រោងនឹងត្រូវបានអនុវត្ត។ សេចក្តីសង្ខេបនៃ ESMF

ត្រូវបានរៀបចំ និងបង្ហាញជាភាសាខ្មែរ ដើម្បីអាចបញ្ជូនព័ត៌មានចាំបាច់និងច្បាស់លាស់ដែលមាននៅក្នុងឯកសារនេះប្រកបដោយប្រសិទ្ធភាព និងច្បាស់លាស់ ។ ព័ត៌មានលម្អិតសម្រាប់ទីភ្នាក់ងារអនុវត្ត និងអ្នកគាំពាររដ្ឋាភិបាលមូលដ្ឋាន ត្រូវបានបង្ហាញនៅកន្លែងប្រឹក្សាយោបល់នីមួយៗស្របតាមយន្តការដោះស្រាយបណ្តឹង កវ៉ា(GRM)។

**សាវតារនៃបរិស្ថាន និងសង្គម**

ប្រទេសកម្ពុជាស្ថិតនៅភាគខាងត្បូងនៃឧបទ្វីបឥណ្ឌូចិននៅក្នុងអាស៊ីអាគ្នេយ៍។ វាមានផ្ទៃដី ១០៣៥ គីឡូម៉ែត្រការ៉េ និងមានព្រំប្រទល់ជាប់ប្រទេសថៃនៅភាគពាយ័ព្យ ឡាវនៅភាគឦសាន វៀតណាមនៅខាងកើត និងលួងសមុទ្រថៃនៅភាគនិរតី។

ទីតាំងភូមិសាស្ត្រលម្អិតនៃខេត្តសៀមរាប កណ្តាល និងកំពង់ស្ពឺ ត្រូវបានបង្ហាញក្នុងរូបភាពទី ១។

**ប្រទេសកម្ពុជា** មានអាកាសធាតុត្រូពិច៖ ក្តៅពេញមួយឆ្នាំ មានរដូវវស្សាចាប់ពីខែឧសភាដល់ខែតុលា ដោយសារខ្យល់មូសុងនិរតី និងរដូវប្រាំងចាប់ពីខែវិច្ឆិកាដល់ខែមេសា។ សម្រាប់ឆ្នាំធម្មតា ទឹកភ្លៀងនៅតំបន់ដីគោកមានកម្ពស់ ១.៣០០ ទៅ ១.៨០០ មីលីម៉ែត្រ។ អាកាសធាតុត្រូពិចជាងបន្តិចនៅតំបន់ខ្ពង់រាប ដែលជម្រាលភ្នំត្រូវបានគ្របដណ្តប់ដោយព្រៃឈើក្រាស់ៗ (គម្របព្រៃ) និងត្រូវបានការពារដោយតំបន់អភិរក្សធម្មជាតិ។ តំបន់ភ្នំក៏ជាតំបន់ដែលមានភ្លៀងធ្លាក់ខ្លាំងបំផុត ដែលមានកម្ពស់រហូតដល់ ៥.០០០ មីលីម៉ែត្រក្នុងមួយឆ្នាំ ហើយមានភ្លៀងធ្លាក់ខ្លះនៅពេលរសៀលសូម្បីតែមុនរដូវមូសុងចាប់ពីខែកុម្ភៈដល់ខែមេសាក៏ដោយ។

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



**រូបភាពទី ១: ទីតាំងភូមិសាស្ត្រនៃប្រទេសកម្ពុជា**

**ខេត្តកណ្តាល**

គឺជាខេត្តមួយក្នុងប្រទេសកម្ពុជាដែលមានទីតាំងនៅភាគខាងត្បូងនៃប្រទេស។ វាជំរុញវិញរាជធានីភ្នំពេញ និងមានព្រំប្រទល់ជាប់ខេត្តកំពង់ស្ពឺ និងខេត្តតាកែវនៅខាងលិច កំពង់ឆ្នាំង និងកំពង់ចាមនៅខាងជើង ខេត្តព្រៃវែងនៅខាងកើត និងមានព្រំប្រទល់អន្តរជាតិជាមួយវៀតណាមនៅភាគខាងត្បូង។

វាជាខេត្តដែលមានប្រជាជនច្រើនជាងគេទីពីរនៅក្នុងប្រទេស។

អាកាសយានដ្ឋានអន្តរជាតិភ្នំពេញថ្មីដែលមានចម្ងាយប្រមាណ ៣០គីឡូម៉ែត្រពីក្រុង ដែលកំពុងដំណើរការសាងសង់ និងដាក់ដំណើរការប្រើប្រាស់ក្នុងឆ្នាំ២០២៥។

វាត្រូវបានកត់ត្រាថាជាព្រលានយន្តហោះធំជាងគេមួយ បើផ្អែកលើទំហំផ្ទៃដី។ ទីរួមខេត្តកណ្តាល គឺក្រុងតាខ្មៅដែលមានចម្ងាយប្រហែលប្រាំបីគីឡូម៉ែត្រខាងត្បូង រាជធានីភ្នំពេញ ដែលតភ្ជាប់គ្នាទៅវិញទៅមកតាមរយៈច្រករបៀងពាណិជ្ជកម្ម និងឧស្សាហកម្មដំរសរវើក និងសកម្មនៅភាគខាងត្បូង។

**ខេត្តកំពង់ស្ពឺ** ជាខេត្តមួយក្នុងប្រទេសកម្ពុជាដែលមានព្រំប្រទល់ជាប់នឹងខេត្តពោធិ៍សាត់ និងកំពង់ឆ្នាំងនៅខាងជើង កណ្តាលនៅខាងកើត តាកែវនៅភាគអាគ្នេយ៍ កំពតនៅខាងត្បូង និងខេត្តកោះកុងនៅខាងលិច។ ទីរួមខេត្តរបស់ខេត្តនេះ គឺក្រុងច្បារមន។



គេបានស្មានថាមានតែ៥០%នៃប្រជាជននៅក្រុង សៀមរាបទទួលបានសេវាកម្មប្រមូលសំរាម ហើយការប្រមូលភាគច្រើនគឺអាចមាន និងអនុវត្តតែក្នុងតំបន់កណ្តាលក្រុង និងតំបន់ពាណិជ្ជកម្ម ដែលតំបន់ទាំងនោះមានការបង្កើនសេវាកម្មបានគ្រប់ចំនួន។

កន្លែងចាក់សំរាម ដែលមានស្រាប់នៅភូមិអន្លង់ពីរស្ថិតក្នុងស្ថានភាពមិនល្អ។ វាមានទីតាំងស្ថិតនៅក្នុងអតីត រណ្តៅដី ហើយត្រូវបានសាងសង់ និងប្រតិបត្តិការជាកន្លែងចាក់សំរាមបើកចំហដោយគ្មានវិធានការណាមួយ ដើម្បីទប់ស្កាត់ការបំពុលបរិស្ថានឡើយ។ ហើយក៏មិនមានបច្ចេកទេសវិស្វកម្ម គ្មានវិធានការប្រតិបត្តិការពិនិត្យ សម្រាប់បរិស្ថាន និងគ្មានការប្រមូលឧស្ម័ននៅកន្លែងនោះទេ។ មិនមានការរចនា ឬប្រព័ន្ធប្រមូលសំរាម ដែលមានប្រព័ន្ធបន្សុទ្ធជាតុល្យល្អចេញនោះទេ ដូច្នេះបច្ចុប្បន្ននេះ ការលេចចេញទឹកស្អុយពីរណ្តៅទៅប្រភពទឹក និងរណ្តៅដីដែលជិតនោះមានលក្ខណៈសម្បើមណាស់។

ទីតាំងនេះនឹងត្រូវការការស្តារឡើងវិញទាំងស្រុងដើម្បីទប់ស្កាត់ហេតុប៉ះពាល់បរិស្ថានសង្គម និងសុខភាពសាធារណៈ។

**ប្រភេទអ្នករើសសំរាម**

ផ្អែកទៅលើការអង្កេតនៅទីតាំងផ្ទាល់ ការស្ទង់មតិផ្នែកសេដ្ឋកិច្ចសង្គមដំបូង ការពិភាក្សាជាគ្រុម ការសម្ភាសន៍ជាមួយនិងអ្នកផ្តល់ព័ត៌មានសំខាន់ៗ និងការចូលរួមពីភាគីពាក់ព័ន្ធ និងការពិគ្រោះយោបល់ត្រូវបានធ្វើឡើងជាផ្នែកមួយនៃការរៀបចំ ESMF និងការវាយតម្លៃផលប៉ះពាល់បរិស្ថាន និងសង្គមដំបូងសម្រាប់ក្រុងសៀមរាប។ ចំនួនអ្នករើសសំរាមសរុបប្រហែល២៧៣នាក់ ត្រូវបានកំណត់អត្តសញ្ញាណនៅឯកន្លែងចាក់សំរាមដែលមានស្រាប់នៅក្នុងខេត្តសៀមរាប ដែលមកពីភូមិអន្លង់២ ភូមិភ្នំដី ភូមិស្តង ភូមិកាកបុត ភូមិបន្ទាយឫស្សី និងភូមិល្វា។ អ្នករើសសំរាមភាគច្រើន គឺមកពីភូមិភ្នំដី។

ការស្ទង់មតិដំបូងសម្រាប់កំណត់អត្តសញ្ញាណអ្នករើសសំរាមប្រហែលពីរភាគបី (៦៤,៣%) ជាស្ត្រី ដែលក្នុងនោះ១២% ជាក្មេងដែលមានអាយុ១៤ឆ្នាំ និងក្រោមអាយុ១៤ឆ្នាំ (០-១៤) ហើយ១០% ជាក្មេងដែលមានអាយុចន្លោះពី១៥ ទៅ១៨ឆ្នាំ។ ក្នុងចំណោមក្មេងទាំងនេះ មានក្មេងកំព្រាមួយចំនួន ដែលបានរស់នៅជាមួយនិងគ្រួសារ (ដែលមានសមាជិកច្រើនរស់នៅរួមគ្នា)។ វាត្រូវបានអង្កេតឃើញថាផ្នែកនៃការចូលរួមរបស់ភាគីពាក់ព័ន្ធ និងការពិគ្រោះយោបល់សម្រាប់ផ្នែកនៃកុមារដែលការរើសសំរាមស្ទើរតែជាមុខរបរក្រៅម៉ោង ដែលបានមុនចូល ហើយនិងចេញពីរៀន ឬដោយសារតែគ្មានកម្មវិធីមើលថែ និងថ្នាក់ក្រៅម៉ោង។ កុមារភាគច្រើនដែលមានអាយុចន្លោះពី១៤ ទៅ១៨ឆ្នាំជួយឪពុកម្តាយរបស់ពួកគេដោយការរើស និងវេចខ្ចប់សំរាម នៅពេលដែលពួកគេទំនេរពីការសិក្សា ខណៈពេលដែលកុមារមួយចំនួនតូច ធ្វើដើម្បីទទួលបានថវិការសម្រាប់ការចំណាយផ្ទាល់ខ្លួនរបស់ពួកគេ។

យោងតាមច្បាប់ការងារនៃប្រទេសកម្ពុជា អាយុសម្រាប់បម្រើការងារបានយ៉ាងតិចគឺ១៤ឆ្នាំ ដោយមានកុមារដែលមានអាយុចន្លោះពី១៤ ទៅ១៨ឆ្នាំ អាចមានលទ្ធភាពបម្រើការងារ ឬចូលរួមបានតែក្នុងកាលៈទេសៈដូចតទៅ៖ (i) ការងារមិនត្រូវបានចាត់ទុកថាមានគ្រោះថ្នាក់ទេ ជាការងារដែលតាមលក្ខណៈនៃកាលៈទេសៈដែលវាត្រូវបានអនុវត្ត ទំនងជាធ្វើឱ្យប៉ះពាល់ដល់សុខភាព សុវត្ថិភាព ឬសីលធម៌របស់កុមារ។ (ii) ការវាយតម្លៃហានិភ័យសមស្រប ត្រូវបានធ្វើឡើងមុនពេលចាប់ផ្តើមការងារ និង (iii) គ្មានការរំខានដល់ការសិក្សា។

ចំនួនជាក់លាក់នៃអ្នករើសសំរាម និងការលម្អិត ចាំបាច់ត្រូវបញ្ជាក់នៅពេលដែលទីតាំងគម្រោងត្រូវបានជ្រើសរើស កំឡុងពេលរៀបចំនៃការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គមលើទីតាំងជាក់លាក់រួមជាមួយនិងការធ្វើជំរឿន និងការស្ទង់មតិផ្នែកសេដ្ឋកិច្ចសង្គម អំឡុងពេលការរៀបចំផែនការដោះស្រាយផលប៉ះពាល់លម្អិត និងដោយមានការពិគ្រោះយោបល់ និងការជ្រើសរើសលើជម្រើសគាំទ្រ និងប្រភេទដែលបានជ្រើសរើស។ ព័ត៌មានបឋមអំពីនិន្នាការ និងក្រុមអ្នករើសសំរាមដែលងាយរងគ្រោះ និងចាក់បង់ផលប្រយោជន៍៖

- បុគ្គលភាគច្រើនដែលត្រូវបានសម្ភាសន៍ហាក់ដូចជារស់នៅក្នុងលំនៅដ្ឋាននៅក្នុងភូមិដែលនៅជុំវិញ ជៀសជាងនៅក្នុងទីតាំងនៃទីលានទុកដាក់សំរាមដោយផ្ទាល់។
- អ្នករើសសំរាមដែលបានសម្ភាសន៍បានរាយការណ៍ថាបានធ្វើការនៅនឹងកន្លែងចាក់សំរាមអស់ យល់ពេល ១០ឆ្នាំមកហើយ ឬច្រើនជាងនេះ។ ដូច្នេះ

សហគមន៍ដែលនៅជុំវិញទំនងជាមានការពឹងផ្អែកទាំងស្រុងលើកន្លែងចាក់សំរាម ហើយមានអារម្មណ៍ស្តីពីការម្នាក់ចំពោះតំបន់នោះ។

- ប្រាក់ចំណូលត្រូវបានរាយការណ៍ថាជាធម្មតាមានចន្លោះពី ៥០ដុល្លារ ទៅ ៧៥ដុល្លារសហរដ្ឋអាមេរិចក្នុងមួយខែ ដែលចំណូលនេះនឹងធ្វើឱ្យបុគ្គលទាំងនេះស្ថិតនៅក្រោមបន្ទាត់នៃភាពក្រីក្រ ប្រសិនបើប្រាក់ចំណូលរើសសំរាម គឺជាប្រភពចំណូលតែមួយគត់ ប្រហែលពាក់កណ្តាលនៃអ្នករើសសំរាមបានកត់សម្គាល់ថាពួកគេមានប្រភពចំណូលផ្សេងទៀតផងដែរ។ ប្រាក់ចំណូលបានមកពីការរើសសំរាមជាធម្មតាប្រែប្រួលយ៉ាងខ្លាំង ហើយការងារជាធម្មតាមានរដូវ និងបន្តបន្ទាប់គ្នា។ អ្នករើសសំរាមក៏មានអ្នករើសសំរាមចំណាកស្រុកផងដែរ តាមរយៈការហូរចូលពីតំបន់ផ្សេងៗ អាស្រ័យលើឱកាសការងារ និងស្ថានភាពសេដ្ឋកិច្ច។
- ជាមួយនឹងអវត្តមានភ្ញៀវទេសចរស្ទើរតែទាំងស្រុង ដោយសារជំងឺកូវីដ-១៩ នៅក្នុងខេត្តសៀមរាប បរិមាណសំរាម សំណល់ដែលបានធ្លាក់ចុះ ក៏ដូចជាឱកាសការងារ និងសកម្មភាពបង្កើតប្រាក់ចំណូលក្នុង វិស័យទេសចរណ៍ និងសេវាកម្ម។
- កង្វល់មួយចំនួនត្រូវបានគេលើកឡើងថាជាបញ្ហាសុខភាពទូទៅ ដែលទំនងជាបណ្តាលមកពីលក្ខខណ្ឌ និងក្លិននៃកន្លែងចាក់សំរាមបើកចំហរ។

**ខេត្តកំពង់ស្ពឺ**

ខេត្តកំពង់ស្ពឺមាន៧ស្រុក និងក្រុងមួយ ដែលមានប្រជាជនសរុបចំនួន ៨៧២.២១៩នាក់ គិតត្រឹមឆ្នាំ២០១៩។ ការប៉ាន់ស្មានពីបរិមាណសំរាមប្រចាំថ្ងៃសរុបនៅខេត្តនេះមានចំនួន២០៥តោនក្នុងមួយថ្ងៃ។ ការប្រមូលសំរាមត្រូវបានផ្តល់ដោយរដ្ឋាភិបាលមូលដ្ឋានទៅឱ្យក្រុមហ៊ុនប្រមូលសំរាមក្នុងវិស័យឯកជន។ ក្រុមហ៊ុនរឹងសេងហ្គ្រីន លីមីតធីត ត្រូវបានរាយការណ៍ថាប្រមូលបាន៣១តោនក្នុងមួយថ្ងៃសម្រាប់ក្រុងច្បាមន និង៨តោនក្នុងមួយថ្ងៃសម្រាប់ទីក្រុងសំរោងទង។

កន្លែងចាក់សំរាមសំខាន់ៗ ដែលមានស្រាប់ គឺស្ថិតនៅភូមិសាមគី ឃុំអង្គស្នួល ស្រុកអង្គស្នួលក្រុងច្បាមន ក្នុងខេត្តកំពង់ស្ពឺ ហើយអាចធ្វើដំណើរតាមផ្លូវលំចម្ងាយប្រហែល៣០០ម ភាគខាងត្បូងផ្លូវលេខ៤៤(DBST)។ វាមានទីតាំងស្ថិតនៅជិតទីក្រុងនៅក្នុងតំបន់អភិវឌ្ឍន៍នៅដ្ឋាន និងឧស្សាហកម្មដែលមានតម្លៃខ្ពស់។

មិនមានហេដ្ឋារចនាសម្ព័ន្ធវិស្វកម្មណាមួយត្រូវបានអនុវត្តឡើយ។ ទឹកស្អុយដែលចេញពីសំរាមក៏មិនត្រូវបានប្រមូលឡើយ និងបង្កើតនូវគ្រោះថ្នាក់បរិស្ថានធ្ងន់ធ្ងរដោយសារតែការបំពុលទឹកលើដី និងទឹកក្រោមដី។ មេតានកាយចេញមកក៏មិនត្រូវបានប្រមូលដែរ ហើយបរិស្ថានជុំវិញនោះកំពុងត្រូវបានរាយប៉ាយ ដោយសារតែខ្យល់បក ជាពិសេសប្តូរស្លឹក។ មិនមានរបង ឬការគ្រប់គ្រង ការចេញនានា បានអនុញ្ញាតឱ្យអ្នកប្រមូលមិនផ្លូវការចូលបោះទីតាំងផ្សេងៗ។ បុគ្គលិកសំរាមក៏ត្រូវបានចាក់ចោលនៅក្នុងតំបន់បើកចំហដោយមានការនេះយ៉ាងធ្ងន់ធ្ងរ។ សំរាមដែលមានស្រាប់ត្រូវបានដុតយ៉ាងទូលំទូលាយ។ អគ្គិភ័យត្រូវបានចាប់ផ្តើមឡើងដោយអ្នករើសសំរាមក្នុងគោលបំណងទាញយកលោហៈនានា។ ជាលទ្ធផលមានធាតុសរីរាង្គតិចតួច ដែលនៅសល់ និងសញ្ញាតិចតួចនៃទឹកលេចពីសំរាម។ ទីតាំងនេះត្រូវបានគេបិទដោយដី ខ្សាច់ ល្បាប់ធ្នូ ដែលមានជម្រាបទាប។ ទីតាំងនេះចាំបាច់ត្រូវបិទ និងស្តារឡើងវិញ ដើម្បីទប់ស្កាត់ការបំពុលបន្ថែមទៀត និងផលប៉ះពាល់បរិស្ថានសង្គម និងសុខភាព ហើយទីតាំង ដែលមានសក្តានុពលថ្មីចាំបាច់ត្រូវកំណត់ឡើង។

នៅខេត្តកំពង់ស្ពឺ អ្នករើសសំរាមចំនួន ៣៦នាក់ ត្រូវបានគេកំណត់អត្តសញ្ញាណជាបឋមនៅកន្លែងចាក់សំរាមដែលមានស្រាប់ ដោយមានលក្ខខណ្ឌស្រដៀងគ្នាដូចនៅខេត្តសៀមរាបដែរ ប៉ុន្តែមិនមានការបែងចែកជាក់លាក់តាមក្រុមអាយុទេ។ នៅក្នុងខេត្តកំពង់ស្ពឺនេះផងដែរ ស្ត្រីនិងកុមារត្រូវបានគេសង្កេតឃើញថាមាន បញ្ហាសុខភាព និងអសុវត្ថិភាពនៃប្រាក់ចំណូល ក៏ដូចជាកម្មករចំណាកស្រុកត្រូវបានលើកឡើងក្នុងផ្នែកមួយនៃការចូលរួម និងការពិគ្រោះយោបល់របស់អ្នកពាក់ព័ន្ធ។ គេសង្កេតឃើញថាចំពោះផ្នែកកុមារ ការរើសសំរាម គឺជាសកម្មភាពក្រៅម៉ោងដែលបានធ្វើមុន និងក្រោយចូលរៀន ឬដោយសារគ្មានកន្លែងមើលថែទាំពេលថ្ងៃ។

ចំនួនជាក់លាក់នៃអ្នករើសសំរាម និងការលម្អិតចាំបាច់ត្រូវបញ្ជាក់នៅពេលដែលទីតាំងគម្រោងត្រូវបានជ្រើសរើស កំឡុងពេលរៀបចំនៃការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គមលើទីតាំងជាក់លាក់ រួមជាមួយនឹងការធ្វើជំរឿន និងការស្ទង់មតិផ្នែកសេដ្ឋកិច្ចសង្គម អំឡុងពេលការរៀបចំផែនការដោះស្រាយផលប៉ះពាល់លម្អិត។

**ខេត្តកណ្តាល**

ខេត្តកណ្តាលគ្របដណ្តប់ទាំងស្រុងដុំវិញ្ញាណទានីក្នុងពេញ។ មាន១០ស្រុក និងក្រុងមួយ(ក្រុងតាខ្មៅ)ដែលមាន ប្រជាជនសរុបចំនួន ១.១៩៥.៥៤៧នាក់ គិតត្រឹមឆ្នាំ២០១៩។ មានក្រុមហ៊ុនឯកជនចំនួនពីរបានផ្តល់សេវាប្រមូលសំរាមនៅខេត្តកណ្តាលដោយផ្ដោតសំខាន់លើក្រុង តាខ្មៅ។ ក្រុមហ៊ុន CINTRI ទទួលខុសត្រូវក្នុងការប្រមូលសំរាមពីគេហដ្ឋានចំនួន៨.២៧០ខ្នង (ក្នុងចំណោមផ្ទះ១៣.២៥៩ខ្នង មានន័យថាប្រហែល ៦២,៤%) និង២.៦៨៩ ទីតាំងតំបន់ពាណិជ្ជកម្ម និងផ្សារចំនួន៥។ ក្រុមហ៊ុនសារ៉ូមត្រេកខឹងប្រមូលសំរាមពីរោងចក្រ និងឧស្សាហកម្ម។ ក្រុមសហគមន៍ក៏ប្រមូលសំរាមពីទីផ្សារតូចៗផងដែរ ប៉ុន្តែចំនួនមិនត្រូវបានគេដឹងទេ។ ការប៉ាន់ស្មាននៃការបញ្ចេញសំរាមសរុបប្រចាំថ្ងៃនៅក្នុងខេត្តកណ្តាល ត្រូវបានវាយការណ៍ជាច្រើនផ្សេងៗគ្នា ដោយសារទិន្នន័យលើការប្រមូលសំរាមដែលមិនគួរឱ្យជឿទុកចិត្តបាន។ គេបានប៉ាន់ស្មានថាសំរាមដែលបាន បង្កើតឡើងពីក្រុងតាខ្មៅគឺ៤០៨តោន/ថ្ងៃ ក្នុងឆ្នាំ២០១៨ និងកើនឡើងដល់៤៤០តោន/ថ្ងៃ ក្នុងឆ្នាំ២០២១។ CINTRI បានធ្វើរបាយការណ៍ថា បានប្រមូលបានច្រើនដល់ទៅ ២៧៣តោន/ថ្ងៃ។ មិនមានទិន្នន័យដែលអាចរក បានពីក្រុមហ៊ុនSAROM TRADINGទេ។ គេប៉ាន់ស្មានថាសំរាមសរុប២៧៩តោនក្នុងមួយថ្ងៃបានចាក់ចោល នៅទីលានសំរាមជារៀងរាល់ថ្ងៃទោះបីជាមិនមានកំណត់ត្រាជាក់លាក់នៃសំរាមដែលទទួលបានក៏ដោយ។ កន្លែងចាក់សំរាមដែលមានស្រាប់នៅខេត្តកណ្តាលមានចម្ងាយ៧គីឡូម៉ែត្រភាគខាងត្បូងនៃទីក្រុង និងស្ថិតនៅក្នុងតំបន់មួយនៃការពង្រីក និងការអភិវឌ្ឍនៅខ្នងដែលមានតម្លៃខ្ពស់។ តំបន់នោះមានទំហំកំណត់ (២ហិកតា) គ្មានហេដ្ឋារចនាសម្ព័ន្ធបែបរិស្ថកម្ម និងការគ្រប់គ្រងបរិស្ថានទេ។ មានទ្រុឌទ្រោមសំរាមមួយនៅលើទីតាំងនេះ ប៉ុន្តែមិនដំណើរការតាមស្តង់ដារដែលមានការគ្រប់គ្រងនោះសម្រាប់សិទ្ធិស្ថាភាពឬការបញ្ចេញ ខ្ពស់ឡើយ។ ទ្រុឌទ្រោមមានសមត្ថភាពប៉ាន់ស្មានដុតបាន ៥តោនក្នុងមួយថ្ងៃ។ ទីតាំងនេះកំពុងឆាប់រនះអំឡុងពេលទស្សនកិច្ចទាំងពីរលើក និងបង្ហាញពីសញ្ញានៃការរនះរាលដាលរយៈពេលវែង ដែលបណ្តាលឱ្យមានភាពគ្រោះថ្នាក់ជាមួយនឹងលំនៅដ្ឋាននៅជុំវិញនោះ។ ទីតាំងនេះចាំបាច់ត្រូវបិទ និងស្តារឡើងវិញ ដើម្បីទប់ស្កាត់ការបំពុល និងហេតុប៉ះពាល់បរិស្ថានសង្គម និងសុខភាព។

នៅខេត្តកណ្តាល អ្នករើសសំរាមចំនួន ៤០នាក់ ត្រូវបានគេកំណត់អត្តសញ្ញាណជាបឋមនៅកន្លែងចាក់សំរាមដែលមានស្រាប់ ដោយមានលក្ខខណ្ឌស្រដៀងគ្នាដូចនៅខេត្តសៀមរាបដែរ ប៉ុន្តែមិនមានការបែងចែកជាក់លាក់តាមក្រុមអាយុទេ។ ដូចគ្នានៅក្នុងខេត្តសៀមរាប និងខេត្តកំពង់ស្ពឺនេះផងដែរ ស្ត្រី និងកុមារត្រូវបានគេសង្កេតឃើញថាមានបញ្ហាសុខភាព និងអសូវស្ថិរភាព នៃប្រាក់ចំណូល។ គេសង្កេតឃើញថា ចំពោះផ្នែកកុមារ ការរើសសំរាម គឺជាសកម្មភាពក្រៅម៉ោងដែលបានធ្វើមុន និងក្រោយចូលរៀន ឬដោយសារគ្មានកន្លែងមើលថែទាំពេលថ្ងៃ។

ចំនួនជាក់លាក់នៃអ្នករើសសំរាមនិងការលម្អិតចាំបាច់ត្រូវបញ្ជាក់នៅពេលដែលទីតាំងគម្រោងត្រូវបានជ្រើសរើស កំឡុងពេលរៀបចំនៃការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គមលើទីតាំងជាក់លាក់រួមជាមួយនឹងការធ្វើជំរឿន និងការស្ទង់មតិផ្នែកសេដ្ឋកិច្ចសង្គម អំឡុងពេលការរៀបចំផែនការដោះស្រាយផលប៉ះពាល់លម្អិត។

**ខេត្តបាត់ដំបង**

សាលាខេត្តបាត់ដំបងបច្ចុប្បន្នផ្តល់សិទ្ធិប្រមូលសំរាម សម្រាប់ក្រុងបាត់ដំបងដល់ប្រតិបត្តិករឯកជនសំខាន់ចំនួនពីរគឺ CINTRI និង LEAP LIM។ ក្រុមហ៊ុនប្រមូលឯកជនទីបីត្រូវផ្តល់សម្រាប់ប្រមូលសំរាមនៅផ្សារបរិវេលមានឈ្មោះថា ពៅ។ ការប្រមូលជាផ្លូវការរួមមានCINTRIសម្រាប់៨សង្កាត់ LEAP LEM សម្រាប់ ២សង្កាត់ ពួកគេក៏បានប្រតិបត្តិការស្ថានីយ៍MRFហើយនិងការប្រមូលដោយខ្លួនឯង សម្រាប់ទីផ្សារបឹងឈូក។ LEAP LEM បច្ចុប្បន្ន មានកន្លែងចាក់សំរាម ស្ថិតនៅចម្ងាយ ៧,៥គ.មពីក្រុងបាត់ដំបង។ ទីលានចាក់សំរាម របស់ CINTRI មានចម្ងាយ៦គ.មពីទីលានចាក់សំរាមក្រុង។

គម្រោងនេះមិនត្រូវបានព្យាករណ៍ទុកជាមុន ដើម្បីផ្តល់ហិរញ្ញប្បទានដល់ទីលានចាក់សំរាមថ្មី សម្រាប់បាត់ដំបងទេ ដោយសារតែវាត្រូវបានផ្តល់ហិរញ្ញប្បទានរួចទៅហើយដោយADB ប៉ុន្តែការគាំទ្រក្រោមសមាសភាពទី២ ដើម្បីពង្រីកតំបន់សេវាកម្ម និងកែលម្អការប្រមូល និងការគ្រប់គ្រងសំណល់រឹងក៏ដូចជាការបន្ថែមនូវកន្លែងព្រែកសំរាម និងស្ថានីយ៍ផ្ទេរ ដែលមានសក្តានុពលអាចត្រូវបានពិចារណាដោយស្ថិតក្រោមការបញ្ជាក់ពីលក្ខណៈវិនិច្ឆ័យ។

**ក្រុងព្រះសីហនុ**

ក្រុមហ៊ុនប្រមូលសំរាមបច្ចុប្បន្នមានឈ្មោះ KSWM-Kampong Som Waste Management Co Ltd. ដែលចុះកិច្ចសន្យាដោយរដ្ឋបាលខេត្តព្រះសីហនុ ចាប់តាំងពីខែសីហាឆ្នាំ២០១៤បានគ្រប់គ្រងប្រតិបត្តិការបន្តពីក្រុមហ៊ុន CINTRI ដែលធ្លាប់ប្រតិបត្តិការនៅក្នុងទីក្រុងនេះអស់រយៈពេល១០ឆ្នាំមកហើយ។ យោងតាមរបាយការណ៍របស់ KSWM នៅខែមីនាឆ្នាំ២០២០មានអតិថិជនចំនួន៦.៥០០នាក់ដោយសារសមត្ថភាព របស់ពួកគេនៅមានកម្រិតហើយបច្ចុប្បន្នក្រុមហ៊ុននេះកំពុងតែស្វែងរកការពង្រីកសេវាប្រមូលសំរាម។ KSWM ផ្តល់ជូនការប្រមូល និងដឹកជញ្ជូនសំរាមជុំវិញទីក្រុងព្រះសីហនុ។ សេវាប្រមូលសំរាមគ្របដណ្តប់ ៤សង្កាត់ និងគ្រប់ផ្លូវទាំងផ្លូវធំ និងផ្លូវតូចក្នុងប្រទេសសង្កាត់ជុំវិញក្រុងព្រះសីហនុ។

ក្រុងព្រះសីហនុមានទីលានចាក់សំរាមមួយដែលទទួលបាន៨០,៣គោន/ថ្ងៃក្នុងឆ្នាំ២០១១ ហើយថ្មីៗនេះ មានបរិមាណ២៨៤,៥គោន/ថ្ងៃ។ កាលពីខែកក្កដាឆ្នាំ២០២០ ក្រសួងសាធារណការ និងដឹកជញ្ជូន និងក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ បានប្រកាសថានឹងបន្ថែមថវិកា ចំនួន៥លានដុល្លារអាមេរិកនៃថវិកាសារពើពន្ធនៅឆ្នាំ ២០២០ សម្រាប់សាងសង់ទីលានចាក់សំរាមថ្មីលើផ្ទៃដី ១៧ហិកតានៅក្រុងព្រះសីហនុ។ ទីលានចាក់សំរាមនេះមានទីតាំងស្ថិតនៅភូមិអូតាសេកយ៉ុអូឌកញ្ជើហេង ស្រុកព្រៃនប់ ចម្ងាយប្រហែល៣គ.ម ពីផ្លូវជាតិលេខ៤។

គម្រោងនេះមិនត្រូវបានព្យាករណ៍ទុកជាមុន ដើម្បីផ្តល់ថវិកាដល់ទីលានចាក់សំរាមថ្មី សម្រាប់ក្រុងព្រះសីហនុទេ ដោយសារវាត្រូវបានផ្តល់ហិរញ្ញវត្ថុរួចទៅហើយដោយប្រភពផ្សេងទៀត ប៉ុន្តែការគាំទ្រនៅក្រោមសមាសភាពទី២ នៃគម្រោង ដើម្បីពង្រីកតំបន់សេវា និងបង្កើនការប្រមូលសំរាម និងការគ្រប់គ្រងសំរាមរឹង ព្រមទាំងការបន្ថែម កន្លែងព្រែកសំរាម និងស្ថានីយ៍ផ្ទេរអាចត្រូវបានពិចារណាដោយស្ថិតក្រោមការបញ្ជាក់ពីលក្ខណៈវិនិច្ឆ័យ។

**ការវាយតម្លៃដំណើរការ និងជម្រើសសមស្របនៃតំបន់ទីតាំងទីលានចាក់សំរាម**

ធាតុសំខាន់មួយ នៃការគ្រប់គ្រងហេតុប៉ះពាល់បរិស្ថាន និងសង្គម និងវិធានការកាត់បន្ថយហានិភ័យធំៗ វាស់ស្ទង់ការអនុវត្តតាមរយៈដំណើរការវាយតម្លៃទីតាំង។ នេះនៅតែជាដំណើរការដែលកំពុងបន្តហើយត្រូវបានរំពឹងថានឹងបន្តពេញមួយឆ្នាំដំបូងនៃការអនុវត្ត គម្រោង។ សម្រាប់ការវាយតម្លៃទីតាំងលក្ខខណ្ឌត្រួតពិនិត្យចំនួន២៤ត្រូវបានបង្កើត និងរួមបញ្ចូលទាំងផ្នែកបរិស្ថាន និងសង្គមសំខាន់ៗ។ លក្ខណៈវិនិច្ឆ័យត្រូវបានបែងចែកជាប្រាំប្រភេទ៖

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

ដំណើរការត្រួតពិនិត្យជ្រើសរើសទីតាំងផ្អែកលើវិធីសាស្ត្រពីរដំណាក់កាល៖ (១) ការរៀបចំនៃដំណើរការ បង្កើតម៉ូដែល និងដំណើរការផែនទីអវិជ្ជមាន និង (២) ទស្សនកិច្ចទីតាំងជាបន្តបន្ទាប់ដើម្បីទទួលបានទិន្នន័យការពិតលើដី និងប្រមូលព័ត៌មានថ្មីពីការស្ទង់មតិ។ ការធ្វើកម្មវិធីផែនទី និងការអង្កេតនានា ត្រូវបានណែនាំ ដោយគោលការណ៍ណែនាំរបស់រដ្ឋាភិបាលកម្ពុជាអំពីការជ្រើសរើសតំបន់ទីតាំងទីលានចាក់សំរាម ឆ្នាំ២០១៦ និងលក្ខណៈវិនិច្ឆ័យនៃទីលានចាក់សំរាមរបស់WB។ កម្មវិធីមួយ ដែលប្រើលក្ខណៈវិនិច្ឆ័យជម្រើស

ក្នុងដំណើរការនៃការសម្រេចចិត្តតាមពហុលក្ខខណ្ឌត្រូវបានបង្កើតឡើង ArcGI ។ លទ្ធផលនៃម៉ូដែលនេះរួមមានផែនទីនៃទីក្រុងនីមួយៗ និងតំបន់ជុំវិញដែលមានពណ៌សក្តិសមជាប្រភេទ មិនសមស្របដាច់ខាត មិនសូវសមស្រប សមស្រប សមស្របបំផុត។

**ខេត្តសៀមរាប**

ESMF ផ្តល់នូវការសង្ខេបខ្លីនៃជម្រើសកន្លែងចាក់សំរាម ដែលបានវាយតម្លៃជាការវាយតម្លៃលម្អិតបន្ថែមទៀត រួមមានការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គមបឋមសម្រាប់ខេត្តសៀមរាប។

**ទិដ្ឋភាពទូទៅ នៃទីតាំងដែលមានស្រាប់**

កន្លែងចាក់សំរាមដែលមានស្រាប់នេះ ស្ថិតនៅភូមិ អន្លង់ពីរ ឃុំក្រពាំងធំ ស្រុកប្រាសាទធំ ខេត្តសៀមរាប ហើយការកាន់កាប់កន្លែងបានដំណើរការលើផ្ទៃដីប្រមាណ ៨ហិកតា។ វាត្រូវបានគ្រប់គ្រងដោយក្រុមហ៊ុនឯកជន និងដំណើរការដោយគ្មានស្ថិតិប្រតិបត្តិការសំខាន់ៗ សម្រាប់ប្រតិបត្តិការ និងការគ្រប់គ្រងកន្លែងចាក់សំរាម។ កន្លែងចាក់សំរាម មានព្រំប្រទល់ខាងកើត និងខាងត្បូង ជាប់នឹងវាលស្រែ ជាមួយនឹងខាងជើង និងលិចជាប់នឹងភូមិអន្លង់ពីរ។



កន្លែងចាក់សំរាមដែលមានស្រាប់ក្នុងភូមិអន្លង់ពីរ ឃុំក្រពាំងធំ (13°18'22"N latitude and 104°2'2"E longitude)

កន្លែងចាក់សំរាមចំហដែលមានស្រាប់បានដំណើរការអស់រយៈពេលជាង ១០ឆ្នាំ ដែលមានបរិមាណប្រហាក់ ប្រហែលនៃកាកសំណល់នៅកន្លែងចាក់សំរាមលំដាប់ ប្រហែល ១.០០០.០០០ ម៉ែត្រគូប។ កាកសំណល់រឹង ប្រមាណជា ២៥០ ទៅ៣០០តោនក្នុងមួយថ្ងៃ ត្រូវបានចោះចោលនៅកន្លែងចាក់សំរាមដែលមានស្រាប់។ កន្លែងចាក់សំរាមមានស្រាប់នៅភូមិ អន្លង់ពីរ បច្ចុប្បន្នកំពុងដំណើរការជាកន្លែងចាក់សំរាមបើកចំហ។ នៅក្រោម សេណារីយ៉ូ “កុំធ្វើអ្វីទាំងអស់” កន្លែងចាក់សំរាមភូមិអន្លង់ពីរ ត្រូវបានបន្តហានិភ័យទៅដល់បរិស្ថានសង្គម និងសុខភាពសាធារណៈយ៉ាងសំខាន់ដល់កម្មករ សហគមន៍ និងបរិស្ថានជុំវិញនោះ។ ខ្ពស់នៃមេតានត្រូវបានបន្តការបំភាយចេញដោយគ្មានការគ្រប់គ្រង គ្មានការគ្រប់គ្រងទឹកស្អុយដែលហូរទៅទឹកក្រោមដី និងលើដី ក្លិនស្អុយនៃកាកសំណល់ដែលបក់ដោយខ្យល់ (កណ្តរ រុយ ជាដើម) ដែលបានបន្តប៉ះពាល់ដល់ កម្មករ អ្នករើសសំរាម និងសហគមន៍ជុំវិញនោះ ជាមួយការពាក់ព័ន្ធលើហានិភ័យ បរិស្ថានសង្គម និងសុខភាពសាធារណៈ។

**ជម្រើសទី១:ស្តារឡើងវិញ និងពង្រីកកន្លែងចាក់សំរាមដែលមានស្រាប់នៅភូមិអន្លង់ពីរ ឃុំក្រពាំងធំ**

ក្រោមជម្រើសនេះ កន្លែងចាក់សំរាមបច្ចុប្បន្ន និងត្រូវស្តារឡើងវិញ និងពង្រីកជាមួយការសាងសង់រណ្តៅថ្មី និងហេដ្ឋារចនាសម្ព័ន្ធកន្លែងចាក់សំរាមលើកន្លែងចាក់សំរាមដែលមានស្រាប់ តាមរយៈការស្តារឡើងវិញកម្ទេចជាដីជាប់គ្នា។

ជម្រើសនេះមានន័យថាស្ដារកន្លែងចាក់សំរាមដែលមានស្រាប់ឡើងវិញ ណែនាំប្រព័ន្ធប្រមូលទឹកស្អុយ សាងសង់ប្រព្រឹត្តិកម្មទឹកស្អុយ ប្រព្រឹត្តិកម្ម/ប្រើប្រាស់ទីលានទុកដាក់សំរាមដែលមានទាញយកខ្ពស់នៃ ការញែក ការធ្វើជីកំប៉ុស និងហេដ្ឋារចនាសម្ព័ន្ធផ្សេងទៀតដោយការកែទម្រង់ និងស្ថិតភាពបរិមាណនៃសំណល់ដែលមានស្រាប់ និងពង្រីកកន្លែងទុកដាក់សំរាមឱ្យឆ្ងាយពីភូមិ។

ការស្ដារឡើងវិញនិងការពង្រីកទីតាំងបច្ចុប្បន្ន ត្រូវបានវាយតម្លៃថាជាគោលការណ៍អាចធ្វើទៅបាន។ បច្ចុប្បន្ននេះ ត្រូវបានគេប្រើជាដឹកសិកម្ម ប៉ុន្តែទំនងជាបានរងផលប៉ះពាល់រួចមកហើយពីការបំពុល។ តំបន់នេះ ត្រូវបានព័ន្ធជុំវិញដោយដឹកសិកម្មដែលភាគច្រើនប្រើសម្រាប់ផលិតស្រូវ ដោយគ្មានសំណង់នៅដ្ឋាន។ តំបន់ពង្រីកសក្តានុពលថ្មីទៅភាគអាគ្នេយ៍ក៏នឹងដាក់ទីតាំងនេះឱ្យឆ្ងាយប្រមាណ ៤០០ ទៅ ១០០០+ ម៉ែត្រ ពីតំបន់លំនៅដ្ឋានក្បែរភូមិអន្លង់ពីរ ទៅភាគពាយព្យនៃទីតាំងបច្ចុប្បន្ន។ ស្រះទឹកស្អុយដែលបើកចំហនៅជិត រចនាសម្ព័ន្ធលំនៅដ្ឋាននឹងត្រូវជួសជុល។ បឹងទន្លេសាបដែលជាទីនៃជីវចម្រុះ មានចម្ងាយ១៣ ៥គ.ម ទៅភាគខាងត្បូងនៃតំបន់នេះ។ ការវាយតម្លៃលម្អិត នឹងចាំបាច់សម្រាប់តំបន់ដីជាក់លាក់ ដែលត្រូវការរចនាសម្ព័ន្ធ និងការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គមជាក់លាក់ បន្ទាប់ពីកិច្ចព្រមព្រៀង និងការបញ្ចប់ដំណើរការ ជ្រើសរើសកន្លែងចាក់សំរាម។ មិនថាកន្លែងនោះត្រូវបិទ ឬពង្រីកទេ កន្លែងចាក់សំរាមដែលមានស្រាប់នឹងត្រូវ ស្ដារឡើងវិញ ដើម្បីទប់ស្កាត់ហេតុប៉ះពាល់បរិស្ថានបន្ថែមទៀត។

**គុណសម្បត្តិ គុណវិបត្តិ និងសេចក្តីសន្និដ្ឋានបឋមសម្រាប់ ជម្រើសទី១៖**  
**ការស្ដារឡើងវិញនូវទីលានចាក់សំរាម ដែលមានស្រាប់ត្រូវបានរៀបរាប់នៅក្នុងតារាងខាងក្រោម**  
**តារាង ២៖ គុណសម្បត្តិ គុណវិបត្តិ និងការវាយតម្លៃបឋមនៃជម្រើសទី១៖**  
**ស្ដារឡើងវិញនូវកន្លែងចាក់សំរាម ដែលមានស្រាប់**

គុណសម្បត្តិ	គុណវិបត្តិ	ការវាយតម្លៃបឋម
<ul style="list-style-type: none"> <li>• ទីតាំងដែលមានស្រាប់បានបែងចែកតំបន់រួចទៅហើយសម្រាប់ការប្រើប្រាស់ជាលានទុកដាក់សំរាមនិងរក្ខត្រមាននៃដីគង្គ។</li> <li>• មានផ្ទៃដីសល់បម្រុង</li> <li>• ការស្ដារឡើងវិញនៃទីតាំងបច្ចុប្បន្នអាចផ្តល់នូវផ្ទៃទំនេរបន្ថែមទៀត</li> <li>• កន្លែងចាក់សំរាមដែលមានស្រាប់នឹងតម្រូវឱ្យបិទក្នុងករណីណាមួយដូច្នោះការសន្សំសំចៃចំណាយអាចធ្វើឡើងតាមរយៈការប្រើប្រាស់បន្ត និងការពង្រីកទីតាំង</li> <li>• ផ្លូវចូលមានស្ថានភាពល្អនិងមានទីតាំងល្អពីតំបន់សេវាកម្មក្រុង ដូច្នោះរយៈពេលធ្វើដំណើរនៃការដឹកជញ្ជូនសំរាមគឺប្រហែល៣០នាទី</li> <li>• លទ្ធភាពទទួលបានការប្រើប្រាស់ប្រព័ន្ធទឹក និងអគ្គិសនី</li> <li>• គ្មានហានិភ័យទឹកជំនន់ឬកន្លែងបរិស្ថានឬតំបន់បេតិកភណ្ឌវប្បធម៌ឡើយ</li> <li>• មិនស្ថិតនៅក្នុងតំបន់ពង្រីកទឹកក្រុងសម្រាប់តំបន់ពាណិជ្ជកម្ម/លំនៅដ្ឋាន</li> <li>• ការបំពុលបច្ចុប្បន្ននឹងត្រូវបានដោះស្រាយតាមរយៈការស្ដារឡើងវិញ</li> </ul>	<ul style="list-style-type: none"> <li>• សហគមន៍ប្រជាជនរស់នៅមានចម្ងាយជិត (&gt;១.០ គីឡូម៉ែត្រ)</li> <li>• មួយផ្នែករបស់សហគមន៍បានក្តួញត្រូវ និងស្នើឱ្យបិទទីតាំង។</li> <li>• កំនរសំរាមបច្ចុប្បន្នមិនមានការគ្រប់គ្រងបរិស្ថានទេដែលនាំឱ្យមានផលប៉ះពាល់ដី ទឹកលើដី ក្រោមដី ខ្យល់។ ល។ ត្រូវការការស្ដារឡើងវិញយ៉ាងទូលំទូលាយ។</li> </ul>	<ul style="list-style-type: none"> <li>• កន្លែងចាក់សំរាមដែលមានស្រាប់គឺជាកន្លែងដែលត្រូវបានផ្សារភ្ជាប់នៅក្រោមWB ESF ហើយនឹងត្រូវការស្ដារឡើងវិញដោយមិនគិតពីថាតើវាត្រូវបានបិទឬពង្រីកដើម្បីការពារផលប៉ះពាល់បរិស្ថានអវិជ្ជមានបន្ថែមទៀតឡើយ។</li> <li>• បញ្ហាបរិស្ថាននិងសុខភាពសាធារណៈបច្ចុប្បន្ននឹងត្រូវបានដោះស្រាយតាមរយៈគម្រោង (ការសម្អាត ទឹកស្អុយក្លិនសំឡេងការផ្គត់ផ្គង់ទឹកស្អាតតាមបំពង់សម្រាប់សហគមន៍។ល។)</li> <li>• ការស្ដារឡើងវិញនូវកន្លែងចាក់សំរាមដែលមានស្រាប់បច្ចុប្បន្ន នឹងអនុញ្ញាតឱ្យអ្នករើសសំរាមលើកលែងតែកុមារបន្តមានលទ្ធភាពប្រើប្រាស់ឡើងវិញនៅទីតាំងដែលនឹងអាចធ្វើការក្រោមលក្ខខណ្ឌការងារសុខភាពនិងសុវត្ថិភាពការងារដែលប្រសើរឡើង។</li> <li>• អ្នករស់នៅក្នុងសហគមន៍អាចទទួលបានប្រាក់ចំណូលបន្ថែមតាមរយៈការងារដែលបានបង្កើតនៅកន្លែងចាក់សំរាមការស្ដារសម្ភារៈនិងកន្លែងធ្វើជីកំប៉ុស។</li> <li>• ការសន្សំផ្ទៃដីនឹងត្រូវធ្វើឡើងតាមរយៈប្រព័ន្ធគ្រប់គ្រងគេហទំព័រចែករំលែកដែលទាមទារសម្រាប់ ការបិទនិងពង្រីក (ប្រព័ន្ធសម្អាតទឹកស្អុយខ្ពស់នៃការគ្រប់គ្រងការចេញចូល)</li> <li>• ការប្រៀបធៀបកាន់តែល្អកល្លនូវរាងជម្រើសនិងផលប៉ះពាល់បឋមលើបរិស្ថាននិងសង្គមត្រូវបានរួមបញ្ចូលនៅក្នុងESIA បឋម</li> </ul>

គុណសម្បត្តិ	គុណវិបត្តិ	ការវាយតម្លៃបឋម
<ul style="list-style-type: none"> <li>• ចំណែកដ៏សំខាន់មួយសម្រាប់សហគមន៍ គឺបានលើកទឹកចិត្តក្នុងការ រើសសំរាមនៅកន្លែងចាក់សំរាម ហើយ នឹងបន្តអោយមានការចូលទៅរើ សយកសំរាមកែច្នៃឡើងវិញបាន ប៉ុន្តែមានលក្ខខណ្ឌការងារ ដែលបានគ្រប់គ្រង និងសុវត្ថិភាព។</li> </ul>		

**ជម្រើសទី២៖ ការបិទទីតាំងកន្លែងចាក់សំរាមដែលមានស្រាប់ និងការអភិវឌ្ឍន៍ទីលានចាក់សំរាមថ្មី នៅភូមិត្រពាំងទឹម ឃុំកណ្តែក**

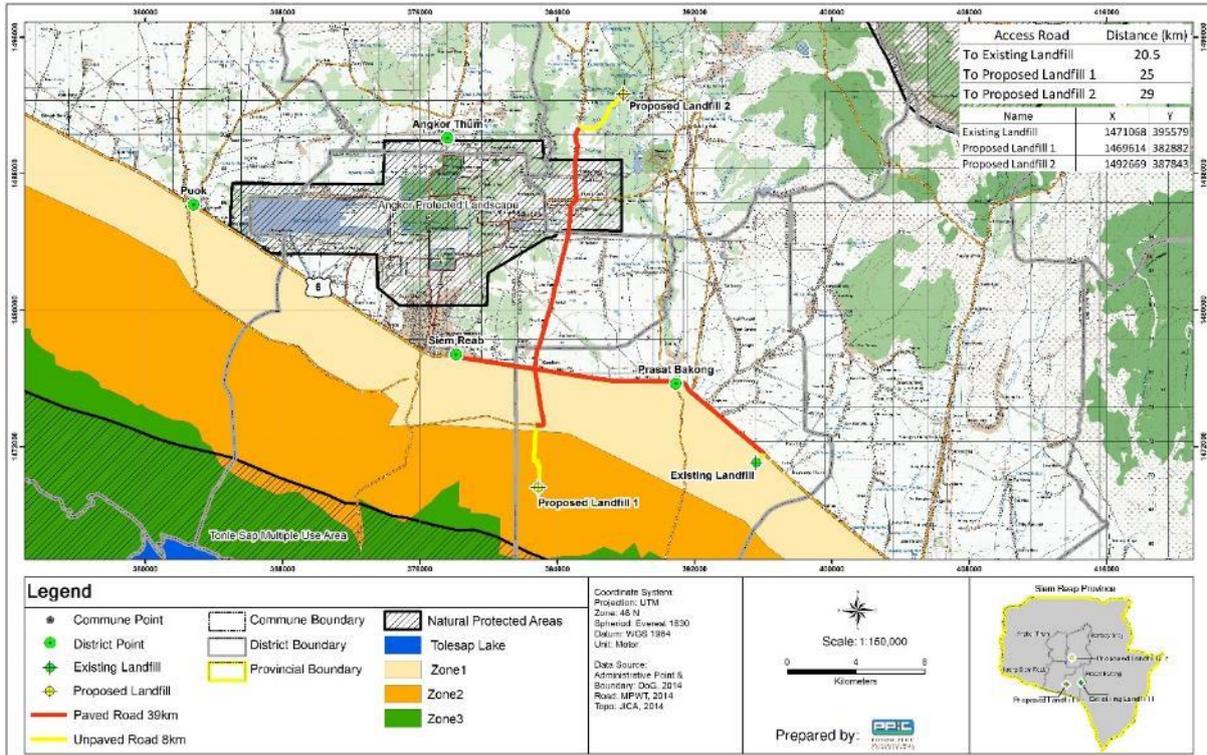
ទីតាំងសក្តានុពលសម្រាប់ទីលានចាក់សំរាមថ្មី ជម្រើសទី២មានទីតាំងនៅភូមិត្រពាំងទឹមឃុំកណ្តែកស្រុកប្រាសាទបាគង ខេត្តសៀមរាប។ វាមានទីតាំងប្រហែល១១គីឡូម៉ែត្រពីភាគអាគ្នេយ៍ នៃកណ្តាលក្រុងសៀមរាប។ ទីតាំងដ៏មានសក្តានុពលនេះគឺជាទីតាំងវាលស្មៅបៃតងជាប់នឹងរោងចក្រប្រព្រឹត្តិកម្មទឹកស្អុយនិងហ៊ី ដ៍ដោយដឹកសិកម្ម (វាលស្រែ) ដីងាយលិចទឹក និងនគរូបនីយកម្មឆាប់រហ័ស (គម្រោងបែងចែកដី)។ ភូមិដែលនៅជិតបំផុតបច្ចុប្បន្ន មានចម្ងាយជាង២គីឡូម៉ែត្រទៅភាគខាងជើងហើយទីតាំងសក្តានុពលបច្ចុប្បន្នពោរពេញដោយដីវាល និងស្រះនេសាទសហគមន៍ក្រៅផ្លូវការ។ ទីតាំងនេះជាតំបន់ដីទំនាប ដែលគេសង្ឃឹយថាមាននីវ៉ូទឹកក្រោមដីខ្ពស់ហើយងាយនឹងមាន ទឹកជំនន់។

តំបន់ទាំងមូលគឺជាផ្នែកមួយនៃផែនការពង្រីកទីក្រុងដ៏សំខាន់សម្រាប់ការអភិវឌ្ឍន៍លំនៅដ្ឋានតម្លៃ ខ្ពស់។ វាត្រូវបានកំណត់ប្រទល់ទៅភាគខាងត្បូង ដោយបឹងទន្លេសាបបម្រុងជីវចម្រុះរបស់អង្គការ យូណេស្កូ។ ផ្លូវចូលគឺនៅតាមបណ្តោយផ្លូវដី/គ្រួសក្រហម ដែលមានគុណភាពអន់ដែលក្នុងស្ថានភាពបច្ចុប្បន្នពិបាកធ្វើដំណើរក្នុង រដូវវស្សា។ ផ្លូវក្រវ៉ាក់ក្នុងដែលបានគ្រោងទុកនឹងធានាបាននូវការចូលប្រើប្រាស់បានល្អទៅកាន់ទីតាំង និងការធ្វើឱ្យប្រសើរឡើងនូវការការពារទឹកជំនន់ប៉ុន្តែទំនងជាជំរុញឱ្យមានការអភិវឌ្ឍន៍ផ្សេងៗចូល ក្នុងតំបន់នោះកាន់តែ ច្រើនផងដែរ។



**រូបភាព១៖ ជម្រើសទីតាំងសក្តានុពលចាក់សំរាមអនាម័យថ្មីស្ថិតក្នុងភូមិត្រពាំងទឹមក្រុងសៀមរាប**  
 រូបភាពខាងឆ្វេង៖ រូបភាពផ្លូវ នៃតំបន់សក្តានុពលរួម(ស្តាំ)ជាមួយខ្នងដីការពារទឹកជំនន់និងតំបន់ដាំដុះស្រូវ(ឆ្វេង)  
 រូបភាពខាងស្តាំ៖ វាលស្រែ( ស្តាំ ) ខ្នងដីការពារទឹកជំនន់( កណ្តាល)តាំងទីលានចាក់សំរាម (ឆ្វេង)

ទីតាំងសក្តានុពលនៅក្រោមជម្រើសកន្លែងចាក់សំរាមទី២ មានទីតាំងនៅកណ្តាលតំបន់ទី២ ដែលត្រូវបានកំណត់ជាតំបន់ការពារដែលមានកម្រិតការប្រើប្រាស់ដី ដោយមិនរាប់បញ្ចូលកន្លែងចាក់សំរាម។ នៅក្រោមជម្រើសនេះ កន្លែងចាក់សំរាមនឹងត្រូវបានច្របាច់រវាងតំបន់ពង្រីកទីក្រុង និងបឹងទន្លេសាប UNESCO និងបឹងទន្លេសាប បម្រុង។



រូបភាព ៣៖ ផែនទីតំបន់បម្រុងជីវមណ្ឌលបឹងទន្លេសាប (TSBR)

គុណសម្បត្តិ

គុណវិបត្តិនិងការសន្និដ្ឋានរបបលើជម្រើសទី២៖ការបិទកន្លែងចាក់សំរាមដែលមានស្រាប់ និងការអភិវឌ្ឍន៍កន្លែងចាក់សំរាមថ្មី ត្រូវបានផ្តល់ជូនខាងក្រោម។

តារាង៣៖ គុណសម្បត្តិគុណវិបត្តិនិងការវាយតម្លៃរបបនៃជម្រើសទី២៖ការបិទទីតាំងដែលមានស្រាប់ និងការអភិវឌ្ឍន៍ទីតាំងទំលាក់សំរាមថ្មីក្នុងតំបន់ក្រចេះ

គុណសម្បត្តិ	គុណវិបត្តិ	ការវាយតម្លៃរបប
<ul style="list-style-type: none"> <li>• ទីតាំងរួមគ្នាជាមួយរោងចក្រប្រព្រឹត្តិកម្មទឹកស្អាតសំណល់ថ្មីមានគុណសម្បត្តិ៖ (i) ការប្រើប្រាស់ដីរួមគ្នា/ការកំណត់តំបន់ (ii) បង្ហាញទឹកចេញពីសំរាមទៅនឹងរូបផ្សេងជាមួយកាកសំណល់ទឹកនិង (iii) WWTP បោះចោលកាកសំណល់កកទៅទីលានចាក់សំរាម។</li> <li>• ដីសាធារណៈធំទូលាយ(+៥០ហិកតា)</li> <li>• បច្ចុប្បន្នមានចំងាយ &gt; ២គីឡូម៉ែត្រពីលំនៅដ្ឋានដែលនៅជិតបំផុត។</li> <li>• ទីតាំងនេះមានសណ្តានដីរាបស្មើហើយមើលទៅដូចជាដីបាតក្រោមជាដីគង្គ។</li> <li>• គម្រោងសាងសង់ផ្លូវក្រវ៉ាក់ក្រុងផ្លូវចូលទីតាំងសល់</li> <li>• ចម្ងាយសមរម្យ (&gt; ១១គីឡូម៉ែត្រ) ពីកណ្តាលទីក្រុង។</li> </ul>	<ul style="list-style-type: none"> <li>• តំបន់ពង្រីកទីក្រុងលំនៅដ្ឋានមានតម្លៃខ្ពស់ទៅខាងជើង,</li> <li>• តំបន់អភិរក្សជីវចម្រុះរបស់អង្គការយូណេស្កូ (UNESCO) នៃបឹងទន្លេសាប និងតំបន់អភិវឌ្ឍន៍មានការរិតត្បិត (ខាងត្បូង)។ បឹងទន្លេសាបគឺជាបឹងទឹកសាបដ៏ធំបំផុតនៅអាស៊ីអាគ្នេយ៍ ហើយត្រូវបានចាត់ទុកថាជាតំបន់អភិរក្សជីវចម្រុះដោយ UNESCO ក្នុងឆ្នាំ ១៩៩៧ ដោយសារតែមានជីវចម្រុះច្រើនរបស់វា។</li> <li>• ការចូលប្រើទីតាំងនេះស្ថិតក្នុងស្ថានភាពមិនល្អនិងឆ្លងកាត់ការអភិវឌ្ឍន៍លំនៅដ្ឋានដ៏ច្រើន។</li> <li>• ទឹកក្រោមដីរាក់និងតំបន់ហានិភ័យទឹកជំនន់ដែលអាចកើតមាន។</li> <li>• ក្នុងរដូវវស្សាទឹកជោពីសំរាមត្រូវរក្សាទុកប្រមូលចេញក្រៅ។</li> <li>• ការចំណាយខ្ពស់ក្នុងសង្គមនិងហានិភ័យដោយសារអ្នករើសសំរាមបច្ចុប្បន្ននឹងបាត់បង់លទ្ធភាពទទួលបានរបស់ងាចក្រែច្នៃបាន</li> <li>• សហគមន៍នេសាទមានវត្តមាន</li> </ul>	<ul style="list-style-type: none"> <li>• ទីតាំងថ្មីដែលមានសក្តានុពលនិងអត្ថប្រយោជន៍ដោយសារនៅជិតគ្នាជាមួយ WWTP ដែលបានស្នើឡើងនិងផ្ទៃដីដែលអាចពង្រីក បានមានទំហំធំទូលាយ (+៥០ហិកតា)។</li> <li>• ទោះជាយ៉ាងណាក៏ដោយទីតាំងនេះក៏មានហានិភ័យខ្ពស់ដល់បរិស្ថាននិងសង្គមដែរដូច្នេះហើយត្រូវបានចាត់ទុកថាមិនសូវស័ក្តិសមសម្រាប់ទីលានសម្រាប់ការអភិវឌ្ឍន៍នោះទេ។ នេះដោយសារតែទីតាំងស្ថិតនៅក្នុងតំបន់អភិវឌ្ឍន៍លំនៅដ្ឋាននិងឧស្សាហកម្មដែលមានទីតាំងនៅជាប់តំបន់ទឹកជំនន់ស្ថិតនៅក្នុងតំបន់ហាមឃាត់ការអភិវឌ្ឍន៍របស់អង្គការយូណេស្កូ (UNESCO) នៃតំបន់បម្រុងមណ្ឌលជីវៈបឹងទន្លេសាប ដោយស្ថិតនៅក្នុងតំបន់ទទួលរងហានិភ័យពីទឹកជំនន់ ជាមួយនឹងបញ្ហាដែលរំពឹងទុកសម្រាប់ (លំហូរធម្មជាតិ) ការបញ្ចេញចោលនូវទឹកស្អុយក្នុងរដូវវស្សា និងដោយសារហេតុប៉ះពាល់លើអ្នករើសសំរាមនិងកម្មករនៅកន្លែងដែលមានស្រាប់។</li> </ul>

**ខេត្តកំពង់ស្ពឺ  
ជម្រើសទី១៖**

**ដែលមានស្រាប់ក្នុងភូមិសំពៅសង្កាត់ច្បារមនក្រុងច្បារមន**

**ការស្តារ**

**និងពង្រីកទីតាំងចាក់សំរាម**

ទំហំផ្ទៃដីចាក់សំរាមប្រហាក់ប្រហែល១១០ហ.ត មាន៤,៥ហ.តកំពុងដំណើរការនិង៦,៥ហ.តជា

វាលស្រែ។

ទីតាំងស្ថិតនៅជិត១០គីឡូម៉ែត្រពីក្រុងកំពង់ស្ពឺក្នុងតំបន់ដែលមានការអភិវឌ្ឍន៍ឧស្សាហកម្មនិងលំនៅដ្ឋានយ៉ាងឆាប់រហ័ស។ ទីតាំងបច្ចុប្បន្នត្រូវបានហ៊ុំព័ទ្ធដោយវាលស្រែ។

ទីតាំងបច្ចុប្បន្នត្រូវបានហ៊ុំព័ទ្ធដោយដីវាល។

ទោះជាយ៉ាងនេះក្តីការអភិវឌ្ឍន៍លំនៅដ្ឋានតម្លៃខ្ពស់កំពុងសាងសង់នៅផ្នែកខាងលិចនិងផ្នែកខាងត្បូងនៃទីលានចាក់សំរាមដែលមានស្រាប់។

មិនមានដីបន្ថែមក្នុងការពង្រីកឱ្យបានគ្រប់គ្រាន់ចំពោះទីលានបច្ចុប្បន្នទេ។

ទីលានចាក់សំរាមបច្ចុប្បន្ននឹងតម្រូវឱ្យមានការស្តារឡើងវិញដើម្បីកាត់បន្ថយហេតុប៉ះពាល់បរិស្ថាន។

មានអ្នករើសសំរាមប្រមាណ១៨នាក់ធ្វើការនៅទីលានចាក់សំរាម។ ការវាយតម្លៃការងារមូលដ្ឋានបន្ថែមទៀតគឺត្រូវការដាច់ខាតដើម្បីផ្តល់ព័ត៌មានលម្អិតទាក់ទងនឹងស្ថានភាពរបស់អ្នករើសសំរាមនៅពេលដែលគម្រោងត្រូវបានកំណត់។

គុណសម្បត្តិ

គុណវិបត្តិនិងការវាយតម្លៃបឋមលើជម្រើសទី១៖ការស្តារឡើងវិញនូវកន្លែងចាក់សំរាមដែលមានស្រាប់ត្រូវបានរៀបរាប់ក្នុងតារាងទី៤។



ក្រាហ្វិក៤៖ ទីលានចាក់សំរាម ដែលមានស្រាប់នៅភូមិសំពៅ សង្កាត់ច្បារមន ខេត្តកំពង់ស្ពឺ

តារាង៤៖ គុណសម្បត្តិ គុណវិបត្តិនិងការវាយតម្លៃបឋមនៃជម្រើសទី១៖ការស្តារកន្លែងចាក់សំរាមដែលមានស្រាប់នៅភូមិសំពៅសង្កាត់ច្បារមន ខេត្តកំពង់ស្ពឺ

គុណសម្បត្តិ	គុណវិបត្តិ	ការវាយតម្លៃបឋម
<ul style="list-style-type: none"> <li>• ទីតាំងនេះមានផ្លូវចេញចូលល្អទៅកាន់ផ្លូវជា (ក្រាលកៅស៊ូ) NR 44 និងតំបន់សេវាកម្មសំណល់រឹង។</li> <li>• គ្មានការរាយការណ៍អំពីទឹកជំនន់និងមិននៅជិតទីតាំងរើស</li> </ul>	<ul style="list-style-type: none"> <li>• នៅជិតតំបន់អភិវឌ្ឍន៍លំនៅដ្ឋានថ្មីក្នុងតំបន់ពាណិជ្ជកម្មនិងអភិវឌ្ឍន៍លំនៅដ្ឋានតម្លៃខ្ពស់។</li> <li>• មិនមានដីបន្ថែមសម្រាប់ពង្រីកជុំវិញទីតាំងដែលមានស្រាប់នោះទេ។</li> <li>• ការបិទនិងជួសជុលទីតាំងដែលមានស្រាប់នឹងមានផលប៉ះពាល់ដល់សង្គមខ្ពស់ដោយសារអ្នករើសសំរាមបច្ចុប្បន្នត្រូវធ្វើដំណើរទៅកាន់ទីលានចាក់សំរាមថ្មីដើម្បីបន្តប្រមូលសំរាមដែលអាច</li> </ul>	<ul style="list-style-type: none"> <li>• ទីលានចាក់សំរាមដែលមានស្រាប់ស្ថិតនៅក្នុងតំបន់អភិវឌ្ឍន៍លំនៅដ្ឋាននិងឧស្សាហកម្មមានតម្លៃខ្ពស់ដែលមានទំហំមិនគ្រប់គ្រាន់សម្រាប់ពង្រីក។</li> <li>• ការសន្និដ្ឋានបឋមគឺថាជម្រើសដែលសមស្របបំផុតគឺការបិទទីតាំងសម្រាប់ការចោលសំរាមហើយអាចអភិវឌ្ឍ</li> </ul>

គុណសម្បត្តិ	គុណវិបត្តិ	ការវាយតម្លៃបឋម
<p>បបរិស្ថានប្រកបដោយប្រសិទ្ធភាព និងប្រសិទ្ធភាពខ្ពស់</p> <ul style="list-style-type: none"> <li>• ទីតាំងនេះមានលក្ខណៈជាដីក្នុង/ខ្សាច់/ដីល្បាប់ដែលមានជម្រៅប្រហែលពីរម៉ែត្រ និងមានលក្ខណៈសម្បត្តិសំណង់វិស្វកម្មល្អ។</li> </ul>	<p>កែច្នៃឡើងវិញបាននិងទាមទារសំណងតាមរយៈគម្រោងស្តារជីវភាព។</p>	<p>ស្ថានីយ៍ផ្ទេរការប្រមូលសម្ភារៈនិងដីកំប៉ុស្តនៅក្នុងទីតាំងនេះ ដោយសារទីតាំងដែលមានស្រាប់មិនមានទំហំគ្រប់គ្រាន់សម្រាប់តម្រូវការនៃការពង្រីកបន្ថែម។</p> <ul style="list-style-type: none"> <li>• ម្យ៉ាងទៀតត្រូវបិទកន្លែងចាក់សំរាមឱ្យបានពេញលេញនិងចាក់ចែងដីនេះដែលសមរម្យសម្រាប់ការអភិវឌ្ឍន៍លំនៅដ្ឋានឬឧស្សាហកម្មដែលមានតម្លៃខ្ពស់នាពេលអនាគតនេះនឹងជាចំណូលហិរញ្ញវត្ថុដ៏ច្រើន ដោយសារការកើនឡើងតម្លៃអចលនទ្រព្យ។</li> <li>• ក្នុងករណីមានការបិទទាំងស្រុងអ្នករើសសំរាមបច្ចុប្បន្ននឹងត្រូវដាក់បញ្ចូលទៅក្នុងកន្លែងថ្មីផ្តល់ការចេញចូលនៅទីតាំងថ្មីឬការគាំទ្រជីវភាពផ្សេងទៀត</li> <li>• ការវិភាគបន្ថែមត្រូវផ្អែកលើដំណើរការកំណត់ទីតាំងដែលកំពុងដំណើរការបន្តទៀត</li> </ul>

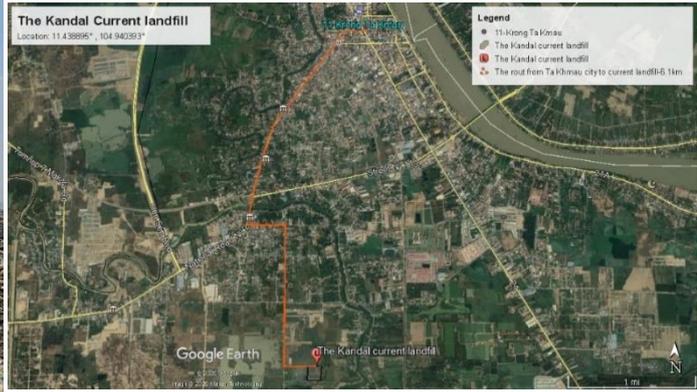
**ជម្រើសទី២៖ ការបិទទីលានចាក់សំរាមដែលមានស្រាប់ និងការអភិវឌ្ឍន៍ទីលានចាក់សំរាមថ្មី**

ជម្រើសទីតាំងពីរត្រូវបានផ្តល់ដោយរដ្ឋបាលក្រុងសម្រាប់ការអភិវឌ្ឍន៍ទីលានចាក់សំរាមថ្មី។ ទីតាំងមួយនៅខាងលិចក្រុងច្បារមននៅស្រុកសំរោងទង និងមួយកន្លែងទៀតនៅស្រុកគងពិសី។ ជម្រើសទី១ គឺស្ថិតនៅទីតាំងដាច់ស្រយាលជាង៣០គីឡូម៉ែត្រ ពីក្រុងច្បារមនហើយផ្លូវមិនល្អ ដូច្នេះវាមិនសមរម្យសម្រាប់ការអភិវឌ្ឍន៍ទេ។ ទីតាំងនៅស្រុកគងពិសីមានចំងាយប្រហែល១៥គីឡូម៉ែត្រ ផ្លូវគ្រង់ពីក្រុងច្បារមន។ យ៉ាងណាក៏ដោយទីតាំងនេះអាចធ្វើដំណើរបានតែតាមផ្លូវជាតិលេខ៤ និងផ្លូវជាតិលេខ៤១ ដែលមានចម្ងាយធ្វើដំណើរសរុប៣៦គីឡូម៉ែត្រ។ ដូច្នេះវាមិនសមស្របទេដោយសារចម្ងាយពីក្រុងហើយក៏ស្ថិតនៅក្នុងតំបន់ដែលងាយរងគ្រោះបរិស្ថាននិងវប្បធម៌ផងដែរ។ ជម្រើសទីតាំងបន្ថែមទៀត កំពុងត្រូវបានពិភាក្សាជាមួយរដ្ឋបាលខេត្ត និងក្រុងនៃខេត្តកំពង់ស្ពឺ។ ទាំងនេះមិនត្រូវបានគេរំពឹងថានឹងត្រូវបានវាយតម្លៃនោះទេ។

**ខេត្តកណ្តាល**

**ជម្រើសទី១៖ ការស្តារនិងពង្រីកកន្លែងចាក់សំរាមដែលមានស្រាប់នៅភូមិព្រែកហូរសង្កាត់ព្រែកហូរក្រុងតាខ្មៅ**

ទីលានចាក់សំរាមដែលមានស្រាប់ស្ថិតនៅក្នុងភូមិព្រែកហូរសង្កាត់ព្រែកហូរចម្ងាយប្រមាណ៦គីឡូម៉ែត្រពីក្រុងតាខ្មៅ ហើយអាចចេញចូលបានដោយផ្លូវលំមានចម្ងាយប្រហែល០,៨គីឡូម៉ែត្រពីផ្លូវក្រុង។ ដីនេះជាកម្មសិទ្ធិរបស់រដ្ឋ និងស្ថិតនៅក្នុងតំបន់លំនៅដ្ឋានដែលមានផ្ទៃដីសរុបចំនួន២ហិកតា កំពុងដំណើរការលើដីរបស់រដ្ឋ។ មានអ្នករើសសំរាម ប្រមាណ១០០នាក់ដែលធ្វើសកម្មភាពរើសសំរាមដើម្បីជីវភាពរស់នៅរបស់ពួកគេ ហើយភាគច្រើនរស់នៅក្នុងភូមិជុំវិញទីលានចាក់សំរាមដែលលទ្ធភាពទទួលបានទឹកប្រើប្រាស់និងអនាម័យនៅមានកម្រិត។ ដីសម្រាប់ពង្រីកមិនគ្រប់គ្រាន់ដោយសារមានការអភិវឌ្ឍជុំវិញនិងទីតាំងក្នុងតំបន់អភិវឌ្ឍន៍មានតម្លៃខ្ពស់។



ក្រាហ្វិក៍នេះទិលានចាក់សំរាមដែលមានស្រាប់នៅភូមិព្រែកហូរ សង្កាត់ព្រែកហូរ ខេត្តកណ្តាល គុណសម្បត្តិ

និងការវាយតម្លៃបឋមលើជម្រើសទី១៖ការស្តារឡើងវិញនូវទិលានចាក់សំរាមដែលមានស្រាប់ត្រូវបាន គុណវិបត្តិ

បង្ហាញក្នុងតារាងទី៥។

តារាង៥៖ គុណសម្បត្តិ គុណវិបត្តិ និងការវាយតម្លៃបឋមលើជម្រើសទី១៖ការស្តារឡើងវិញនូវកន្លែងចាក់សំរាមដែលមានស្រាប់នៅខេត្តកណ្តាល

គុណសម្បត្តិ	គុណវិបត្តិ	សន្និដ្ឋានបឋម
<ul style="list-style-type: none"> <li>• តំបន់ដែលមានស្រាប់ត្រូវបានប្រើប្រាស់រួចទៅហើយជាដីគោកហើយនឹងតម្រូវឱ្យមានការវិនិយោគបន្ថែមទៀតសម្រាប់ការស្តារឡើងវិញ។</li> <li>• ទីតាំងនេះមានការចូលដំណើរការយ៉ាងល្អទៅកាន់តំបន់សេវាកម្មផ្លូវជំនិងទីក្រុងនៅក្បែរនោះ។</li> <li>• ដីបន្ថែមនៅជុំវិញទីតាំងនោះអាចរកបាន។</li> <li>• ការសន្សំសំចៃចំណាយអាចធ្វើឡើងតាមរយៈការពង្រីកតំបន់ ដែលមានស្រាប់និងប្រព័ន្ធគ្រប់គ្រងហេដ្ឋារចនាសម្ព័ន្ធរួម និងបរិស្ថាន (ឧទាហរណ៍ ដូចជាផ្លូវប្រព័ន្ធលូរោងចក្រប្រព្រឹត្តិកម្មទឹកស្អុយ។ល។) ជាមួយរណ្តៅបច្ចុប្បន្ន។</li> <li>• ទីតាំងនេះមិនត្រូវបានរាយការណ៍ថាមានទំនោរទៅរកទឹកជំនន់ទេហើយជាទូទៅមិននៅជិតកន្លែងងាយទទួលរងនូវបរិស្ថានឬកន្លែងកេរ្តិ៍ដំណែលរបៀបធម៌ឡើយ។</li> <li>• ទីតាំង (ពីការអង្កេតដំបូង) ខាងក្រោមជាដីគ្រប់ដុំដីប្រាបទឹក</li> </ul>	<ul style="list-style-type: none"> <li>• ទីតាំងដែលមានស្រាប់មានចំងាយមិនដាច់ពីផ្លូវជាតិលេខ១១ ពីផ្ទះប្រជាពលរដ្ឋដែលមានលក្ខណៈរីកយ៉ាងឆាប់រហ័សហើយត្រូវបានរំពឹងថាទៅទៀតនៃទីតាំងចាក់សំរាមនៅក្នុងពេលខាងមុខដ៏ខ្លីនេះហើយសហគមន៍ក៏បានកវ៉ារឿងហេតុប៉ះពាល់ទាំងនេះដែរ។</li> <li>• ទីតាំងមាននិរុទ្ធិកក្រោមដីទាប។</li> <li>• ទិលាននេះគ្មានការត្រួតពិនិត្យបរិស្ថានដូច្នោះនឹងត្រូវការស្តារឡើងវិញជាចាំបាច់។</li> <li>• ទ្រុឌទ្រោមមិនមានការគ្រប់គ្រងបរិស្ថានទេ។</li> <li>• រណ្តៅចាក់បច្ចុប្បន្នមិនមានស្រទាប់ការពារ ការប្រមូលឬប្រព្រឹត្តិកម្មទឹកស្អុយទេដែលនាំឱ្យមានការបំពុលទឹកក្រោមដីខ្លាំង។</li> <li>• ការបិទឬស្តារទិលានដែលមានស្រាប់នេះអាចមានហេតុប៉ះពាល់សង្គមខ្ពស់ដោយសារអ្នករើសសំរាម</li> </ul>	<ul style="list-style-type: none"> <li>• សេចក្តីសន្និដ្ឋានបឋម៖ការបិទជាមួយនឹងការស្តារឡើងវិញនូវទិលានចាក់សំរាមដែលមានស្រាប់ហាក់ដូចជាជម្រើសដ៏សមស្របបំផុតដោយសារវាមានទំហំមិនគ្រប់គ្រាន់សម្រាប់ការប្រើប្រាស់ជាបន្តជាទិលានចាក់សំរាមដោយសារតែសហគមន៍មានការរីកចម្រើនយ៉ាងឆាប់រហ័សក្នុងទិសដៅនៃតំបន់។</li> <li>• ស្ថានីយ៍ផ្ទេរកន្លែងធ្វើដឹកជញ្ជូននិងកន្លែងកែច្នៃសំរាមអាចមានទីតាំងនៅកន្លែងដែលមានស្រាប់ដើម្បីបន្តផ្តល់លទ្ធភាពទទួលបានធនធានដល់អ្នករើសសំរាម។</li> <li>• កន្លែងចាក់សំរាមដែលមានស្រាប់ស្ថិតនៅក្នុងតំបន់អភិវឌ្ឍន៍មានតម្លៃខ្ពស់។</li> <li>• ទីតាំងបច្ចុប្បន្នអាចត្រូវស្តារឡើងវិញទៅចំណុចមួយដែលសមរម្យសម្រាប់ការអភិវឌ្ឍន៍លំនៅដ្ឋាន/ឧស្សាហកម្មនាពេលអនាគតជាមួយនឹងប្រាក់ចំណូលយ៉ាងច្រើន។</li> <li>• ក្នុងករណីមានការបិទទាំងស្រុងអ្នករើសសំរាមបច្ចុប្បន្ននឹងត្រូវដាក់បញ្ឈប់ទៅក្នុងកន្លែងថ្មីផ្តល់ការចេញចូលទៅកាន់ទីតាំងថ្មីឬជំនួយជីវភាពពួកគាត់តាមមធ្យោបាយផ្សេងៗទៀត</li> <li>• ការវិភាគបន្ថែមដោយផ្អែកលើជម្រើសទីតាំងផ្សេងៗ</li> </ul>

គុណសម្បត្តិ	គុណវិបត្តិ	សន្និដ្ឋានបឋម
	<p>រាមត្រូវធ្វើដំណើរឆ្ងាយទៅកាន់ទីតាំងថ្មីដើម្បីបន្តការងាររើសសំរាម និងមានការផ្តល់នូវសំណងដើម្បីស្តារជីវភាពរស់នៅរបស់ពួកគាត់។</p>	

**ជម្រើសទី២៖ ការបិទកន្លែងចាក់សំរាមដែលមានស្រាប់និងការអភិវឌ្ឍន៍ទីលានចាក់សំរាមថ្មី**

ទីតាំងចំនួនបីត្រូវបានផ្តល់ដំបូងដោយរដ្ឋបាលក្រុងជាជម្រើសសក្តានុពលសម្រាប់ការអភិវឌ្ឍន៍ទីលានចាក់សំរាមថ្មី



**ក្រាហ្វិក៖ ស្ថានភាពដើមនៃជម្រើសទីតាំងទីលានចាក់សំរាម A ឆ្វេង និង B ស្តាំ នៅខេត្តកណ្តាល**

ទីតាំងទាំងពីរ A និង B មិនសាកសមទេដោយសារកន្លែងទាំងនេះត្រូវបានជីកយកដីហើយ ដូច្នេះវាមិនសមរម្យសម្រាប់ការអភិវឌ្ឍន៍ទីលានចាក់សំរាមទេ។ កន្លែងយកដី និងការជីកកាយដែលស្ថិតនៅក្រោមកម្រិតទឹកក្រោមដីច្រើនករណីនឹងបំពេញដោយទឹក។ ប្រសិនបើស្រទាប់ការពារខាងក្រោមត្រូវបានធ្វើនៅក្រោមកម្រិតទឹកក្រោមដីលំហូរនៃទឹកនឹងលើក ស្រទាប់ការពារនោះនៅពេលដែលសំណល់មិនទាន់បានចាក់ និងបណ្តាលឱ្យបរាជ័យ។ ទោះបីជាវាមានស្ថេរភាព អាចត្រូវបានបង្កើតនៅកន្លែងយកដីដោយ ដោយសារតែវាមិនស្ថិតនៅក្រោមកម្រិតទឹកនឹងត្រូវការការបូមទឹកចេញជាប្រចាំដើម្បីទាញយកទឹក សំណល់ចេញ ព្រោះមិនមានលំហូរធម្មជាតិទេ។ បច្ចេកទេសវិស្វកម្មនិងការចំណាយពាក់ព័ន្ធជាច្រើននឹងត្រូវការជាចាំបាច់។ ជម្រើសទីតាំងបន្ថែមទៀតកំពុងត្រូវការពិភាក្សាជាមួយរដ្ឋបាលខេត្ត និងក្រុងនៃខេត្តកណ្តាល។ ទាំងនេះមិនត្រូវ បានគេរំពឹងថានឹងត្រូវបានរាយការណ៍មុនពេលរាយការណ៍នោះទេ។

**ហានិភ័យបរិស្ថាន និងសង្គមដែលអាចកើតមាន ផលប៉ះពាល់ និងវិធានការកាត់បន្ថយ**

**ហានិភ័យ និងហេតុប៉ះពាល់នៃទីតាំងដែលមានស្រាប់**  
 ក្រោមសេណារីយ៉ូ " មិនធ្វើអ្វីទាំងអស់ " ទីលានចាក់សំរាមក្នុងខេត្តសៀមរាបកំពង់ស្ពឺនិងកណ្តាលនឹងបន្តបង្កហានិភ័យដល់បរិស្ថានសង្គមនិង ដុះសុខភាពសាធារណៈយ៉ាងធ្ងន់ធ្ងរដល់កម្មករសហគមន៍និងបរិស្ថានជុំវិញ។ សរុបមកគម្រោងនេះត្រូវបានគេរំពឹងថានឹងផ្តល់អត្ថប្រយោជន៍ដល់ប្រទេសនិងប្រជាជនតាមរយៈ ការកាត់ បន្ថយការបំពុលនិងការការពារបរិស្ថានជាមួយនឹងអត្ថប្រយោជន៍បរិស្ថាននិងសង្គមជាវិជ្ជមានយ៉ាង ច្រើន។ កង្វល់ផ្នែកបរិស្ថាន និងសង្គមដែលមានស្រាប់នៅតំបន់គម្រោងអាទិភាពនៃខេត្តសៀមរាបកំពង់ស្ពឺនិងកណ្តាលរួមមាន ដូចខាងក្រោម៖

**តារាង៖ កង្វល់បរិស្ថានសុខភាពសង្គមនិងសាធារណៈនៅកន្លែងចាក់សំរាម ដែលមានស្រាប់**

<p><b>បរិស្ថាន</b></p>	<ul style="list-style-type: none"> <li>• គ្មានទីតាំងណាមួយដែលមានស្រាប់នៅក្នុងខេត្តសៀមរាបកំពង់ស្ពឺនិងកណ្តាលអនុលោមតាម ហេដ្ឋារចនាសម្ព័ន្ធនិងស្តង់ដារនៃទីលានចាក់សំរាមអនាម័យអប្បបរមាជាតិ និង/ឬអន្តរជាតិទេ។</li> </ul>
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	<ul style="list-style-type: none"> <li>• ទីលានដែលមិនមានស្រទាប់ការពារបែបបច្ចេកទេសវិស្វកម្មការប្រមូលទឹកស្អុយពីសំរាមប្រព័ន្ធបង្ហូរនិងការប្រព្រឹត្តិកម្មទឹកសំណល់បានបណ្តាលឱ្យមានផលប៉ះពាល់បរិស្ថានគុណភាពទឹកលើផ្ទៃនិងក្រោមដីនិងដីតាមរយៈការបញ្ចេញទឹកស្អុយពីសំរាមដែលមិនបានត្រួតពិនិត្យនិងមិនបានធ្វើប្រព្រឹត្តិកម្ម។</li> <li>• កង្វះគម្របកម្រិតមធ្យមនិងការបិទបាំងនិងការបិទរណ្តៅសំរាមដែលពេញប៉ះពាល់ដល់គុណភាពខ្យល់និងបរិស្ថានជុំវិញតាមរយៈក្លិនការបញ្ចេញGHG មានរុយនិងសំរាមប្រើប្រាស់ខ្យល់។</li> <li>• អគ្គិភ័យកើតឡើងជាទូទៅតាមរយៈការខ្វះការគ្រប់គ្រងទីលានចាក់សំរាមអោយបានត្រឹមត្រូវ។នេះរាប់ពាក់ព័ន្ធនឹងគុណភាពខ្យល់ម្តងទៀត។ក្លិនធ្ងន់និងផ្សែងគឺជាបញ្ហាធ្ងន់ធ្ងរដែលមិនអាចគ្រប់គ្រងបាន។</li> <li>• ប្លាស្ទិកមានប្រហែល១០ % នៃសំរាមសរុបទន្លេមេគង្គជាទន្លេមួយក្នុងចំណោមទន្លេដែលមានការបំពុលច្រើនជាងគេនៅទូទាំងពិភពលោក។រាងជានីត្តពេញជាប្រភពដ៏សំខាន់មួយនៃការបំពុលនេះនិងផលប៉ះពាល់នៃការបំពុលដោយប្លាស្ទិករវាងស្ទះលំហូរទឹកសំណល់រាក់បណ្តាលឱ្យមានការបំពុលខ្យល់នៅក្នុងករណីមានភ្លើងឆេះនិងប៉ះពាល់ដល់ប្រព័ន្ធអេកូឡូស៊ីសកម្មភាពកែច្នៃឡើងវិញមានភស្តុតាងសម្រាប់តែជួរប្លាស្ទិកបង្កបង្កើតនិងកំបុងអាលុយមីញ៉ូមប៉ុណ្ណោះ។ការកែច្នៃសំរាមក្នុងក្រុងស្ទើរតែគ្មាន។</li> <li>• ការចាក់សំណល់គ្រោះថ្នាក់ដោយមិនមានការចាក់ចែងត្រឹមត្រូវវាត្រូវបានគ្រប់គ្រងដោយច្បាប់និងបទប្បញ្ញត្តិប៉ុន្តែជាក់ស្តែងមិនត្រូវបានអនុវត្តទៅសំរាមវេជ្ជសាស្ត្រត្រូវឱ្យបោះចោលដាច់ដោយឡែកពីគេ។ទាំងនេះជះឥទ្ធិពលលើកន្លែងចាក់សំរាមទាំងគុណភាពទឹកនិងផ្តល់ហានិភ័យដល់សុខភាពសាធារណៈ។អ្នកភូមិជាធម្មតាពឹងផ្អែកលើទឹកក្រោមដីឬទឹកលើដីហើយការបំពុលទឹកប៉ះពាល់ដល់សុខភាពនិងសុវត្ថិភាពសហគមន៍។</li> <li>• សំណេរខាននិងការបំពុលកើតឡើងពីស្ថានីយ៍ផ្ទេរដែលគ្រប់គ្រងមិនបានល្អ TPS ជាពិសេសនៅក្នុងខេត្តសៀមរាបដែលមានបញ្ហាបរិស្ថានដូចគ្នាជាច្រើនដែលបានលើកឡើងនៅកន្លែងចាក់សំរាមនិងការដឹកជញ្ជូនសំណល់តាមឡានដឹក។</li> </ul>
<p><b>សង្គម</b></p>	<ul style="list-style-type: none"> <li>• មិនមានការត្រួតពិនិត្យលើអ្នករើសសំរាមក្រៅផ្លូវការដែលធ្វើការនៅកន្លែងចាក់សំរាមក្នុងខេត្តសៀមរាបកណ្តាលនិងកំពង់ស្ពឺទេ។មិនមានបទប្បញ្ញត្តិដែលធានាសុខភាពនិងសុវត្ថិភាពរបស់ពួកគេទេ។អ្នករើសសំរាមទាំងនេះភាគច្រើនជាស្ត្រីនិងកុមារ។អ្នករើសសំរាមមួយចំនួនរស់នៅលើឃុំក្បែរកន្លែងចាក់សំរាមហើយទទួលបានប្រាក់ចំណូលចម្បងរបស់ពួកគេពីការរើសសំរាម។</li> <li>• សហគមន៍ដែលរស់នៅក្បែរកន្លែងចាក់សំរាមនិងតាមបណ្តោយផ្លូវដឹកជញ្ជូនសំណល់ត្រូវបានរងផលប៉ះពាល់ជាប្រចាំដោយការបំពុលពីកន្លែងSWM និងប្រតិបត្តិការរបស់វា។ផលប៉ះពាល់ទាំងនេះរួមមានការបំពុលបរិយាកាសពីការដុតកាកសំណល់និងផ្សែងរថយន្ត។ការបំពុលដោយសំឡេងពីឡានដឹកសំរាមនិងការបំពុលប្រភពទឹក។</li> <li>• ខ្វះខាតច្បាប់ដែលគ្រប់គ្រងបានទៅកាន់កំបង់គ្រោះថ្នាក់នៅកន្លែងចាក់សំរាមដែលអាចបង្កហានិភ័យដល់សុខភាពសុវត្ថិភាពរបស់អ្នករើសសំរាមនិងសមាជិកដទៃទៀតនៃសហគមន៍ជុំវិញ។</li> <li>• សហគមន៍មានការយល់ដឹងតិចតួចអំពីតួនាទីនិងទំនួលខុសត្រូវរបស់ពួកគេក្នុងការគ្រប់គ្រងសំរាមអោយបានល្អការបែងចែកសំណល់ការកាត់បន្ថយសំណល់និងការកែច្នៃឡើងវិញ។ការដុតសំរាមនិងការបោះចោលក្នុងទីធ្លាចំហរនិងទឹកគឺជាការប្រព្រឹត្តិទូទៅ។យុទ្ធនាការផ្សព្វផ្សាយការយល់ដឹងជាសាធារណៈនៅមានកម្រិត។</li> </ul>
<p><b>សុខភាព និងសុវត្ថិភាពសាធារណៈនិងសហគមន៍ និងOHS</b></p>	<ul style="list-style-type: none"> <li>• ប្រតិបត្តិការមិនល្អនៃកន្លែងចាក់សំរាមនិងការដាក់កាកសំណល់មិនល្អបណ្តាលឱ្យមានស្ថានភាពគ្រោះថ្នាក់នៅលើផ្ទៃចាក់សំរាមដែលគំនរសំណល់មិនស្ថិតស្ថេរដោយនឹងដួលរលំបង្កហានិភ័យដល់បុគ្គលិកអនាម័យអ្នករើសសំរាមនិងសហគមន៍ជុំវិញ។</li> <li>• កង្វះការបណ្តុះបណ្តាលការយល់ដឹងនិងការផ្តល់ឧបករណ៍សុវត្ថិភាពធ្វើឱ្យទាំងបុគ្គលិកអនាម័យនិងអ្នករើសសំរាមមានហានិភ័យ។</li> <li>• ការចោលសំរាមខុសច្បាប់ជាពិសេសសំរាមមន្ទីរពេទ្យនៅកន្លែងចាក់សំរាមធ្វើឱ្យសុខភាពនិងសុវត្ថិភាពរបស់កម្មករនិងអ្នករើសសំរាមមានហានិភ័យ។</li> <li>• ស្ថានីយ៍ផ្ទេរនិងឧបករណ៍ដឹកជញ្ជូនដែលដំណើរការមិនល្អបង្កហានិភ័យដល់សុខភាពនិងសុវត្ថិភាពរបស់បុគ្គលិកអនាម័យនិងអ្នករើសសំរាម។</li> </ul>

ទោះបីជាកម្រោងនេះនឹងកាត់បន្ថយការបំពុលនិងការពារកែលម្អបរិស្ថានក៏ដោយវាអាចទៅរួចដែលផលប៉ះពាល់និងហានិភ័យនៃបរិស្ថាននិងសង្គមដែលអាចកើតមានអាចនៅតែមានកម្រិតខ្ពស់ៗក្នុងអំឡុងពេលសកម្មភាពជាក់លាក់នៃកម្រោង។អនុគម្រោងដែលរំពឹងទុកត្រូវបានពិនិត្យដើម្បីកំណត់នូវសារៈសំខាន់អំពីហានិភ័យបរិស្ថាននិងសង្គមដែលពាក់ព័ន្ធការពិនិត្យនេះត្រូវបានធ្វើឡើងស្របតាមចំណាត់ថ្នាក់ហានិភ័យបរិស្ថាននិងសង្គមរបស់WB ESN ដែលមានហានិភ័យខ្ពស់បង្កបង្កើននិងទាបដោយផ្អែកលើកត្តាពាក់ព័ន្ធមួយចំនួន។

យោងតាមការវិភាគនៃកម្រិតហានិភ័យដែលអាចកើតមាននិងវិធានការកាត់បន្ថយរបស់អនុគម្រោងដែលរំពឹងទុកនៅក្រោមគម្រោងមេសេចក្តីសង្ខេបរបបនៃហានិភ័យបរិស្ថាននិងសង្គមត្រូវបានរៀបរាប់ក្នុងតារាងទី៧។

**តារាង៧: សេចក្តីសង្ខេបនៃការវាយតម្លៃរបបចំពោះកម្រិតហានិភ័យបរិស្ថាននិងសង្គម**

សកម្មភាព	អត្រាហានិភ័យជាមុន
ការសាងសង់ទីលានចាក់សំរាមថ្មី	ខ្ពស់ (បរិស្ថាននិងសង្គម)
ការសាងសង់ស្ថានីយផ្ទេរ និងបែងចែក	មធ្យម (បរិស្ថាននិងសង្គម)
ការសាងសង់អគារកែច្នៃសម្ភារៈឡើងវិញ	បង្អស់ (បរិស្ថាននិងសង្គម)
ការសាងសង់កន្លែង សំអាត ធ្វើជី និងកែច្នៃសំរាមឡើងវិញ	បង្អស់ (បរិស្ថាននិងសង្គម)
ការស្តារឡើងវិញ / ការពង្រីកទីលានចាក់សំរាម	ខ្ពស់ (បរិស្ថាននិងសង្គម)
ការបិទកន្លែងសំរាម	ខ្ពស់ (សង្គម)

បរិក្ខារប្រមូលសំរាម សកម្មភាពTA ដូចជាការកសាងសមត្ថភាពការអភិវឌ្ឍគោលនយោបាយសកម្មភាពផ្សព្វផ្សាយការកែលំអរទីក្រុងនៅក្នុងSWM ។ល។	ទាប ការពិនិត្យជ្រើសរើសE S& និងរួមបញ្ចូលនូវហេតុប៉ះពាល់ដែលជាផ្នែកមួយ នៃ AT (បរិស្ថាន និងសង្គម)
វត្តមានអ្នករើសសំរាម(រួមទាំងកុមារ)	ខ្ពស់ (សង្គម)

ក្រុមដែលងាយរងគ្រោះ និងមានការលំបាក៖ អ្នករើសសំរាម

ជាមួយនឹងការផ្លាស់ប្តូរទីលានចាក់សំរាមបើកចំហរ ទៅជាទីលានទុកដាក់សំរាមប្រកបដោយ អនាម័យ វាមានហានិភ័យសម្រាប់ប្រាក់ចំណូលរបស់អ្នករើសសំរាមនៅទីលានចាក់សំរាមដែលមានស្រាប់នៅក្នុងករណីដែលមានការបាត់បង់លទ្ធភាពទទួលបានធនធានសំរាម។ នេះអាចជះឥទ្ធិពលដល់ជីវភាពរស់នៅរបស់អ្នករើសសំរាម ជាពិសេសសម្រាប់អ្នករើសសំរាមដែលមិនមានប្រភពចំណូលផ្សេងទៀតក្រៅពីការរើសសំរាម។

ហានិភ័យទាំងនេះនឹងត្រូវបានកាត់បន្ថយតាមរយៈការធានានូវលទ្ធភាពទទួលបានធនធានសំរាមដែលត្រូវបន្តសម្រាប់អ្នករើសសំរាមពេញវ័យទាំងអស់ ក្រោមលក្ខខណ្ឌការងារ សុខភាព និងសុវត្ថិភាពដែលត្រូវធ្វើឱ្យប្រសើរឡើងនៅក្នុងកន្លែងទាញយកធនធានដែលអាចប្រើប្រាស់ឡើងវិញ និងផ្តល់ឱកាសអាទិភាពដើម្បីដាក់ពាក្យនៅការងារសមស្របនៅក្នុងក្រុមហ៊ុនគ្រប់គ្រងទីលានទុកដាក់សំរាម។ សម្រាប់អ្នករើសសំរាមដែលពឹងផ្អែកទាំងស្រុងលើការរើសសំរាមសម្រាប់ទ្រទ្រង់ជីវភាពរស់នៅ និងអ្នករើសសំរាមដែលជាកុមារ វិធានការគាំទ្របន្ថែមគឺអាចអនុវត្តបាន។ វិធានការបន្ថែមជាច្រើនសម្រាប់ក្រុមផ្សេងគ្នានៃអ្នករើសសំរាមត្រូវបានរៀបរាប់ខាងក្រោម។

**ជៀសវាងការខ្វះខាតដល់ជីវភាពរស់នៅដែលពឹងផ្អែកទាំងស្រុងលើការរើសសំរាម ព្រមទាំងវិធានការគាំទ្របន្ថែមសម្រាប់អ្នករើសសំរាមពេញវ័យអាយុលើស ១៨ឆ្នាំ**

- គម្រោងនេះនឹងអនុញ្ញាតឱ្យអ្នករើសសំរាមសម្រាប់មនុស្សពេញវ័យបន្តការញែក និងការទាញយកសំរាមនៅក្នុងកន្លែងទាញយកធនធានមកប្រើប្រាស់ឡើងវិញក្រោមលក្ខខណ្ឌការងារ (ការងារ សុខភាព និងសុវត្ថិភាព) ដែលមានភាពប្រសើរឡើង និងជាមួយនឹងវិធានការត្រួតពិនិត្យដូចជាការចុះឈ្មោះ ដើម្បីជៀសវាងការហូរចូលអ្នកថ្មី។ លើសពីនេះ គម្រោងនឹងផ្តល់អាទិភាពដល់អ្នករើសសំរាមសម្រាប់មនុស្សពេញវ័យ ដើម្បីដាក់ពាក្យសុំការងារសមរម្យនៅក្នុងក្រុមហ៊ុនគ្រប់គ្រងទីលានទុកដាក់សំរាម និងផ្តល់ការគាំទ្រសម្រាប់ការបណ្តុះបណ្តាលជំនាញចាំបាច់។ ទាំងនេះ គឺជាវិធានការចម្បងៗ ដើម្បីបញ្ឈប់សកម្មភាព បង្កផលប៉ះពាល់ដល់ជីវភាពរស់នៅ

ដោយសារការបាត់បង់លទ្ធភាពទទួលបានធនធានសំរាម។ លើសពីនេះទៀត វិធានការគាំទ្របន្ថែមត្រូវបានអនុវត្ត។ វិធានការសំខាន់ៗមានដូចខាងក្រោម៖

- ដោយមានការជៀសវាងការរំខានដល់វិធានការចិញ្ចឹមជីវិតដែលពឹងផ្អែកលើការរើសសំរាម៖  
បន្តអនុញ្ញាតឱ្យអ្នករើសសំរាមពេញវ័យចូលទៅក្នុងទីលានទុកដាក់សំរាមថ្មីក្នុងកន្លែងព្រែកសំរាមដែលអាចកែច្នៃឡើងវិញ (កន្លែងព្រែក/ទាញយកធនធាន) និងកន្លែងធ្វើជីកំប៉ុស្ត ដោយអនុលោមតាមគោលការណ៍ណែនាំសុវត្ថិភាព និងសុខភាពឱ្យបានហ្មត់ចត់។ ជាមួយគ្នានេះក្រុមហ៊ុនគ្រប់គ្រងទីលានទុកដាក់សំរាមនឹងត្រូវធ្វើការចុះបញ្ជីឈ្មោះ និងផ្ទៀងផ្ទាត់អាយុរបស់អ្នករើសសំរាមឱ្យបានត្រឹមត្រូវ ដោយមានតែអ្នកដែលបានចុះបញ្ជីឈ្មោះអ្នករើសសំរាមប៉ុណ្ណោះដែលមានសិទ្ធិអាស្រ័យផលពីទីលានទុកដាក់សំរាម និងមិនត្រូវអនុញ្ញាតឱ្យនាំសមាជិកគ្រួសារដែលមិនបានចុះបញ្ជីចូលទីលានទុកដាក់សំរាមជាមួយនោះទេ។ វិធានបែបនេះនឹងធានាថាគម្រោងនឹងមិនដកចេញនូវលទ្ធភាពទទួលបានធនធានសំរាម និងជៀសវាងផលប៉ះពាល់ដល់ជីវភាពរស់នៅ និងក្នុងពេលតែមួយការគ្រប់គ្រងលំហូរចូលថ្មី។

- វិធានការបន្ថែមដើម្បីគាំទ្រក្រុមអ្នករើសសំរាមដែលងាយរងគ្រោះ និងជួបការលំបាក៖  
ជាពិសេសសម្រាប់អ្នកដែលពឹងផ្អែកទាំងស្រុងលើចំណូលពីការរើសសំរាមក្នុងការទ្រទ្រង់ជីវភាពរស់នៅ និងមិនទាន់មានប័ណ្ណសមធម៌នឹងត្រូវបានការជួយសម្របសម្រួលពីគម្រោងឱ្យទទួលបានប័ណ្ណសមធម៌តាមរយៈយន្តការ នៃការស្នើសុំ (On-Demand ID Poor)<sup>1</sup> នៅពេលដែលពួកគេគាត់មានលក្ខណៈសម្បត្តិគ្រប់គ្រាន់តាមលក្ខខណ្ឌប័ណ្ណសមធម៌។ លើសពីនេះ ពួកគេនឹងទទួលបានព័ត៌មាន និងការបញ្ជូនឈ្មោះទៅកាន់កម្មវិធីជំនួយសង្គមផ្សេងៗ ដែលកំពុងអនុវត្តដោយរាជរដ្ឋាភិបាល ឬអង្គការមិនមែនរដ្ឋាភិបាលក្នុងខេត្ត ដូចជាការប្រយោជន៍គ្រួសារថ្មី ដែលត្រូវរំពឹងថានឹងចាប់ផ្តើមនៅឆ្នាំ ២០២៣។

ការរៀបចំការរចនា និងការគ្រប់គ្រងសម្រាប់កន្លែងព្រែកយកធនធានសម្រាប់ប្រើប្រាស់ឡើងវិញ និងកន្លែងធ្វើជីកំប៉ុស្ត និងបញ្ចូលវិធានការដើម្បីអនុញ្ញាតឱ្យក្រុមងាយរងគ្រោះ និងជាពិសេសស្ត្រីអាចធ្វើការព្រែកយកសំរាមប្រើប្រាស់ឡើងវិញជាមួយនឹងលក្ខខណ្ឌការងារ សុខភាព និងសុវត្ថិភាពត្រឹមត្រូវ និងផ្តល់ការបណ្តុះបណ្តាលជំនាញ ដោយរួមទាំងជាមួយនឹងការផ្តោតលើស្ត្រី (ងាយរងគ្រោះ)។ **វិធានការគាំទ្រសម្រាប់កុមារអាយុចន្លោះពី ១៤ឆ្នាំដល់ ១៨ឆ្នាំ**

គម្រោងនេះនឹងផ្តល់ជំនួយគាំទ្រដល់កុមាររើសសំរាម។ ជំនួយគាំទ្រនេះនឹងមិនត្រូវបានផ្តល់ជាសាច់ប្រាក់ ឬគុណទានទេ ដោយសារការស្តារជីវភាពរស់នៅនឹងមិនត្រូវបានអនុវត្តទេ ពីព្រោះកុមារត្រូវតែនៅសាលារៀន។ ជំនួយគាំទ្រនេះ នឹងត្រូវបានផ្តល់ជូនតាមរយៈកម្មវិធីជំនួយសង្គមរបស់រដ្ឋាភិបាល និងអង្គការក្រៅរដ្ឋាភិបាលដែលមានស្រាប់។ ក្នុងករណីដែលកម្មវិធីដែលមានស្រាប់ខ្វះខាតគម្រោងនឹងផ្តល់ការគាំទ្របន្ថែមជាមួយនឹងជម្រើសមួយ

<sup>1</sup> កម្មវិធីសមធម៌មានគោលបំណងសម្រេចបាននូវសមាហរណកម្មនៃការកំណត់អត្តសញ្ញាណគ្រួសារត្រឹមត្រូវដែលជា ភារកិច្ចរបស់ក្រុមប្រឹក្សាឃុំ និងរចនាសម្ព័ន្ធគាំទ្ររបស់ពួកគេ ហើយប្រើប្រាស់ជាឧបករណ៍សម្រាប់កំណត់គោលដៅសេវានិងជំនួយដល់គ្រួសារត្រឹមត្រូវ។ ដំណើរការទាំងមូលនៃកម្មវិធី និងដំណើរការតាមរយៈកម្មវិធីសមធម៌តាមការត្រូវចំណាយពេលប្រហែលមួយខែ។

<sup>2</sup> កញ្ចប់អត្ថប្រយោជន៍គ្រួសារថ្មីមានគោលបំណង (i) ដើម្បីផ្តល់ជំនួយសង្គមដំបូងដល់ទូលាយ និងគ្រប់គ្រាន់ដែលគ្រប់គ្រួសារ (ii) កែលម្អលទ្ធភាពប្រើប្រាស់ និងការគ្របដណ្តប់នៃអត្ថប្រយោជន៍ជំនួយសង្គម និង (iii) ពង្រឹងក្របខ័ណ្ឌស្ថាប័នសម្រាប់ការផ្តល់ជំនួយសង្គម។ កម្មវិធី នេះ ត្រូវ បាន គេ រំពឹង ទុក ថា នឹង ជួយ ដល់ កម្មវិធី ផ្សេង ប្រាក់ សម្រាប់ មាតា និង កុមារ នៅ ថ្នាក់ បឋមសិក្សា និង មធ្យមសិក្សា ទុក្ខភូមិ។ កញ្ចប់អត្ថប្រយោជន៍គ្រួសារថ្មីគឺជាកម្មវិធីបន្តបន្ទាប់នៃកម្មវិធីផ្ទេរសាច់ប្រាក់ដែលត្រូវបានបង្កើតឡើងដោយ រដ្ឋាភិបាលក្នុងអំឡុងពេល COVID-19 ហើយបានព្យាករណ៍ថានឹងមានប្រសិទ្ធភាពក្នុងឆ្នាំ 2023។

យដោយប្រើប្រាស់ការផ្តល់ហិរញ្ញប្បទានឥតសំណងដែលមានក្នុងគម្រោងនេះ។  
ក្រសួងមហាផ្ទៃនិងរដ្ឋបាលថ្នាក់ក្រោមជាតិពាក់ព័ន្ធ ជាអ្នកទទួលបានការកិច្ចការរៀបចំ  
និងអនុវត្តវិធានការគាំទ្រជីវភាពរស់នៅដល់កុមារទាំងនេះ ដូចខាងក្រោម៖

- អនុញ្ញាតឱ្យចូលទៅក្នុងទីលានទុកដាក់សំរាមថ្មីនៅក្នុងដូចជា  
កន្លែងព្រែក/ទាញយកធនធានពីសំរាម  
(ព្រែកសំរាមដើម្បីទាញយកសំរាមដែលអាចកែច្នៃឡើងវិញ) និងកន្លែងធ្វើដឹកជញ្ជូន  
ដែលត្រូវធ្វើការក្រោមលក្ខខណ្ឌត្រួតពិនិត្យ ដើម្បីធានាបាននូវលក្ខខណ្ឌការងារ សុខភាព  
និងសុវត្ថិភាពត្រឹមត្រូវសម្រាប់កុមារទាំងនេះ និងមិនប៉ះពាល់ដល់ការសិក្សារបស់ពួកគេ។  
ក្រុមហ៊ុនគ្រប់គ្រងទីលានទុកដាក់សំរាមដែលពាក់ព័ន្ធត្រូវធ្វើការចុះឈ្មោះ  
និងផ្ទៀងផ្ទាត់ឈ្មោះ ដោយអនុញ្ញាតឱ្យកែកុមារដែលមានឈ្មោះ  
ចុះបញ្ជីត្រឹមត្រូវប៉ុណ្ណោះអាចចូលនិងរើសសំរាមបាននៅក្នុងទីកន្លែងព្រែក/ទាញយកធនធាន។  
វិធានការគ្រួសារ ឬមិត្តភក្តិរបស់អ្នកដែលបានចុះបញ្ជី នឹងមិនត្រូវបានអនុញ្ញាតឱ្យចូលឡើយ  
ប្រសិនបើពួកគេមិនមានឈ្មោះក្នុងបញ្ជីចុះឈ្មោះនោះ។
- សម្រាប់កុមារដែលមកពីគ្រួសារពឹងផ្អែកទាំងស្រុងលើចំណូលពីការរើសសំរាមក្នុងទ្រទ្រង់ជីវភាព  
រស់នៅ ហើយដែលមិនទាន់មានប័ណ្ណសមធម៌  
គម្រោងនឹងជួយសម្របសម្រួលឱ្យទទួលបានប័ណ្ណសមធម៌តាមយន្តការ នៃការស្នើសុំ (One-  
Demand IDpoor)  
នៅពេលដែលពួកគាត់មានលក្ខណសម្បត្តិគ្រប់គ្រាន់តាមលក្ខខណ្ឌតម្រូវរបស់ប័ណ្ណសមធម៌។
- ធ្វើការវាយតម្លៃលើតម្រូវការសង្គមដោយផ្អែកលើជំរឿន និងការស្ទង់មតិសេដ្ឋកិច្ចសង្គម  
នៅពេលដែលទីតាំងគម្រោងត្រូវបានជ្រើសរើស  
និងផ្តល់នូវការគាំទ្រចាំបាច់ជួយដល់កុមារដើម្បីឱ្យបន្តការសិក្សានៅសាលារៀន<sup>3</sup>  
ព្រមទាំងជួយឱ្យពួកគេទទួលបានការគាំទ្រពីកម្មវិធីជំនួយសង្គមផ្សេងៗ  
ផ្តល់ដោយរដ្ឋាភិបាល ឬអង្គការមិនមែនរដ្ឋាភិបាលដែលមានស្រាប់។
- រៀបចំ និងដំណើរការមជ្ឈមណ្ឌលសិក្សាសហគមន៍  
(អាចនឹងត្រូវធ្វើឡើងក្នុងបរិវេណសាលាបឋមសិក្សានៅក្បែរទីលានទុកដាក់សំរាម)  
ដើម្បីឱ្យកុមារទទួលបានការសិក្សាពីបំណិនជីវិត សិល្បៈ កីឡា ភាសាអង់គ្លេស  
ឬថ្នាក់បឋមបន្ថែមលើមុខវិជ្ជាផ្សេងៗក្រៅម៉ោងសិក្សានៅសាលារដ្ឋ។ រដ្ឋបាលស្រុក  
ឬរដ្ឋបាលឃុំជាអ្នកគ្រប់គ្រងមជ្ឈមណ្ឌលនេះតាមរយៈវិធីសាស្ត្រគ្រប់គ្រងសាលាមត្តេយ្យសហគមន៍  
និងការណែនាំបន្ថែមពីគម្រោង។ ការរៀបចំ  
និងដំណើរការមជ្ឈមណ្ឌលសិក្សាសហគមន៍នេះនឹងត្រូវប្រើប្រាស់កញ្ចប់វិភាជន៍នួយឥតសំណ  
ងដែលមាននៅក្នុងគម្រោង។
- ផ្តល់ការគាំទ្រក្នុងការចុះឈ្មោះចូលរៀនកម្មវិធីវគ្គបណ្តុះបណ្តាលជំនាញ  
ដែលផ្តល់ដោយរដ្ឋាភិបាល  
និងអង្គការមិនមែនរដ្ឋាភិបាលនៅក្នុងខេត្តគោលដៅនីមួយៗ។

**វិធានការគាំទ្រសម្រាប់កុមារអាយុក្រោម១៤ឆ្នាំ**

ដើម្បីបញ្ឈប់ពួកគេកុំឱ្យចូលទៅកាន់ទីលានទុកដាក់សំរាមថ្មី ឬឈប់រើសសំរាមបន្តទៅទៀតនោះ  
គម្រោងស្នើឱ្យមានវិធានការគាំទ្រដូចខាងក្រោម៖

- ធ្វើការវាយតម្លៃឱ្យបានជាក់លាក់ជាមួយគ្រួសារ  
ដែលមានកុមារទៅជាមួយអាណាព្យាបាលនៅទីលានចាក់សំរាម  
ឬធ្វើការងាររើសសំរាមនៅទីលានចាក់សំរាមបច្ចុប្បន្ន ដើម្បីកំណត់អំពីតម្រូវការសង្គម  
និងស្ថានភាពរស់នៅប្រចាំថ្ងៃរបស់ពួកគេ។
- ធ្វើការត្រួតពិនិត្យជាទៀងទាត់  
និងល្អិតល្អន់ជាមួយគ្រួសារកុមារដែលពឹងផ្អែកទាំងស្រុងលើប្រាក់ចំណូលដែលបានមកពីការ  
រើសសំរាម និងជួយសម្របសម្រួលឱ្យពួកគេទទួលបានប័ណ្ណសមធម៌ (ID-poor Household)  
នៅពេលដែលពួកគេមានលក្ខណៈសម្បត្តិគ្រប់គ្រាន់តាមលក្ខខណ្ឌរបស់ប័ណ្ណសមធម៌។

<sup>3</sup> ការឧបត្ថម្ភផ្តល់សាលានឹងមិនត្រូវការទេ ព្រោះយោងតាមមាត្រា ៦៨ នៃរដ្ឋធម្មនុញ្ញកម្ពុជា  
ប្រជាពលរដ្ឋខ្មែរទាំងអស់មានសិទ្ធិទទួលបានការអប់រំដោយឥតគិតថ្លៃចាប់ពីបឋមសិក្សាដល់រដ្ឋសិក្សា

កិច្ចការនេះនឹងត្រូវបានអនុវត្តដោយគណៈកម្មការកំណត់អត្តសញ្ញាណកម្មគ្រួសារក្រីក្រនៅថ្នាក់ឃុំដោយមានការគាំទ្រពីក្រុមការងារគម្រោងថ្នាក់ខេត្ត។

- ផ្អែកលើការវាយតម្លៃអំពីតម្រូវការជាក់ស្តែង គម្រោងនឹងជួយសម្របសម្រួលឱ្យកុមារទាំងនោះទទួលបានការគាំទ្រពីកម្មវិធីជំនួយសង្គម នានាដែលមានស្រាប់ និងកំពុងអនុវត្តដោយរាជរដ្ឋាភិបាល ឬដោយអង្គការមិនមែនរដ្ឋាភិបាលនៅក្នុងខេត្តគោលដៅនីមួយៗ ដូចជាការផ្តល់សម្ភារសិក្សា កម្មវិធីអាហារូបករណ៍ កម្មវិធីផ្តល់អាហារនៅតាមសាលារៀន (អនុវត្តដោយកម្មវិធីស្បៀងអាហារពិភពលោក និងក្រសួងអប់រំ យុវជន និងកីឡាក្នុងខេត្តសៀមរាប)ជាដើម។
- គម្រោងអាចនឹងប្រើប្រាស់ផ្នែកណាមួយ នៃទីលានចាក់សំរាមចាស់ដែលត្រូវគ្របបិទ និងស្តារឡើងវិញ (ក្នុងករណីដែលអាចប្រើប្រាស់បាន) ឬដីទំនេរនៅក្នុងសាលាបឋមសិក្សានៅក្បែរទីលានចាក់សំរាម ដើម្បីរៀបចំជាសួនកុមារ និងទីលានលេងកីឡាសម្រាប់ក្មេងៗ ព្រមទាំងជម្រុញឱ្យពួកគេចូលរួមសកម្មភាពអប់រំផ្សេងៗទៀត។
- ធ្វើការលើកទឹកចិត្តដល់កុមារឱ្យចូលរួមក្នុងសកម្មភាពអប់រំនានាក្នុងមជ្ឈមណ្ឌលសិក្សាសហគមន៍ ដូចជា បំណិនជីវិត ភាសាអង់គ្លេស ឬថ្នាក់រៀនបំប៉នបន្ថែមក្រៅម៉ោងសិក្សារបស់រដ្ឋ។

វិធានការជៀសវាងការរំខានដល់ការចិញ្ចឹមជីវិតដែលពឹងផ្អែកទាំងស្រុងលើការរើសសំរាមតាមរយៈការបន្ត ចូលទៅរើសសំរាម ព្រមទាំងវិធានការគាំទ្របន្ថែមនឹងត្រូវបានត្រួតពិនិត្យពីខាងក្រៅ។

ការវាយតម្លៃផ្នែកបរិស្ថាន និងសង្គម នៃទីតាំងជាក់លាក់ នឹងត្រូវបានអនុវត្តបន្ទាប់ពីទីលានត្រូវបានជ្រើសរើសរួមទាំងលក្ខណៈវិនិច្ឆ័យជ្រើសរើសនៃផ្នែកបរិស្ថាន និងសង្គមផងដែរ ហើយព័ត៌មានលម្អិតជាក់លាក់ និងការរចនាវិស័យកម្មលម្អិតត្រូវបានកំណត់។ ការកំណត់នេះ នឹងរួមបញ្ចូលទាំងការយកចិត្តទុកដាក់ជាពិសេសទៅលើការរចនាលម្អិត និងការវាយតម្លៃផ្នែកសង្គមបរិស្ថាន នៃទីតាំងជាក់លាក់ សម្រាប់កន្លែងទាញយកធនធានប្រើប្រាស់ឡើងវិញ និងការកំណត់ នៃប្រភេទការងារដែលមិនមានគ្រោះថ្នាក់ ជាពិសេស (១)គោលបំណង នៃកន្លែងទាញយកធនធានប្រើប្រាស់ឡើងវិញ និងកន្លែងធ្វើជីកំប៉ុស មិនមែនជាការងារទូទៅ ឬជាអាជីពក្រែងដែលមានស្តង់ដារនោះទេ ប៉ុន្តែវាជាកន្លែងសហគមន៍ដើម្បីជួយគាំទ្រដល់ការបន្តចូលទៅរើសសំរាមអេកបាយបាន (២)ចំនួនគ្រឿងឃន និងគ្រឿងចក្រដែលជាផ្នែកមួយនៅកន្លែងទាំងនេះ និងត្រូវរៀបរាប់លម្អិតនៅក្នុងការរចនាលម្អិត និងការវាយតម្លៃផ្នែកសង្គមបរិស្ថាននៃទីតាំងជាក់លាក់ ដែលនឹងត្រូវបានជូនដំណឹង និងពិគ្រោះយោបល់ដោយកំណត់លើប្រភេទនៃឱកាស និងការវិភាគចំពោះកុមារដែលមានអាយុចន្លោះ ១៤ ទៅ ១៨ឆ្នាំ។ ប្រភេទនៃការងារដែលមិនមានគ្រោះថ្នាក់ អាចត្រូវបានគិតគូរ និងត្រូវបានកំណត់ជាផ្នែកមួយនៃការវាយតម្លៃផ្នែកសង្គមបរិស្ថាន នៃទីតាំងជាក់លាក់មានដូចជា៖ ការញែក និងការរេចខ្ចប់បន្ថែម ទៅតាមលំដាប់ទីមួយ នៃសំរាមដែលអាចកែច្នៃបាន ការបោសសម្អាតសំរាមដែលនៅសល់ និងការបោសសម្អាតកន្លែងដែលបានប្រើប្រាស់ ការងារដែលមិនប្រើប្រាស់គ្រឿងចក្រ ដូចជានៅកន្លែងធ្វើជីកំប៉ុសជាដើម។ ការប្តេជ្ញាចិត្ត និងលក្ខខណ្ឌសម្រាប់ការងារដែលមិនមានគ្រោះថ្នាក់សម្រាប់កុមារដែលមានអាយុចន្លោះ១៤ ទៅ១៨ឆ្នាំ នឹងគោរពតាមស្តង់ដាររបស់អង្គការ ILO និងការអនុវត្តខណ្ឌកម្មអន្តរជាតិបានល្អ ហើយក្រុមហ៊ុនគ្រប់គ្រងសំរាមសំណល់រឹង ទទួលបន្ទុកគ្រប់គ្រង និងប្រតិបត្តិការទីលានទុកដាក់សំរាម នឹងទទួលខុសត្រូវលើការផ្ទេរផ្ទះកំណែ និងការចូល និងត្រួតពិនិត្យ កន្លែងរើសសំរាមសហគមន៍ សម្រាប់លក្ខខណ្ឌ OHS សមស្របដែលការវាយតម្លៃហានិភ័យជាក់លាក់ OHS/គ្រោះថ្នាក់ នឹងត្រូវធ្វើឡើងជាផ្នែកនៃការវាយតម្លៃផ្នែកសង្គមបរិស្ថាននៃទីតាំងជាក់លាក់។ លើសពីនេះ ការរចនាកន្លែងនានា នឹងគិតគូរពីសុខសុវត្ថិភាព និងសុវត្ថិភាពស្រ្តី និងកុមារ (ដូចជា ត្រូវមានអំពូលភ្លើងបំភ្លឺត្រឹមត្រូវ គ្រឿងបរិក្ខារដែលបែងចែកដោយយេនឌ័រ) ហើយការបណ្តុះបណ្តាលនឹងរួមបញ្ចូលការលើកកម្ពស់ការយល់ដឹងអំពីការកែប្រែប្រព័ន្ធប្រភេទ និងការរំលោភបំពាន/ការបៀតបៀនផ្លូវភេទ ក៏ដូចជាព័ត៌មានស្តីពីការដាក់ពាក្យបណ្តឹង និងការទាក់ទងទៅអ្នកផ្តល់សេវា។

នេះនឹងត្រូវបានកំណត់ក្នុងអំឡុងពេលស្នាក់នៅដំបូងនៃការអនុវត្តគម្រោង។ ការវាយតម្លៃហានិភ័យបឋមក៏នឹងត្រូវបានពិចារណាឡើងវិញនៅដំណាក់កាលនោះផងដែរ។

សម្រាប់ខេត្តសៀមរាបESIAនិងESMPបឋម ត្រូវបានរៀបចំដើម្បីបញ្ចប់មុនការវាយតម្លៃដោយពិចារណាលើជម្រើសទីតាំងជំនួស កន្លែងចាក់សំរាមដែលមានស្រាប់ទិដ្ឋភាពបរិស្ថាននិងសង្គមនៃការទុកដាក់សំណល់រឹង ហេដ្ឋារចនាសម្ព័ន្ធសម្រាប់សំណល់រឹងនិងរួមទាំងការវាយតម្លៃសង្គម និងសេដ្ឋកិច្ចសម្រាប់សហគមន៍ដែលរងហេតុប៉ះពាល់ដោយគម្រោងនៅទីលានចាក់សំរាមបច្ចុប្បន្ននិង នៅទីតាំងជម្រើស។ ESIAលម្អិតនឹងត្រូវបានអនុវត្តបន្ទាប់ពីការជ្រើសរើសទីតាំង និងការរចនាសម្ព័ន្ធត្រូវបានកំណត់ក្នុងអំឡុងពេលឆ្នាំដំបូងនៃការអនុវត្តគម្រោង។

**សកម្មភាពជំនួយបច្ចេកទេស**

សកម្មភាពជំនួយបច្ចេកទេសនៃគម្រោងនេះរួមមានសមាសភាគទី១ និងសមាសភាគទី២។ នៅក្រោមសមាសភាគទី១ ជំនួយគាំទ្រនឹងត្រូវបានផ្តល់ជូនសម្រាប់ការអភិវឌ្ឍន៍ និងការពង្រឹងច្បាប់ បទប្បញ្ញត្តិ គោលនយោបាយ និងក្របខ័ណ្ឌស្ថាប័នដែលពាក់ព័ន្ធនឹងការគ្រប់គ្រងសំរាមសំណល់រឹង និងប្រព័ន្ធស្នាក់ និងសម្រាប់ ការកសាងសមត្ថភាពស្ថាប័នជាតិដែលពាក់ព័ន្ធនឹងការគ្រប់គ្រងសំរាមសំណល់រឹង។ សមាសភាគទី ២ នឹងផ្តល់ជំនួយដល់ការកសាងសមត្ថភាពរបស់ក្រុង និងស្រុកដែលចូលរួមនៅក្នុងការគ្រប់គ្រងសំរាមសំណល់រឹង ការធ្វើផែនការ និងក្នុងការអភិវឌ្ឍន៍ព័ត៌មានសំរាមសំណល់រឹង ប្រព័ន្ធហិរញ្ញវត្ថុ និងភូមិសាស្ត្រ។ កម្មវិធីពង្រឹងសមត្ថភាពក៏នឹងរួមបញ្ចូលផងដែរនូវការពង្រឹងការផ្សព្វផ្សាយជាសាធារណៈ ការលើកកម្ពស់ការយល់ដឹង និងការចូលរួមរបស់ប្រជាពលរដ្ឋ។ គ្មានជំនួយបច្ចេកទេសណាមួយត្រូវបានព្យាករណ៍ថាអាចជួយក្នុងការរៀបចំការវិនិយោគហេដ្ឋារចនា សម្ព័ន្ធនាពេលអនាគតក្រៅពីការវិនិយោគហេដ្ឋារចនាសម្ព័ន្ធដែលផ្តល់ហិរញ្ញប្បទានក្រោមសមាសភា គទី៣ នៃគម្រោងនោះទេ។ សកម្មភាពជំនួយបច្ចេកទេស (TA) នៅក្រោមសមាសភាគទី២ ដោយផ្តោតលើសកម្មភាពកសាងសមត្ថភាពប្រព័ន្ធព័ត៌មាន និងការទំនាក់ទំនង និងការផ្សព្វផ្សាយត្រូវបានគេរំពឹងថានឹងបង្កឱ្យមានចំពោះហានិភ័យ និងហេតុប៉ះពាល់សង្គម ឬបរិស្ថានមានកំរិតទាប។ ប្រភេទនៃជំនួយបច្ចេកទេស (TA) នៅក្រោមសមាសភាគទី១ ដោយផ្តោតលើគោលនយោបាយ និងបទប្បញ្ញត្តិ នៃសំរាមសំណល់រឹង និងប្រព័ន្ធស្នាក់ដែលស្ថិតនៅក្រោមសមាសភាគទី១ និងសមាសភាគទី២ អាចនាំឱ្យមានសកម្មភាពខាងក្រោម ដូចជា ការលើកកម្ពស់ការកែច្នៃសំណល់ប្រាស្រ្តិក ដឹកបំបុស ការកាត់បន្ថយការវេចខ្ចប់ដោយប្រើប្រាស់ថង់ប្រាស្រ្តិក ការជំរុញលើកទឹកចិត្តឱ្យប្រើប្រាស់ផលិតផលជំនួស ឬផ្សេងទៀត។ ហានិភ័យ និងផលប៉ះពាល់ នៃប្រភេទសកម្មភាព ជំនួយបច្ចេកទេស (TA) ទាំងនេះត្រូវបានចាត់ទុកជាបឋមថាមានកំរិតទាបនៅឡើយ (សម្រាប់ការកសាងសមត្ថភាព TA) ដល់កម្រិតមធ្យមបឋម (សម្រាប់គោលនយោបាយ និងបទប្បញ្ញត្តិ) ដោយផ្អែកលើចំណាត់ថ្នាក់ហានិភ័យ ក្របខ័ណ្ឌបរិស្ថានសង្គម (ESF)។ TA ដែលត្រូវបានស្នើឡើងក្រោមសមាសភាគទី១ និងសមាសភាគទី២ មិនរាប់បញ្ចូលការរៀបចំនៃការវិនិយោគហេដ្ឋារចនាសម្ព័ន្ធនាពេលអនាគត (ក្រៅពីការវិនិយោគហេដ្ឋារចនាសម្ព័ន្ធដែលបានផ្តល់ហិរញ្ញប្បទានក្រោមសមាសភាគទី៣នៃគម្រោង និងជាកម្មវត្ថុក្នុងការទទួលខុសត្រូវនៃបរិស្ថានសង្គមយ៉ាងទូលំទូលាយរបស់ពួកគេផ្ទាល់ខ្លួន)។ វាផ្តោតលើជំនួយគាំទ្រ TA ចំពោះសកម្មភាពកសាងសមត្ថភាព ការគាំទ្រគោលនយោបាយ និងបទប្បញ្ញត្តិ ប្រព័ន្ធព័ត៌មាន និងការទំនាក់ទំនង និងការផ្សព្វផ្សាយជាមួយនិងហានិភ័យ និងផលប៉ះពាល់សង្គម ឬបរិស្ថានអប្បបរមា ឬទាប។

TA ដែលស្ថិតនៅក្រោមសមាសភាគទី១ និងសមាសភាគទី២ ជួយគាំទ្រគោលនយោបាយ និងបទប្បញ្ញត្តិអំពីសំរាមសំណល់រឹង និងប្រព័ន្ធស្នាក់ដែលអាចនាំទៅដល់សកម្មភាពបន្តបន្ទាប់ ដូចជាការលើកកម្ពស់ការកែច្នៃសំណល់ប្រាស្រ្តិក ការធ្វើដឹកបំបុស ការកាត់បន្ថយការវេចខ្ចប់ដោយប្រើប្រាស់ថង់ប្រាស្រ្តិក ការជំរុញលើកទឹកចិត្តឱ្យប្រើប្រាស់ផលិតផលជំនួសផលប៉ះពាល់នៃសកម្មភាពបែបនេះជាទូទៅមាន នភាពវិជ្ជមាន ហើយហានិភ័យបរិស្ថាន និងសង្គម ដែលត្រូវបានផ្សារភ្ជាប់ជាមួយនិងពួកវាជាបឋមបានចង្អុលបង្ហាញពីកម្រិតទាបទៅមធ្យមដោយផ្អែ កលើចំណាត់ថ្នាក់ ហានិភ័យក្របខ័ណ្ឌបរិស្ថានសង្គម។ សេចក្តីយោង (TORs) សម្រាប់សកម្មភាពជំនួយបច្ចេកទេស(TA) នឹងត្រូវបានបង្កើតឡើងដោយម្ចាស់គម្រោងនៅក្នុងឆ្នាំដំបូង និងឆ្នាំទី២នៃការអនុវត្តគម្រោងកំប៉ុន្តែការត្រួតពិនិត្យហានិភ័យបរិស្ថាន និងសង្គម ត្រូវបានធ្វើឡើង និងសង្ខេបនៅក្នុង "តារាងហានិភ័យ និងហេតុប៉ះពាល់" ដែលយោងដូចខាងក្រោម៖

សមាសភាគទី១	គំរិតនៃហានិភ័យ	ផលប៉ះពាល់ដែលអាចកើតមានទាក់ទងនឹង ESSS ផ្សេងៗ	វិធានការ បន្ថយ បន្ថយ
សកម្មភាពទាក់ទងនឹងការពង្រឹងបទប្បញ្ញត្តិ និងការអនុវត្តសកម្មភាពរបស់ទីភ្នាក់ងារសម្រាប់ការធ្វើផែនការ ការគ្រប់គ្រង និងការត្រួតពិនិត្យក្រុមហ៊ុនប្រមូលសំណល់រឹងវិស័យឯកជន ព្រមទាំងការអភិវឌ្ឍន៍គោលការណ៍ណែនាំនៃការរចនា (ប្រភេទ ៣)	ទាប	ហេតុប៉ះពាល់បរិស្ថានជាវិជ្ជមានសម្រាប់ប្រសិទ្ធភាពធនធាន (ESS3) និងសុខភាព និងសុវត្ថិភាពសហគមន៍ (ESS4) និងផលប៉ះពាល់បរិស្ថាន (ESS1)	ហានិភ័យខាងបរិស្ថាន និងសង្គមដែលអាចកើតមានប្រសិនបើមាន និងត្រូវបានចាត់ទុកថាជាផ្នែកមួយនៃការរៀបចំរបស់ពួកគេ
ការអភិវឌ្ឍន៍ និងការអនុវត្តគោលនយោបាយទាក់ទងនឹងការយល់ដឹងសាធារណៈ ការអប់រំ ការផ្សព្វផ្សាយ ការចូលរួមរបស់ប្រជាពលរដ្ឋ និងការសម្អាត (ប្រភេទ ៣)	ទាប	ហេតុប៉ះពាល់បរិស្ថានជាវិជ្ជមានសម្រាប់ប្រសិទ្ធភាពធនធាន (ESS3) សុខភាព និងសុវត្ថិភាពសហគមន៍ (ESS) និងផលប៉ះពាល់បរិស្ថាន (ESS1)	ហេតុប៉ះពាល់ជាអវិជ្ជមានដល់បរិស្ថាន និងសង្គម និងហានិភ័យប្រសិនបើមាន និងត្រូវបានចាត់ទុកថាជាផ្នែកនៃការរៀបចំរបស់ពួកគេ។
ការអភិវឌ្ឍន៍គោលនយោបាយ ស្តង់ដារ ឬគោលការណ៍ណែនាំទាក់ទងនឹងប្លាស្ទិក រួមទាំងការកែច្នៃឡើងវិញ និងការទទួលខុសត្រូវរបស់អ្នកផលិតបន្លែម (EPR) និងប្រព័ន្ធប្រាក់បញ្ជី និងសងប្រាក់ (ប្រភេទ ២)	មធ្យម	ហេតុប៉ះពាល់បរិស្ថានជាវិជ្ជមានសម្រាប់ប្រសិទ្ធភាពធនធាន (ESS3) សុខភាព និងសុវត្ថិភាពសហគមន៍ (ESS4) និងហេតុប៉ះពាល់បរិស្ថាន (ESS1)។ ការវាយតម្លៃកំរិតនៃហេតុប៉ះពាល់ដែលអាចកើតមានសម្រាប់អ្នកវិស័យសំរាម (ESS1)	ការវិភាគនៃការរួមបញ្ចូលអ្នកប្រមូលសំរាមក្រៅផ្លូវការនៅក្នុងគម្រោងការកែច្នៃឡើងវិញជាផ្លូវការ / ការទទួលខុសត្រូវរបស់អ្នកផលិតបន្លែម / ការបញ្ជាក់ប្រាក់បញ្ញើដោយមានវិធានការការងារ សុខភាព និងសុវត្ថិភាពត្រឹមត្រូវ និងឱកាសសម្រាប់ក្រុមដែលងាយរងគ្រោះ និងអ្នកដែលបាត់បង់ដងប្រយោជន៍ដែលជាផ្នែកមួយ នៃជំនួយបច្ចេកទេស និងការពិគ្រោះយោបល់ និងការចូលរួមរបស់អ្នកពាក់ព័ន្ធ។
ការបង្កើតគោលនយោបាយ និងការបង្កើតមូលដ្ឋានទិន្នន័យសម្រាប់ប្រព័ន្ធព័ត៌មានអំពីសំរាមសំណល់រឹងថ្នាក់ជាតិ សម្រាប់ការធ្វើផែនការ និងការគ្រប់គ្រងសំរាមសំណល់រឹង (ប្រភេទទី ៣)	ទាប	ហេតុប៉ះពាល់បរិស្ថានជាវិជ្ជមានសម្រាប់ប្រសិទ្ធភាពធនធាន (ESS3) និងសុខភាព និងសុវត្ថិភាពសហគមន៍ (ESS4)	មិនកម្រើតមានវិធានការបន្ថយបន្ថយជាក់លាក់ណាមួយនោះទេ។
ការអភិវឌ្ឍន៍គោលនយោបាយ និងគោលការណ៍ណែនាំទាក់ទងនឹងការគណនាថ្លៃដើមនៃការប្រមូលសំរាមសំណល់រឹង ថ្លៃប្រមូលសំរាមសំណល់រឹង (តាមគេហទំព័រ) និងថ្លៃប្រាក់សំរាមទិលានទុកដាក់សំរាម និងការរាយការណ៍ (ប្រភេទ ២)។	មធ្យម	ហេតុប៉ះពាល់អវិជ្ជមានដែលអាចកើតមានលើគ្រួសារតាមខ្នងផ្ទះក្នុងករណីមានការតម្កើងថ្លៃសេវា។ ហេតុប៉ះពាល់សង្គម (ESS1) ហេតុប៉ះពាល់បរិស្ថានជាវិជ្ជមាន (ESS1)	ការវិភាគលទ្ធភាពទទួលយកបាននឹងត្រូវបានអនុវត្តជាផ្នែកនៃការវិភាគគោលនយោបាយ និងការអភិវឌ្ឍន៍គោលការណ៍ណែនាំ រួមទាំងការពិគ្រោះយោបល់ និងការចូលរួមពីភាគីពាក់ព័ន្ធ។
<b>សមាសភាគទី ២</b>			
ប្រតិបត្តិការជំនួយការទ្រទ្រង់គ្រប់គ្រងសំរាមសំណល់រឹងក្រុង និងការពង្រឹងសមត្ថភាពថ្នាក់ក្រុង (ប្រភេទ ៣)	ទាប	ហេតុប៉ះពាល់បរិស្ថានជាវិជ្ជមានសម្រាប់ប្រសិទ្ធភាពធនធាន (ESS3) និងហេតុប៉ះពាល់បរិស្ថាន (ESS1) និងសុខភាព និងសុវត្ថិភាពសហគមន៍ (ESS4)	មិនកម្រើតមានវិធានការបន្ថយបន្ថយជាក់លាក់ណាមួយនោះទេ។
បង្កើនឱកាសសេដ្ឋកិច្ច និងជំនួយការទ្រទ្រង់គ្រប់គ្រង និងងាយរងគ្រោះ ជាពិសេសអ្នកវិស័យសំរាមជាតិ (ប្រភេទ ៣)	ទាប	ហេតុប៉ះពាល់បរិស្ថានសម្រាប់សុខភាព និងសុវត្ថិភាពសហគមន៍ (ESS4) ប្រសិទ្ធភាពធនធាន (ESS3) និងហេតុប៉ះពាល់សង្គម (ESS1)។	សកម្មភាពទាំងនេះ គឺជាវិធានការបន្ថយបន្ថយដើម្បីបង្កើនឱកាសសេដ្ឋកិច្ច និងជំនួយការទ្រទ្រង់គ្រប់គ្រងងាយរងគ្រោះសម្រាប់ការវិនិយោគលើទិលានទុកដាក់សំរាម និងកន្លែងទាញយកសំរាមដែលអាចប្រើប្រាស់ឡើងវិញជាសហគមន៍ ក្រោមសមាសភាគទី ៣
ការផ្តល់ប្រឹក្សាប្រតិបត្តិការ ការទ្រទ្រង់គ្រប់គ្រងដែលចូលរួម ក្នុងការត្រួតពិនិត្យតាមដាន ក្រុមហ៊ុនសំរាម និងក្រុមថ្លៃសេវា (ប្រភេទ ២ និង ៣)	មធ្យម	ហេតុប៉ះពាល់បរិស្ថានសម្រាប់សុខភាព និងសុវត្ថិភាពសហគមន៍ (ESS4) ប្រសិទ្ធភាពធនធាន (ESS3) និងហេតុប៉ះពាល់បរិស្ថាន (ESS1) ហេតុប៉ះពាល់អវិជ្ជមានដែលអាចកើតមានលើគ្រួសារតាមខ្នងផ្ទះក្នុងករណីមានការតម្កើងថ្លៃសេវា។ ហេតុប៉ះពាល់សង្គម (ESS1) ហេតុប៉ះពាល់បរិស្ថានសម្រាប់សុខភាព និងសុវត្ថិភាពសហគមន៍ (ESS2)។	ហេតុប៉ះពាល់ និងហានិភ័យនៃបរិស្ថាន និងសង្គមដែលអាចកើតមាន និងត្រូវបានចាត់ទុកថាជាផ្នែកនៃការរៀបចំរបស់ពួកគេ ជាពិសេសការវិភាគលទ្ធភាពដែលអាចទទួលយកបាន និងអមជាមួយការពិគ្រោះ និងការចូលរួមរបស់ភាគីពាក់ព័ន្ធ។

សម្រាប់ហានិភ័យកម្រិតមធ្យមដែលត្រូវបានចាត់ទុកបឋម

ទាំងនេះនឹងត្រូវបានវាយតម្លៃបន្ថែមក្នុងអំឡុងពេលអនុវត្តគម្រោងជាពិសេសសម្រាប់សកម្មភាពជំនួយបច្ចេកទេស (TA) ដែលផ្តោតលើគោលនយោបាយ និងបទប្បញ្ញត្តិ។ នេះរួមបញ្ចូលទាំងសេចក្តីយោង/វិសាលភាពដោយមានការធានាសម្រាប់ការគាំទ្រជំនួយបច្ចេកទេស TA និងរួមបញ្ចូលការវាយតម្លៃគ្រប់គ្រាន់នៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គមក្នុងកិច្ចការដែលស្របជាមួយនឹង ESSs ហើយនឹងត្រូវត្រួតពិនិត្យដោយធានាការពិភពលោក ដើម្បីធានាថា ESSs ដែលពាក់ព័ន្ធត្រូវបានបញ្ចូលទៅក្នុងសកម្មភាពគម្រោង។ នេះពង្រីកដល់ទិដ្ឋភាពនៃ ESS1 សម្រាប់ការដាក់បញ្ចូលក្រុមដែលងាយរងគ្រោះ និងទិដ្ឋភាពនៃ ESS10 សម្រាប់ការចូលរួមពីភាគីពាក់ព័ន្ធប្រកបដោយប្រសិទ្ធភាព និងរួមបញ្ចូលដែលសមស្របនិងពាក់ព័ន្ធ។

**ការវិនិយោគហេដ្ឋារចនាសម្ព័ន្ធ**

ការវិនិយោគការគ្រប់គ្រងសំណល់រឹងជាអាទិភាព ដែលមានគោលដៅសម្រាប់ថ្នាក់ក្រុង ដែលចូលរួមនឹងត្រូវបានផ្តល់ជូនក្រោមសមាសភាគទី៣។ នេះរួមមានការសាងសង់ហេដ្ឋារចនាសម្ព័ន្ធគ្រប់គ្រងសំណល់រឹង និងប្តូរស្លឹកសម្រាប់ការប្រមូលការផ្ទេរការប្រព្រឹត្តិកម្ម ការកែច្នៃឡើងវិញនិងការចោលសំណល់រឹង/ និងប្តូរស្លឹកចរមានទីលាន ស្ថានីយ៍ផ្ទេរ និងទីតាំងប្រព្រឹត្តិកម្មសំណល់ដូចជាទីតាំងព្រែក និងទីតាំងកែច្នៃរួមមាន នដ្ឋវច្ឆលដែលមានសក្តានុពលក៏ដូចជាការស្តារឡើងវិញនូវការបំពុលនៅទីលានចាក់សំណល់ដែលមានស្រាប់។ ហានិភ័យ នឹងហេតុប៉ះពាល់ត្រូវបានវាយតម្លៃ សម្រាប់សកម្មភាពក្នុងអំឡុងពេលសាងសង់ និងក្នុងដំណាក់កាលប្រតិបត្តិការ។

**ហានិភ័យបរិស្ថាន-ដំណាក់កាលសាងសង់**

ហេតុប៉ះពាល់	ពិពណ៌នា	វិធានការដំណោះស្រាយបឋម
គុណភាពខ្យល់	ការងារស៊ីវិលនឹងត្រូវការក្នុងករណីបិទ/ការស្តារ/ការពង្រីកទីលានបច្ចុប្បន្ន អភិវឌ្ឍន៍លានថ្មី MRF ជីកំប៉ុស ផ្លូវចូល និងកន្លែងផ្សេងទៀត។ សកម្មភាពសាងសង់អាចបណ្តាលឱ្យមានការបំពុលខ្យល់ជាបណ្តោះមួយរយៈពេល ។	<ul style="list-style-type: none"> <li>• ការត្រួតពិនិត្យគុណភាពខ្យល់នៅតំបន់លំនៅដ្ឋានក្នុងអំឡុងពេលសាងសង់ត្រូវធ្វើនៅនឹងកន្លែង</li> <li>• កំណត់ម៉ោងសាងសង់(ម៉ោងថ្ងៃ)</li> <li>• ធ្វើឱ្យផ្ទៃដែលប៉ះពាល់មានស្ថេរភាព</li> <li>• កាត់បន្ថយសកម្មភាពដែលនាំឱ្យមានភាគល្អិតជាអភិប្បបរមា</li> <li>• បាញ់ទឹកទៅតំបន់ដែលត្រូវជីកដីចេញចូល និងផ្លូវដី</li> <li>• អភិវឌ្ឍកន្លែងលាងសម្អាតកងឡាននៅច្រកចូលការដ្ឋាន និងផ្លូវសាធារណៈ ឬផ្លូវចេញពីការដ្ឋានសាងសង់ទីលានចាក់សំណល់</li> <li>• អនុវត្តការត្រួតពិនិត្យល្បឿននៅការដ្ឋាន</li> <li>• រក្សាសមត្ថភាពផ្ទុកគ្រប់គ្រាន់របស់ឡានដឹកទំនិញ និងរបងដើម្បីចៀសវាងការកំពប់</li> <li>• គ្របដីដែលស្តុកទុកដោយប្រដាប់គ្របគ្រប់គ្រងសំណឹក</li> <li>• ទុកដាក់ឱ្យត្រឹមត្រូវដើម្បីចៀសវាងចូលខ្យល់</li> <li>• អនុវត្តការអនុវត្តការសាងសង់ដ៏ប្រសើរ</li> </ul>
សំឡេងរំខាន	ការងារស៊ីវិលនឹងត្រូវការក្នុងករណីបិទ/ការស្តារ/ការពង្រីកទីលានបច្ចុប្បន្ន អភិវឌ្ឍន៍លានថ្មី MRF ជីកំប៉ុស ផ្លូវចូល និងកន្លែងផ្សេងទៀត។ សកម្មភាពសាងសង់អាចបណ្តាលឱ្យមានការបំពុលសម្លេងបណ្តោះមួយរយៈពេល។	<ul style="list-style-type: none"> <li>• ជាទូទៅ គេរំពឹងថាសំឡេងរំខាននឹងមិនខ្ពស់គ្រប់គ្រាន់ដែលរំខានដល់ដំណាក់កាលដំបូងសកម្មភាពធម្មតានោះទេ។</li> <li>• គេរំពឹងថាសកម្មភាពសំណង់នឹងមិនដំណើរការក្នុងកំឡុងពេលយប់ជ្រៅឡើយ។ ដូច្នេះ ផលប៉ះពាល់នៅពេលល្ងាចជាមធ្យមនៃសំឡេងរំខានជុំវិញនឹងមានកិច្ចកម្រិត។</li> </ul>

ហេតុប៉ះពាល់	ពិពណ៌នា	វិធានការដំណោះស្រាយបឋម
		<ul style="list-style-type: none"> <li>• បង្កើនប្រសិទ្ធភាពការប្រើប្រាស់ម៉ាស៊ីន និងឧបករណ៍ដែលមានសំលេងខ្លាំងខាងលើ</li> <li>• ក្នុងករណីទទួលបានពាក្យបណ្តឹងពីតំបន់ជិតខាងទាក់ទងនឹងប្រតិបត្តិការដែលមានសំលេងខ្លាំងខាងលើនៃការងារអាចត្រូវបានដាក់</li> <li>• ការងារសាងសង់គួរតែត្រូវបានបញ្ឈប់នៅពេលយប់។</li> </ul>
ស្ទើរ	<p>ផលប៉ះពាល់ក្លិន នឹងកើតមានឡើង ដែលបង្កការព្រួយបារម្ភនិងជិតខាង ក្នុងអំឡុងពេលអនុវត្តការងារសាងសង់សម្រាប់ការស្តារឡើងវិញនូវទីតាំងដែលមានស្រាប់ ប៉ុន្តែវានឹងត្រូវកាត់បន្ថយយ៉ាងខ្លាំង បន្ទាប់ពីការងារត្រូវបានបញ្ចប់</p>	<ul style="list-style-type: none"> <li>• ការអនុវត្តកម្រិតសម្រាប់កាកសំណល់នៅកន្លែងចាក់សំរាមដែលមានស្រាប់សម្រាប់ជម្រើសទំរាំ</li> <li>• ការដំឡើងប្រព័ន្ធប្រព្រឹត្តិកម្មឧស្ម័ននៅកន្លែងចាក់សំរាម</li> <li>• ប្រព័ន្ធសម្អាតទឹកស្អុយ</li> <li>• ការប្រើប្រាស់ថ្នាំបំបាត់ក្លិន និង/ឬថ្នាំបាញ់រាតត្បាត ក្នុងករណីក្លិន គឺជាបញ្ហារ៉ាំរ៉ៃ</li> </ul>
សុវត្ថិភាពផ្លូវរថ	<p>ការងារសំណង់ស៊ីវិលនឹងត្រូវទាមទារឱ្យបិទ/ស្តារឡើងវិញ/ការពង្រីកការចាក់សំរាម ការបង្កើនចរាចរណ៍ជាបណ្តោះអាសន្ននៅការដ្ឋាន</p>	<ul style="list-style-type: none"> <li>• ការត្រួតពិនិត្យយ៉ាងជិតស្និទ្ធ និងការអនុវត្តបទប្បញ្ញត្តិផ្លូវរថ</li> <li>• ការបណ្តុះបណ្តាលសម្រាប់អ្នកបើកបរ</li> <li>• បទប្បញ្ញត្តិពេលពេលវេលាសម្រាប់សកម្មភាពផ្លូវរថ</li> <li>• ការប្រើប្រាស់ផ្លូវរថក្រៅតំបន់មានលំនៅដ្ឋាន</li> <li>• ប្រព័ន្ធរាយការណ៍សម្រាប់ប្រជាពលរដ្ឋ</li> </ul>
រចនាសម្ព័ន្ធនៃដី	<p>ដីនឹងត្រូវខូចខាតក្នុងអំឡុងពេលធ្វើការជីកកាយ ដើម្បីស្តារឡើងវិញនូវទីតាំងដែលមានស្រាប់ ប៉ុន្តែគុណភាពដីទាំងមូលនឹងប្រសើរឡើងវិញ បន្ទាប់ពីការងារត្រូវបាន បញ្ចប់។ ដីនឹងត្រូវជីកសម្រាប់ការអភិវឌ្ឍរណ្តៅថ្មី ឬទីលានចាក់សំរាម និងសម្រាប់គម្របរណ្តៅចាស់</p>	<ul style="list-style-type: none"> <li>• តំបន់ដែលត្រូវបានបម្រុងទុកសម្រាប់ការស្តុកដី គួរតែត្រូវបានជ្រើសរើសដើម្បីកុំឱ្យមានគម្របនៃការប្រមូលទឹកលើផ្ទៃដែលមិនអំណោយផលគួរតែត្រូវបានបង្កើតឡើង (ឧទាហរណ៍ ស្រះទឹកដែលនៅនឹងសម្រាប់រយៈពេលវែង)</li> <li>• ត្រូវប្រាកដថាកម្រិតសំរាមសំខ្លួន និងមិនបង្កឱ្យមានផលប៉ះពាល់ដែលមើលឃើញដែលមិនអាចទទួលបានទៅកាន់តំបន់ជាប់គ្នា</li> <li>• ប្រើប្រាស់ដីជីកក្នុងការអភិវឌ្ឍន៍កន្លែងចាក់សំរាម និងប្រតិបត្តិការប្រចាំថ្ងៃ ការប្រើប្រាស់ គម្របសំរាមប្រចាំថ្ងៃ ឬការប្រើប្រាស់ក្នុងការបង្កើតទំនប់ទឹកសម្រាប់ផ្ទុកកាកសំណល់។</li> <li>• ប្រើដីជីកហើយ សម្រាប់គ្របដណ្តប់លើការបិទរណ្តៅចាស់ៗ (ការដាំដុះឡើងវិញនូវស្រទាប់គម្របចុងក្រោយ)</li> <li>• ដីដែលបានជីកកាយនៅតំបន់ជុំវិញផ្ទាល់នៅកន្លែងចាក់សំរាមដែលមានស្រាប់ត្រូវតែយកគម្របមកដើម្បីវាយតម្លៃពីវិសាលភាពនៃការបំពុល។ ប្រសិនបើ រកឃើញមានមេរោគ វាត្រូវប្រើសម្រាប់តែប្រតិបត្តិការប្រចាំថ្ងៃប៉ុណ្ណោះ។</li> </ul>
សំណឹកដី និងហានិភ័យ ឬUXOs	<p>ការងារជីកកាយអាចបង្កឱ្យមានសំណឹកដី ទោះជាយ៉ាងណាក៏ដោយ នៅពេលដែល បញ្ចប់ការងារ ផលប៉ះពាល់ជារួមនឹងមានភាពវិជ្ជមាន ដោយសារវិធានការរក្សាលំនឹងដី</p>	<ul style="list-style-type: none"> <li>• ការដំឡើងគម្របសំណឹកដីលើកន្លែងស្តុកទុក ប្រសិនបើការបង្ក្រាមផ្ទៃបន្ថែម និង/ឬការបណ្តុះមិនជោគជ័យ</li> <li>• ការពារស្តុកពីការជន់លិច និងការហូរដោយដាក់ក្នុងធុង</li> </ul>

ហេតុប៉ះពាល់	ពិពណ៌នា	វិធានការដំណោះស្រាយបឋម
	នឹងត្រូវធ្វើឡើងក្នុងកំឡុងពេលស្តារឡើងវិញនូវទីតាំងដែលមានស្រាប់។ នេះជាហានិភ័យនៃ UXO មិនទាន់ផ្ទុះ ។	<p>បុសមមូលនៅជុំវិញខាងក្រៅកន្លែងចាំបាច់</p> <ul style="list-style-type: none"> <li>• ការការពារដីផ្នែកខាងលើដែលងាយរងគ្រោះបំផុត</li> <li>• ការការពារបណ្តាញលូ</li> <li>• ការស្ទាបស្ទង់ពី UXOs</li> </ul>
ការបាក់បង់ដីខាងលើ	ការបាក់បង់ដីខាងលើ អាចកើតឡើងក្នុងកំឡុងពេលការងារសាងសង់ដែលទាក់ទងនឹងការកំណត់ការដ្ឋានរោងចក្រសម្ភារៈ និងហេដ្ឋារចនាសម្ព័ន្ធដែលពាក់ព័ន្ធ	<ul style="list-style-type: none"> <li>• ការស្តុកដីខាងលើនៅកន្លែងស្តុកទុក</li> <li>• ទីតាំងស្តុកដីដែលរាវការស្តុកទុកត្រូវបានបង្កើតដោយចលនាយន្តប្រកួត</li> <li>• ការបំបែកចេញពីកន្លែងស្តុកដី</li> <li>• គ្មានកន្លែងស្តុកទុក ដែលមានសក្តានុពលសម្រាប់ទឹកជំនន់</li> <li>• គ្មានកន្លែងផ្ទុកនៅជិតដងស្ទឹង ហើយអាស្រ័យលើសណ្តានដីក្នុង</li> </ul>
គុណភាពទឹក	ការងារសាងសង់អាចបណ្តោយឱ្យមានការចម្លងរោគដល់ទឹកលើដី និងក្រោមដី។ ទោះជាយ៉ាងណាក៏ដោយ ផលប៉ះពាល់ជារួមនឹងមានភាពវិជ្ជមានដោយសារការស្តារឡើងវិញនូវទីតាំងដែលមានស្រាប់នឹងបញ្ឈប់ការលេចទឹកស្អុយដែលមិនបាន សម្អាត និងកាកសំណល់ទឹក	<ul style="list-style-type: none"> <li>• កាត់បន្ថយការរំខាននៃដី</li> <li>• គ្រប់គ្រងការហូរចេញ និងដីល្បាប់ចេញទៅតំបន់ដែលមានការរំខាន</li> <li>• គ្រប់គ្រងការបង្ហូរទឹកនៅតំបន់ដែលមានការរំខាន</li> <li>• គ្រប់គ្រងកម្របដី</li> <li>• នីតិវិធី និងការធានាគុណភាពសំណង់កំឡុងពេលដំឡើងប្រព័ន្ធវិស្វកម្ម basal, lateral និង top container</li> <li>• ការសម្អាតទឹកស្អុយ</li> </ul>
ការគ្រប់គ្រងកាកសំណល់មិនត្រឹមត្រូវ	កាកសំណល់ដែលមានប្រភពដើមផ្សេងៗគ្នាដែលកើតឡើងក្នុងកំឡុងពេលការងារសាងសង់ អាចត្រូវបានគម្របរក្សាទុក ដឹកជញ្ជូន និងបោះចោលដោយមិនត្រឹមត្រូវដែលបង្កឱ្យមានការបំពុលខ្យល់ ដី និងទឹក	<ul style="list-style-type: none"> <li>• ផ្តល់កន្លែងចោលសំរាមជាមួយអាជ្ញាធរមូលដ្ឋាន។ អនុញ្ញាតឱ្យសហគមន៍មូលដ្ឋានប្រើប្រាស់ថ្មលើស ដែលទុកចោយ បន្ទាប់ពីប្រើឡើងវិញ</li> <li>• កាកសំណល់ទាំងអស់ដែលចេញពីការដ្ឋានត្រូវបោះចោលស្របតាមបទប្បញ្ញត្តិបរិស្ថាន ក្នុងតំបន់ និងកន្លែងដែលត្រូវបានអនុម័តដោយអាជ្ញាធរមូលដ្ឋាន។</li> <li>• កាកសំណល់គ្រោះថ្នាក់ (ក្រមាកខ្ទក់សំណល់ប្រេង ថ្នាំលាបជាដើម) ត្រូវបោះចោលដូចដែលបានព្រមព្រៀងជាមួយអាជ្ញាធរប្រតិបត្តិ និងអាជ្ញាធរបរិស្ថាន ។</li> <li>• បុគ្គលិកដែលចូលរួមក្នុងការចាក់ចែងកាកសំណល់ដែលមានគ្រោះថ្នាក់ និងមិនមាន គ្រោះថ្នាក់ និងត្រូវទទួលបានការបណ្តុះបណ្តាលជាក់លាក់ក្នុងការគ្រប់គ្រងកាកសំណល់ការសម្អាតកាកសំណល់ និងរក្សាទុកសំណល់។</li> </ul>
ការរំខានទេសភាព/ផលប៉ះពាល់ដែលមើលឃើញនិងសោភ័ណភាព	ការស្តារឡើងវិញនូវទីតាំងដែលមានស្រាប់ ត្រូវបានគេរំពឹងថានឹងបណ្តាលឱ្យមានផលប៉ះពាល់វិជ្ជមាន ទៅលើទេសភាពដែលបច្ចុប្បន្នត្រូវបានរំខាននៅក្នុងទីក្រុង ទាំងអស់ដោយមិនមានការគ្រប់គ្រងកន្លែងចាក់សំរាម	<ul style="list-style-type: none"> <li>• ការជ្រើសរើសទីតាំងឱ្យបានគ្រប់គ្រាន់តាមរយៈដំណើរការវាយតម្លៃទីតាំងហ្គត់ចត់</li> <li>• កំណត់តំបន់សាងសង់ដោយយោងតាមការរចនាវិស្វកម្មលម្អិតដែលបានគ្រោងទុក</li> <li>• កំណត់ទីតាំងខាងក្រៅជាតំបន់នៃជម្រក និងប្រព័ន្ធអេកូឡូស៊ីសំខាន់ៗ</li> <li>• ការត្រួតពិនិត្យវត្តមានប្រភេទសត្វ និងការបំពុល</li> </ul>

ហេតុប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
ការរំខានដល់ ជីវចម្រុះ/ រុក្ខជាតិ និងសត្វ	ការស្តារឡើងវិញនូវទីតាំងដែលមានស្រាប់អាចបណ្តាលឱ្យមានការរំខានជាបណ្តោះអាសន្ន ដល់រុក្ខជាតិ និងសត្វ ដោយសារតែការអនុវត្តការងារសំណង់	<ul style="list-style-type: none"> <li>• វិធានការការពារទឹកជំនន់ ប្រសិនបើចាំបាច់</li> <li>• ការជ្រើសរើសទីតាំងឱ្យបានគ្រប់គ្រាន់តាម រយៈពេលវែងការវាយតម្លៃទីតាំងហ្វុតចត់</li> <li>• កំណត់កំបស់សាងសង់ដោយយោងតាមការ រចនាវិស្វកម្មលម្អិតដែលបានគ្រោងទុក</li> <li>• ប្រព័ន្ធប្រមូល និងសម្អាតទឹកស្អុយ</li> <li>• ការដំឡើងប្រព័ន្ធស្រទាប់ការពារ</li> <li>• កំណត់ទីតាំងខាងក្រៅជាកំបស់នៃជម្រក និងប្រព័ន្ធអេកូឡូស៊ីសំខាន់ៗ</li> <li>• ការត្រួតពិនិត្យវត្តមានប្រភេទសត្វ និងការបំពុល</li> <li>• វិធានការការពារទឹកជំនន់</li> </ul>
បេតិកភណ្ឌវប្បធម៌	ផលប៉ះពាល់ដែលអាចកើតមានលើតំបន់បេតិកភណ្ឌវប្បធម៌ ជាពិសេសក្នុងខេត្ត សៀមរាប លើមណ្ឌលវប្បធម៌អង្គរ	<ul style="list-style-type: none"> <li>• គ្មានផលប៉ះពាល់លើតំបន់បេតិកភណ្ឌវប្បធម៌ដែលគេស្គាល់ និងវត្តដែលត្រូវបានកំណត់ ជាមុន ពីការស្តារឡើងវិញនូវទីតាំងដែល មានស្រាប់ណាមួយឡើយ។ ដើម្បីកំណត់បន្ថែមដោយ ESIA ជាក់លាក់នូវទីតាំងលម្អិត</li> </ul>

**ហានិភ័យបរិស្ថាន-ដំណាក់កាលប្រតិបត្តិការ**

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
ទឹកស្អុយពីទីលាន	កន្លែងចាក់សំរាម ដែលមានស្រាប់នៅក្នុងខេត្តសៀមរាប កំពង់ស្ពឺ និងកណ្តាលសុទ្ធតែខ្វះប្រព័ន្ធប្រមូល និងប្រព្រឹត្តកម្មទឹកស្អុយ ដូច្នេះហើយទើបធ្វើឱ្យមានការបំពុលធ្ងន់ធ្ងរដល់បរិស្ថាន។ គម្រោងនឹងកាត់បន្ថយការបំពុលយ៉ាងខ្លាំងដោយ សារតែការស្តារឡើងវិញ/ការបិទកន្លែងដែលមានស្រាប់។	<ul style="list-style-type: none"> <li>• ស្រទាប់ការពារ និងប្រព័ន្ធប្រមូលទឹកស្អុយ</li> <li>• ការដាក់សំរាម និងគ្របប្រចាំថ្ងៃ</li> <li>• ការកាត់បន្ថយទឹកស្អុយ</li> <li>• អាងប្រព្រឹត្តកម្មទឹកស្អុយ</li> <li>• ធានាការទទួលបានការផ្គត់ផ្គង់ ទឹកស្អុយសម្រាប់សហគមន៍មូលដ្ឋាន</li> <li>• ការត្រួតពិនិត្យគុណភាពទឹក( ក្រោមដី)</li> </ul>
ឧស្ម័នចេញពីទីលានចាក់សំរាម	កន្លែងចាក់សំរាម ដែលមានស្រាប់នៅក្នុងខេត្តសៀមរាប កំពង់ស្ពឺ និងកណ្តាលសុទ្ធតែខ្វះប្រព័ន្ធប្រមូលឧស្ម័ន និងប្រព្រឹត្តកម្ម។ ដូច្នេះហើយ ទើបធ្វើឱ្យមានការបំពុលខ្យល់។ គម្រោងនឹងកាត់បន្ថយការបំពុលឧស្ម័នយ៉ាងខ្លាំង។	<ul style="list-style-type: none"> <li>• ការប្រមូល និងប្រព្រឹត្តកម្មឧស្ម័ននៅទីលានចាក់សំរាម (ការដុតភ្លើង)</li> <li>• កន្លែងធ្វើជីកំប៉ុស</li> </ul>
អេកូឡូស៊ី ទឹក ជីវចម្រុះ	ទីតាំងបច្ចុប្បន្នទាំងអស់ត្រូវបានអភិវឌ្ឍ និងប្រតិបត្តិការជាទីលានចាក់សំរាមចំហដោយគ្មាន វិធានការណាមួយ ដើម្បីការពារការបំពុលឡើយ។ ទីតាំងដែល មានសក្តានុពលមួយចំនួនស្ថិតនៅក្នុងតំបន់រស្មីប នៃសារៈសំខាន់នៃបរិស្ថានខ្ពស់។	<ul style="list-style-type: none"> <li>• ដំណើរការវាយតម្លៃទីតាំងយ៉ាង ហ្វុតចត់ ដើម្បីទប់ស្កាត់ទីតាំងដែលមាន ទីតាំងស្ថិតនៅតំបន់រស្មីប</li> <li>• គ្របសំណល់ប្រចាំថ្ងៃ</li> <li>• ប្រព័ន្ធប្រមូល និងប្រព្រឹត្តកម្មទឹកស្អុយ</li> <li>• ការដំឡើងប្រព័ន្ធស្រទាប់ការពារ</li> <li>• ការកំណត់កំបស់នៃជម្រក និងប្រព័ន្ធអេកូឡូស៊ីសំខាន់ៗ</li> <li>• ការត្រួតពិនិត្យវត្តមានប្រភេទ សត្វ និងការបំពុល</li> <li>• វិធានការការពារទឹកជំនន់</li> </ul>

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
		<ul style="list-style-type: none"> <li>• មិនទទួលយកកាកសំណល់គ្រោះថ្នាក់</li> </ul>
<p>ក្លិន</p>	<p>ទីតាំងដែលមានស្រាប់នៅក្នុងទីក្រុងទាំងបីបង្កឱ្យមានក្លិនស្អុយយ៉ាងខ្លាំងដោយសារតែប្រតិបត្តិការជាទីលានចាក់សំរាមបើកចំហ។ សកម្មភាពគម្រោងនឹងកាត់បន្ថយក្លិនយ៉ាងខ្លាំងបើប្រៀបធៀបទៅនឹងស្ថានភាពបច្ចុប្បន្ន។</p>	<ul style="list-style-type: none"> <li>• គ្របកាកសំណល់ប្រចាំថ្ងៃ</li> <li>• ការដំឡើងប្រព័ន្ធប្រមូលនិងប្រព្រឹត្តកម្មឧស្ម័ន</li> <li>• សម្ភារៈស្តារឡើងវិញនិងកន្លែងធ្វើជីកំប៉ុស</li> </ul>
<p>សំរាមគ្រោះថ្នាក់</p>	<p>បច្ចុប្បន្ននេះ មិនមានការត្រួតពិនិត្យលើការចោលសំណល់គ្រោះថ្នាក់នៅទីលានដែលមានស្រាប់នោះទេ។ ការកាត់បន្ថយហានិភ័យនៃការចោលសំណល់គ្រោះថ្នាក់លាយឡំជាមួយសំណល់ក្រុង តាមរយៈការកែលម្អនូវប្រតិបត្តិការ និងបទប្បញ្ញត្តិ</p>	<ul style="list-style-type: none"> <li>• បទប្បញ្ញត្តិក្រុងសម្រាប់ប្រតិបត្តិការចាក់សំរាមដើម្បីផ្តល់បញ្ជីសំណល់ដែលអាចទទួលយកបាននិងមិនអាចទទួលយកបាន។ សំណល់ដែលមិនអាចទទួលយកបានចាំបាច់ត្រូវហាមឃាត់យ៉ាងតឹងរ៉ឹងពីការចូល</li> <li>• ការយល់ដឹងដើម្បីជៀសវាងការលាយឡំនៃសំណល់</li> <li>• កម្មករទាំងអស់នឹងត្រូវបានផ្តល់ឧបករណ៍ការពារការបណ្តុះបណ្តាលក្នុងការគ្រប់គ្រងសំណល់និងការត្រួតពិនិត្យយ៉ាងតឹងរ៉ឹង</li> <li>• រៀបចំផែនការឆ្លើយតបបន្ទាន់</li> </ul>
<p>ផលប៉ះពាល់នៃការមើលឃើញនិងសោភ័ណភាព</p>	<p>ការស្តារឡើងវិញនូវទីតាំងបច្ចុប្បន្ននិងវិធានការកាត់បន្ថយរួមទាំងការគ្របដណ្តប់សំណល់ប្រចាំថ្ងៃនឹងនាំទៅរកការកែលម្អសោភ័ណភាពបច្ចុប្បន្ន ជាពិសេសផលប៉ះពាល់ដល់សហគមន៍ភ្នំពេញនោះ។</p>	<ul style="list-style-type: none"> <li>• គ្របសំណល់ប្រចាំថ្ងៃ</li> <li>• ដើមឈើបាំងខ្យល់</li> <li>• របងហ៊ុំព័ទ្ធទីតាំងនិងតំបន់ទ្រនាប់</li> </ul>
<p>ផលប៉ះពាល់បន្ទាប់ពីការបិទទីលានចាក់សំរាម</p>	<p>ក្នុងករណីមានការអភិវឌ្ឍន៍កន្លែងចាក់សំរាមថ្មីកន្លែងចាក់សំរាមដែលមានស្រាប់ត្រូវបានចាត់ទុកថាជាកន្លែងពាក់ព័ន្ធហើយនឹងត្រូវការបិទឱ្យបានត្រឹមត្រូវ។ ផលប៉ះពាល់បរិស្ថានសំខាន់ៗដោយសារគ្មានការបិទត្រឹមត្រូវរួមមានការបំពុលបរិយាកាស ដោយសារការបន្តដំណើរការរលួយនៃកាកសំណល់ហានិភ័យនៃការនេះ រាលដាលនិងការបំពុលទឹកក្រោមដីដោយសារទឹកស្អុយដែលមិនបាន ប្រមូល។</p>	<ul style="list-style-type: none"> <li>• ការគ្របបិទចុងក្រោយ៖ ការគ្របបិទចុងក្រោយគឺជាគន្លឹះក្នុងការកាត់បន្ថយនិងការពារការបំពុលទឹកពីទឹកលេចចេញក៏ដូចជាកាត់បន្ថយផលប៉ះពាល់ក្លិន ការបង្កើតឧស្ម័ននៅកន្លែងចាក់សំរាម ផលប៉ះពាល់ដែលមើលឃើញ ការបង្កជំងឺនិងការការពារការបាក់នៃដី គ្រោល។</li> <li>• ប្រព័ន្ធគ្របបិទចុងក្រោយត្រូវបានដំឡើងជាបន្តបន្ទាប់តាមពេលវេលាបន្ទាប់ពីកាកសំណល់ត្រូវបានដាក់ដល់កម្រិតចុងក្រោយរបស់វាលើកឡើងនីមួយៗ ឬផ្នែករបស់វា។</li> <li>• ការបង្កើតស្រទាប់ការពារមិនជ្រាបទឹកអាចត្រូវបានពិចារណាក៏ដូចជាការអភិវឌ្ឍន៍ប្រភពទឹកជំនួសសម្រាប់លំនៅដ្ឋានជុំវិញ</li> <li>• វិធានការកាត់បន្ថយការបញ្ចេញទឹកលេចចេញដែលនៅសេសសល់បន្ទាប់ពីការបិទនឹងអាស្រ័យលើការវាយតម្លៃលម្អិតលើការបំពុល</li> </ul>

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
		ពុលទឹកក្រោមដី ការជ្រាបចូលទៅដី និងផលប៉ះពាល់លើតំបន់លំនៅ ដ្ឋានណាមួយដែលនៅជិតនោះ

**ហានិភ័យសង្គមនៅមុន និងកំឡុងពេលដំណាក់កាលសាងសង់**

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
<p>ការដោះស្រាយផលប៉ះពាល់ការរុញប្រកាសសេដ្ឋកិច្ច និងហេតុប៉ះពាល់ដល់ជីវភាពរស់នៅ និងការងារសុខភាព និងសុវត្ថិភាព</p>	<p>នេះអាចរួមបញ្ចូលផលប៉ះពាល់លើអ្នករើសសំរាមនៅកន្លែងចាក់សំរាមដែលមានស្រាប់។ ផលប៉ះពាល់លើជីវភាពរស់នៅរបស់កុមារ ផលប៉ះពាល់លើម្ចាស់ដី ផលប៉ះពាល់លើសហគមន៍ក្បែរនោះ។</p> <p>ផលប៉ះពាល់ដោយសារនីតិវិធីការងារ សុខភាព និងសុវត្ថិភាព (OHS) មិនមានគ្រប់គ្រាន់</p>	<ul style="list-style-type: none"> <li>• ផលប៉ះពាល់ជាទូទៅលើអ្នករើសសំរាម និងផ្តល់ភាពវិជ្ជមាន ដោយសារអ្នករើសសំរាម និងបន្តទទួលបានធនធានសំរាមក្រោមលក្ខខណ្ឌការងារ សុខភាព និងសុវត្ថិភាព ដែលបានធ្វើឱ្យប្រសើរឡើង នៅក្នុងកន្លែងទាញយកធនធានប្រើប្រាស់ឬកែច្នៃឡើងវិញ។</li> <li>• ការយកចិត្តទុកដាក់យ៉ាងសំខាន់ចំពោះនីតិវិធីការងារសុខភាព និងសុវត្ថិភាព (OHS) និងត្រូវត្រួតពិនិត្យដោយវិស្វកម្មទទួលបានបន្តការត្រួតពិនិត្យ។</li> <li>• ការពិគ្រោះយោបល់ប្រកបដោយអត្ថន័យជាមួយសហគមន៍ជិតខាង អ្នករើសសំរាម និងអ្នកដែលអាចរងហេតុប៉ះពាល់ផ្សេងទៀតនៅនឹងទីតាំងដែលមានសក្តានុពលមួយ</li> <li>• ការអភិវឌ្ឍន៍ផែនការដោះស្រាយផលប៉ះពាល់ និងការត្រួតពិនិត្យការអនុវត្តលម្អិត</li> <li>• ធានាឱ្យមានការយល់ដឹងអំពីឱកាសការងារនៅក្នុងសហគមន៍ជុំវិញ</li> <li>• វិធានការការរៀបរយការរំខានដល់ការចិញ្ចឹមជីវិតដោយពឹងផ្អែកលើការរើសសំរាម៖ អនុញ្ញាតឱ្យអ្នករើសសំរាមដែលមានអាយុពេញវ័យអាចចូលទៅធ្វើការនៅកន្លែងកែច្នៃឡើងវិញ (កន្លែងញែក/កន្លែងទាញយកឬរើសសំរាមធនធានប្រើប្រាស់កែច្នៃឡើងវិញ) និងកន្លែងធ្វើជីកំប៉ុសដែលមាននៅក្នុងទីលានទុកដាក់សំរាមថ្មី ស្របតាមគោលការណ៍ណែនាំការងារសុខភាព និងសុវត្ថិភាព។ ក្រុមហ៊ុនគ្រប់គ្រងទីលានទុកដាក់សំរាមនឹងធ្វើការចុះបញ្ជីវត្តមាន និងផ្សេងផ្នែកអាយុ ហើយមានតែអ្នកដែលបានចុះឈ្មោះក្នុងបញ្ជីអ្នករើសសំរាមដោយផ្អែកលើជំរឿនប៉ុណ្ណោះ ទើបអាចចូល និងចូលរួមក្នុងការញែកសំរាមនៅក្នុងកន្លែងញែក/ទាញយកធនធានសម្ភារៈ។ សាច់ញាតិ ឬសមាជិកគ្រួសាររបស់អ្នករើសសំរាមដែលមិនបានចុះឈ្មោះនឹងមិនត្រូវបានអនុញ្ញាតឱ្យចូលទេ។ ការធ្វើបែបនេះនឹងធានាថាគម្រោងនឹងមិនហាមឃាត់ក្នុងការចូលរើសសំរាម និងជៀសវាងផលប៉ះពាល់ដល់ជីវភាពរស់នៅ និងការគ្រប់គ្រងលំហូរចូលថ្មីនៃអ្នករើសសំរាមក្នុងពេលតែមួយ។</li> </ul>
<p>ក្រុមអ្នករើសសំរាមដែលងាយរងគ្រោះ និងបាត់បង់ផលប្រយោជន៍ ជាពិសេសអ្នករើសសំរាមជាកុមារ</p>	<p>ការចាត់វិធានការបន្ថែមសម្រាប់ក្រុមអ្នករើសសំរាមងាយរងគ្រោះ និងបាត់បង់ផលប្រយោជន៍ ជាពិសេសក្រុមអ្នករើសសំរាមជាកុមារ យោងតាមច្បាប់ការងារនៃប្រទេសកម្ពុជា អាយុសម្រាប់បំរើការងារមានយ៉ាងតិចត្រឹម១៤ឆ្នាំ</p>	<ul style="list-style-type: none"> <li>• វិធានការបន្ថែមដើម្បីគាំទ្រក្រុមអ្នករើសសំរាមដែលងាយរងគ្រោះ និងជួបការលំបាក៖ ជាពិសេសសម្រាប់អ្នកដែលពឹងផ្អែកទាំងស្រុងលើចំណូលពីការរើសសំរាមក្នុងការទ្រទ្រង់ជីវភាពរស់នៅ និងមិនទាន់មានប័ណ្ណសមធម៌និងត្រូវបានការជួយសម្របសម្រួលពីគម្រោងឱ្យទទួលបានប័ណ្ណសមធម៌តាមរយៈយន្តការ នៃការស្នើសុំ (On-Demand ID Poor) នៅពេលដែលពួកគាត់មានលក្ខណៈសម្បត្តិគ្រប់គ្រាន់</li> </ul>

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
	<p>រួមមានកុមារអាយុចន្លោះពី១៤ទៅ១៨ឆ្នាំ មានលទ្ធភាពបំប្រែការងារតែមួយគត់ ឬចូលរួមក្រោមកាលៈទេសៈជាក់លាក់ (សូមមើលផ្នែកខាងស្តាំ)។ ជាពិសេស កុមារវ័យសំរាប់ក្រោមអាយុ១៤ឆ្នាំ មិនអាចត្រូវបានអនុញ្ញាតឱ្យចូលរួមនៅក្នុងសកម្មភាពការងារកែច្នៃសំរាម និងទាមទារវិធានការ និងជម្រើសគាំទ្រ។</p>	<p>និងកាលក្នុងកិច្ចសម្របសម្រួល លើសពីនេះ ពួកគេក៏នឹងទទួលបានព័ត៌មាន និងការបញ្ជូនឈ្មោះទៅកាន់កម្មវិធីជំនួយសង្គមផ្សេងៗ ដែលកំពុងអនុវត្តដោយរាជរដ្ឋាភិបាល ឬអង្គការមិនមែនរដ្ឋាភិបាលក្នុងខេត្ត ដូចជាការបំប្រែប្រយោជន៍គ្រួសារថ្មី ដែលត្រូវរំពឹងថានឹងចាប់ផ្តើមនៅឆ្នាំ ២០២៣។</p> <ul style="list-style-type: none"> <li>ការរៀបចំ ការរចនា និងការគ្រប់គ្រងសម្រាប់កន្លែងព្រែកយកធនធានសម្រាប់ប្រើប្រាស់ឡើងវិញ និងកន្លែងធ្វើដឹកជញ្ជូន និងបញ្ជូនវិធានការដើម្បីអនុញ្ញាតឱ្យក្រុមងាយរងគ្រោះ និងជាពិសេសស្ត្រីអាចធ្វើការព្រែកយកសំរាមប្រើប្រាស់ឡើងវិញជាមួយនឹងលក្ខខណ្ឌការងារ សុខភាព និងសុវត្ថិភាពត្រឹមត្រូវ និងផ្តល់ការបណ្តុះបណ្តាលជំនាញ ដោយរួមទាំងជាមួយនឹងការផ្តោតលើស្ត្រី (ងាយរងគ្រោះ)។</li> </ul> <p>វិធានការគាំទ្រសម្រាប់កុមារអាយុចន្លោះពី ១៤ឆ្នាំ ដល់ ១៨ឆ្នាំ</p> <p>គម្រោងនេះ នឹងផ្តល់ជំនួយគាំទ្រដល់កុមារវ័យសំរាប់ ជំនួយគាំទ្រនេះនឹងមិនត្រូវបានផ្តល់ជាសាច់ប្រាក់ ឬឥណទានទេ ដោយសារការស្តារជីវភាពរស់នៅនឹងមិនត្រូវបានអនុវត្ត ទេ ដោយសារកុមារគួរតែនៅសាលារៀន។ ជំនួយគាំទ្រនេះ នឹងត្រូវបានផ្តល់ជូនតាមរយៈកម្មវិធីជំនួយសង្គមរបស់ រដ្ឋាភិបាល និងអង្គការក្រៅរដ្ឋាភិបាលដែលមានស្រាប់។ ក្នុងករណីដែលកម្មវិធីដែលមានស្រាប់ខ្វះខាត គម្រោងនឹងផ្តល់ការគាំទ្របន្ថែមជាមួយនឹងជម្រើសមួយ ដោយប្រើប្រាស់ការផ្តល់ហិរញ្ញប្បទានឥតសំណងដែល មានក្នុងគម្រោងនេះ។ ក្រសួងមហាផ្ទៃ និងរដ្ឋបាលថ្នាក់ក្រោមជាតិពាក់ព័ន្ធ ជាអ្នកទទួលបានការកិច្ចការងាររៀបចំ និងអនុវត្តវិធានការគាំទ្រជីវភាពរស់នៅដល់កុមារទាំង នេះ ដូចខាងក្រោម៖</p> <ul style="list-style-type: none"> <li>អនុញ្ញាតឱ្យចូលទៅក្នុងទីលានទុកដាក់សំរាមថ្មីនៅ ក្នុងដូចជា កន្លែងព្រែក/ទាញយកធនធានពីសំរាម (ព្រែកសំរាមដើម្បីទាញយកសំរាមដែលអាចកែច្នៃឡើងវិញ) និងកន្លែងធ្វើដឹកជញ្ជូន ដែលត្រូវធ្វើការក្រោមលក្ខខណ្ឌត្រួតពិនិត្យ ដើម្បីធានាបាននូវលក្ខខណ្ឌការងារ សុខភាព និងសុវត្ថិភាពត្រឹមត្រូវសម្រាប់កុមារទាំងនេះ និងមិនប៉ះពាល់ដល់ការសិក្សារបស់ពួកគេ។ ក្រុមហ៊ុនគ្រប់គ្រងទីលានទុកដាក់សំរាមដែលពាក់ ព័ន្ធត្រូវធ្វើការចុះឈ្មោះ និងផ្សព្វផ្សាយឈ្មោះ ដោយអនុញ្ញាតឱ្យកុមារដែលមានឈ្មោះចុះបញ្ជី ត្រឹមត្រូវប៉ុណ្ណោះអាចចូល និងវ័យសំរាប់បាននៅក្នុងទីកន្លែងព្រែក /ទាញយកធនធាន។ វិធានការគ្រួសារ ឬមិត្តភក្តិរបស់អ្នកដែលបានចុះបញ្ជី និងមិនត្រូវបានអនុញ្ញាតឱ្យចូលឡើយ ប្រសិនបើពួកគេមិនមានឈ្មោះក្នុងបញ្ជីចុះឈ្មោះ នោះ។</li> <li>សម្រាប់កុមារដែលមកពីគ្រួសារពឹងផ្អែកទាំងស្រុង លើចំណូលពីការវេសសំរាមក្នុងការទ្រទ្រង់ជីវភាពរស់ នៅ ហើយដែលមិនទាន់មានប័ណ្ណសមធម៌ គម្រោងនឹងជួយសម្របសម្រួលឱ្យទទួលបានប័ណ្ណសមធម៌តាមយន្តការ នៃការស្នើសុំ (One-Demand</li> </ul>

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
		<p>IDpoor) នៅពេលដែលពួកគេមានលក្ខណសម្បត្តិគ្រប់គ្រាន់តាមលក្ខខណ្ឌរបស់ប័ណ្ណសមធម៌។</p> <ul style="list-style-type: none"> <li>• ធ្វើការវាយតម្លៃលើតម្រូវការសង្គមដោយផ្អែកលើជំរឿន និងការស្ទង់មតិសេដ្ឋកិច្ចសង្គមនៅពេលដែលទីតាំងគម្រោងត្រូវបានជ្រើសរើស និងផ្តល់នូវការគាំទ្រចាំបាច់ជួយដល់កុមារដើម្បីឱ្យបន្តការសិក្សានៅសាលារៀនព្រមទាំងជួយឱ្យពួកគេទទួលបានការគាំទ្រពីកម្មវិធីជំនួយសង្គមផ្សេងៗ ផ្តល់ដោយរដ្ឋាភិបាល ឬអង្គការមិនមែនរដ្ឋាភិបាលដែលមានស្រាប់។</li> <li>• រៀបចំ និងដំណើរការមជ្ឈមណ្ឌលសិក្សាសហគមន៍ (អាចនឹងត្រូវធ្វើឡើងក្នុងបរិវេណសាលាបឋមសិក្សានៅក្បែរទីលានទូកដាក់សំរាម) ដើម្បីឱ្យកុមារទទួលបានការសិក្សាពិបាកនិរន្តរ៍សិល្បៈ កីឡា ភាសាអង់គ្លេស ឬថ្នាក់បឋមបន្ថែមលើមុខវិជ្ជាផ្សេងៗក្រៅម៉ោងសិក្សានៅសាលារដ្ឋ រដ្ឋបាលស្រុក ឬរដ្ឋបាលឃុំជាអ្នកគ្រប់គ្រងមជ្ឈមណ្ឌលនេះតាមរយៈវិធីសាស្ត្រគ្រប់គ្រងសាលាមត្តេយ្យសហគមន៍ និងការណែនាំបន្ថែមពីគម្រោង។ ការរៀបចំ និងដំណើរការមជ្ឈមណ្ឌលសិក្សាសហគមន៍នេះនឹងត្រូវប្រើប្រាស់កញ្ចប់ថវិកាជំនួយឥតសំណងដែលមាននៅក្នុងគម្រោង។</li> <li>• ផ្តល់ការគាំទ្រក្នុងការចុះឈ្មោះចូលរៀនកម្មវិធីវិជ្ជាគ្រូបណ្តុះបណ្តាលជំនាញ ដែលផ្តល់ដោយរដ្ឋាភិបាល និងអង្គការមិនមែនរដ្ឋាភិបាលនៅក្នុងខេត្តគោលដៅនីមួយៗ។</li> </ul> <p>វិធានការគាំទ្រសម្រាប់កុមារអាយុក្រោម១៤ឆ្នាំ ដើម្បីបញ្ឈប់ពួកគេកុំឱ្យចូលទៅកាន់ទីលានទូកដាក់សំរាមថ្មី ឬឈប់រើសសំរាមបន្តទៅទៀតនោះ គម្រោងស្នើឱ្យមានវិធានការគាំទ្រដូចខាងក្រោម៖</p> <ul style="list-style-type: none"> <li>• ធ្វើការវាយតម្លៃឱ្យបានជាក់លាក់ជាមួយគ្រួសារដែលមានកុមារទៅជាមួយអាណាព្យាបាលនៅទីលានចាក់សំរាម ឬធ្វើការងាររើសសំរាមនៅទីលានចាក់សំរាមបច្ចុប្បន្ន ដើម្បីកំណត់អំពីតម្រូវការសង្គម និងស្ថានភាពរស់នៅប្រចាំថ្ងៃរបស់ពួកគេ។</li> <li>• ធ្វើការត្រួតពិនិត្យជាទៀងទាត់ និងល្អិតល្អន់ជាមួយគ្រួសារកុមារដែលពឹងផ្អែកទាំងស្រុងលើប្រាក់ចំណូលដែលបានមកពីការរើសសំរាម និងជួយសម្របសម្រួលឱ្យពួកគេទទួលបានប័ណ្ណសមធម៌ (ID-poor Household) នៅពេលដែលពួកគេមានលក្ខណៈសម្បត្តិគ្រប់គ្រាន់តាមលក្ខខណ្ឌរបស់ប័ណ្ណសមធម៌។ កិច្ចការនេះនឹងត្រូវបានអនុវត្តដោយគណៈកម្មការកំណត់អត្តសញ្ញាណកម្មគ្រួសារក្រីក្រនៅថ្នាក់ឃុំដោយមានការគាំទ្រពីក្រុមការងារគម្រោងថ្នាក់ខេត្ត។</li> <li>• ផ្អែកលើការវាយតម្លៃអំពីតម្រូវការជាក់ស្តែង គម្រោងនឹងជួយសម្របសម្រួលឱ្យកុមារទាំងនោះទទួលបានការគាំទ្រពីកម្មវិធីជំនួយសង្គមនានាដែលមានស្រាប់ និងកំពុងអនុវត្តដោយរដ្ឋាភិបាល ឬដោយអង្គការមិនមែនរដ្ឋាភិបាលនៅក្នុងខេត្តគោលដៅនីមួយៗ ដូចជា ការផ្តល់សម្ភារសិក្សាកម្មវិធីអាហារូបករណ៍ កម្មវិធីផ្តល់អាហារនៅតាមសាលារៀន (អនុវត្តដោយកម្មវិធីស្បៀងអាហារពិភពលោក</li> </ul>

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
		<p>និងក្រសួងអប់រំ យុវជន និងកីឡាក្នុងខេត្តសៀមរាប ) ជាដើម។</p> <ul style="list-style-type: none"> <li>• គម្រោងអាចនឹងប្រើប្រាស់ផ្នែកណាមួយនៃទីលានចាក់សំរាមចាស់ដែលត្រូវគ្របបិទ និងស្តារឡើងវិញ (ក្នុងករណីដែលអាចប្រើប្រាស់បាន) ឬដីទំនេរនៅក្នុងសាលាបឋមសិក្សានៅក្បែរទីលានចាក់សំរាម ដើម្បីរៀបចំជាសួនកុមារ និងទីលានលេងកីឡាសម្រាប់ក្មេងៗ ព្រមទាំងជម្រុញឱ្យពួកគេចូលរួមសកម្មភាពអប់រំផ្សេងៗទៀត។</li> <li>• ធ្វើការលើកទឹកចិត្តដល់កុមារឱ្យចូលរួមក្នុងសកម្មភាពអប់រំនានាក្នុងមជ្ឈមណ្ឌលសិក្សាសហគមន៍ដូចជា បំណិនជីវិត ភាសាអង់គ្លេស ឬថ្នាក់រៀនបំប៉នបន្ថែមក្រៅម៉ោងសិក្សារបស់រដ្ឋ។</li> </ul> <p>វិធានការជៀសវាងការខ្វះខាតដល់ការចិញ្ចឹមជីវិតដែលពឹងផ្អែកទាំងស្រុងលើការរើសសំរាមតាមរយៈការបន្តចូលទៅរើសសំរាម ព្រមទាំងទទួលបាននូវវិធានការគាំទ្របន្ថែមនឹងត្រូវបានត្រួតពិនិត្យពីខាងក្រៅ។<sup>4</sup></p>
ឱកាសការងារបណ្តោះអាសន្ន	<p>ការស្តារឡើងវិញនិងការពង្រីកការងារនៅកន្លែងចាក់សំរាមដែលមានស្រាប់ និងការសាងសង់កន្លែងចាក់សំរាមផ្សេងទៀតអាចផ្តល់ឱកាសការងារសម្រាប់អ្នករស់នៅក្នុងភូមិ និងទីប្រជុំជនក្បែរនោះ។ នៅគ្រប់ករណីទាំងអស់ ប្រជាពលរដ្ឋដែលរស់នៅក្នុងតំបន់នោះបានចូលរួមក្នុងវិស័យកែច្នៃឡើងវិញក្នុងមូលដ្ឋានរួចហើយ។</p>	<ul style="list-style-type: none"> <li>• ដើម្បីបង្កើនអត្រាប្រយោជន៍ការងារសម្រាប់ប្រជាជនក្នុងតំបន់ កិច្ចខិតខំប្រឹងប្រែងគួរតែត្រូវបាន ធ្វើឡើងដើម្បីធានាថាឱកាសទាំងនេះត្រូវបាន ផ្តល់ដល់ប្រជាជនក្នុងតំបន់ ដែលអាចរួមមានការចែករំលែកព័ត៌មាន ប្រកបដោយ តម្លាភាពអំពីឱកាសការងារនាពេលខាងមុខ និងការស្វែងរកឱកាសដើម្បីលើកទឹកចិត្តដល់ ក្រុមហ៊ុនក្នុងស្រុកដែលជាផ្នែកមួយ នៃការចូលហ៊ុនគ្នាសម្រាប់ការដេញថ្លៃសាងសង់។</li> </ul>
សុខភាព និងសុវត្ថិភាពសហគមន៍	<p>ការស្តារឡើងវិញ និងការពង្រីកការងារនៅ កន្លែងចាក់សំរាម និងការសាងសង់កន្លែង ចោលសំរាមផ្សេងទៀត អាចជះឥទ្ធិពល អវិជ្ជមានដល់សុខភាព និងសុវត្ថិភាព សហគមន៍ជិតខាង រួមទាំងផលប៉ះពាល់នៃ លំហូរចូលនៃកម្មករ ភាពគ្មានគីមលើ ធនធានក្នុងស្រុកនិងអមដោយ ហានិភ័យចំពោះ SEA/SH ។</p>	<ul style="list-style-type: none"> <li>• ត្រួតពិនិត្យការងារសាងសង់ និងកាតព្វកិច្ច ច្បាស់លាស់ និងក្រមសីលធម៌សម្រាប់ក្រុមហ៊ុន</li> <li>• ព័ត៌មានទៀងទាត់អំពីវិជ្ជាជីវៈ និងការអនុលោម តាមបរិស្ថាន និងសង្គមសម្រាប់សហគមន៍មូលដ្ឋាន</li> <li>• ការបង្កើតប្រព័ន្ធដោះស្រាយបណ្តឹងសក់ច្បាស់លាស់</li> <li>• ត្រួតពិនិត្យនីតិវិធីគ្រប់គ្រងការងារ</li> <li>• ទំនាក់ទំនងព័ត៌មានអំពីម៉ោងសាងសង់ជាមួយប្រជា ជនក្នុងតំបន់</li> <li>• ត្រួតពិនិត្យការអនុវត្តបទប្បញ្ញត្តិ OH&amp;S និងក្រមសីលធម៌នៅលើ SEA/SH</li> <li>• សវនាការសាធារណៈ និងការពិគ្រោះយោបល់ដ៏ល្អ។</li> <li>• ការដាក់កំហិតពីការចូលទៅកាន់ការដ្ឋានសំណង់</li> </ul>

**ហានិភ័យសង្គម៖ កំឡុងពេលប្រតិបត្តិការ**

<sup>4</sup> ការត្រួតពិនិត្យតាមដានអាចរួមបញ្ចូលដូចជា៖ (i) ការត្រួតពិនិត្យការចូលរបស់អ្នករើសសំរាមដែលមានសិទ្ធិទៅក្នុងកន្លែងទាញយកធនធាន (ការរើសសំរាម) សហគមន៍ និងកន្លែងធ្វើជីកំបុសដោយផ្អែកលើការធ្វើដំរើន និង ESIA នៃទីតាំងជាក់លាក់ (ii) ឱកាសការងារ និងកិច្ចសន្យាការងាររបស់អ្នករើសសំរាមជាមួយក្រុមហ៊ុនគ្រប់គ្រងទីលានទុកដាក់សំរាម (iii) ការត្រួតពិនិត្យ/ការសម្របសម្រួល នៃវិធានការបន្ថែមសម្រាប់អ្នករើសសំរាមជាកុមារ ជាពិសេសបន្ទាប់ពីម៉ោងសិក្សា និងរបស់បរិក្ខារផ្សេងទៀតដែលអាចចេញពីការវាយតម្លៃការងារ (iv) ការត្រួតពិនិត្យការដាក់ពាក្យស្នើសុំ និងសិទ្ធិទទួលបាន IDpoor របស់អ្នករើសសំរាម (v) មានវគ្គបណ្តុះបណ្តាល និងការអភិវឌ្ឍន៍ជំនាញជាច្រើន (vi) លក្ខខណ្ឌការងារ OHS សម្រាប់មនុស្សពេញវ័យ និងកុមារអាយុចន្លោះ ១៤ ទៅ ១៨ឆ្នាំ (តាមនិយមន័យ និងលក្ខខណ្ឌនៃ ESIA នៃទីតាំងជាក់លាក់) (vii) ដោះស្រាយបណ្តឹងសក់។ សូចនាករនឹងត្រូវបានរៀបចំចុងក្រោយជាផ្នែកមួយនៃ ESIA នៃទីតាំងជាក់លាក់ដោយផ្អែកលើការវាយតម្លៃការងារក្នុងការពិគ្រោះយោបល់ជាមួយអ្នករើសសំរាម។

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
<p>សុខភាព និងសុវត្ថិភាពសហគមន៍</p> <p>ការស្តារឡើងវិញនូវជីវភាព និងការងារសុខភាព និងសុវត្ថិភាព</p>	<p>ការស្តារឡើងវិញ និងការពង្រីកកន្លែងចាក់សំរាមបច្ចុប្បន្នទៅជាកន្លែងចាក់សំរាមវិស្វកម្ម ឬការបិទ ទីតាំងដែលមានស្រាប់ និងការអភិវឌ្ឍន៍ទីតាំងថ្មី និងកាត់បន្ថយយ៉ាងធំធេងនូវហានិភ័យសុខភាព និងសុវត្ថិភាពដែលទាក់ទងនឹងការបំពុលសម្រាប់សហគមន៍ និងកម្មករជិតខាង ដោយសារការអនុវត្ត OHS ដែលបានធ្វើអោយប្រសើរឡើង។</p>	<ul style="list-style-type: none"> <li>• ការអនុវត្តប្រតិបត្តិការចាក់សំរាមបែបទំនើប និងការដាក់បញ្ចូលស្ថានភាពការអនុវត្តសម្រាប់ការគ្រប់គ្រងកន្លែងចាក់សំរាម និងការអនុវត្តប្រតិបត្តិការក្នុង កិច្ចសន្យាឧទាហរណ៍ដូចជា ការបង្កើតកាកសំណល់ និងការគ្របដីប្រចាំថ្ងៃ និងកម្រិតសក្តានុពលសម្រាប់ការអភិវឌ្ឍន៍ប្រជាជនរស់នៅដែលមានសត្វល្អិត និងសត្វ ចង្រៃ។</li> <li>• ការប្រមូលខ្សែស្រឡាយ និងជីកំប៉ុសដើម្បីមួយផ្នែកជនៃប្រភាគសរីរាង្គចេញ</li> <li>• ការប្រមូល និងការប្រព្រឹត្តកម្មទឹកស្អុយ</li> <li>• ប្រព័ន្ធស្រទាប់ និងគម្រសំណល់ប្រចាំថ្ងៃ និងក្នុងករណី បិទគម្របកាកសំណល់ចុងក្រោយ</li> <li>• ហ៊ុមព័ទ្ធទីតាំង នីតិវិធីចុះឈ្មោះ</li> <li>• សមាហរណកម្មនៃអ្នករើសសំរាមទៅក្នុងកន្លែងស្តារសម្ភារៈសំណល់ និងជីកំប៉ុស តាមរយៈការផ្តល់ PPE ការបណ្តុះបណ្តាល និងការប្រកាន់ខ្ជាប់នូវនីតិវិធី OHS</li> <li>• ការផ្តល់ PPEs និងការបណ្តុះបណ្តាលសមស្រប</li> <li>• ការពិនិត្យសុខភាព</li> <li>• ការផ្គត់ផ្គង់ទឹកស្អាតដល់សហគមន៍ជុំវិញផ្ទាល់ក្នុងភូមិ អាងបោកកក់ បង្គន់អនាម័យ បន្ទប់ផ្លាស់សំលៀកបំពាក់។ល។នៅទីលាន</li> <li>• វិធានការការរៀនរាល់ការខានដល់ការចិញ្ចឹមជីវិតដោយពឹងផ្អែកលើការរើសសំរាម៖ អនុញ្ញាតឱ្យអ្នករើសសំរាមដែលមានអាយុពេញវ័យ អាចចូលទៅធ្វើការនៅកន្លែងកែច្នៃឡើងវិញ (កន្លែងញែក/កន្លែងទាញយកឬរើសសំរាមធនធានប្រើប្រាស់កែច្នៃឡើងវិញ) និងកន្លែងធ្វើជីកំប៉ុសដែលមាននៅក្នុងទីលានទុកដាក់សំរាមថ្មី</li> </ul> <p>ស្របតាមគោលការណ៍ណែនាំការងារ សុខភាព និងសុវត្ថិភាព។</p> <p>ក្រុមហ៊ុនគ្រប់គ្រងទីលានទុកដាក់សំរាមនឹងធ្វើការចុះបញ្ជីវត្តមាន និងផ្ទៀងផ្ទាត់អាយុ ហើយមានតែអ្នកដែលបានចុះឈ្មោះក្នុងបញ្ជីអ្នករើសសំរាមដោយផ្អែកលើជំរឿនប៉ុណ្ណោះ ទើបអាចចូល និងចូលរួមក្នុងការញែកសំរាមនៅក្នុងកន្លែងញែក/ទាញយកធនធានសម្ភារៈ។ សាច់ញាតិឬសមាជិកគ្រួសាររបស់អ្នករើសសំរាមដែលមិនបានចុះឈ្មោះនឹងមិនត្រូវបានអនុញ្ញាតឱ្យចូលទេ។ ការធ្វើបែបនេះនឹងធានាថាគម្រោងនឹងមិនហាមឃាត់ក្នុងការចូលរើសសំរាម និងជៀសវាងផលប៉ះពាល់ដល់ជីវភាពរស់នៅ និងការគ្រប់គ្រងលំហូរចូលថ្មីនៃអ្នករើសសំរាមក្នុងពេលតែមួយ។</p>
<p>ក្រុមអ្នករើសសំរាមដែលងាយរងគ្រោះ និងបាត់បង់ផលប្រយោជន៍</p> <p>ជាពិសេសអ្នករើសសំរាមជាកុមារ</p>	<p>ការចាត់វិធានការបន្ថែមសម្រាប់ក្រុមអ្នករើសសំរាមងាយរងគ្រោះ និងបាត់បង់ផលប្រយោជន៍ ជាពិសេសក្រុមអ្នករើសសំរាមជាកុមារ យោងតាមច្បាប់ការងារនៃប្រទេសកម្ពុជា អាយុសម្រាប់បំរើការងារមានយ៉ាងតិចគឺ១៤ឆ្នាំ</p>	<ul style="list-style-type: none"> <li>• វិធានការបន្ថែមដើម្បីកាត់ទ្រក្រុមអ្នករើសសំរាមដែលងាយរងគ្រោះ និងជួបការលំបាក៖ ជាពិសេសសម្រាប់អ្នកដែលពឹងផ្អែកទាំងស្រុងលើចំណូលពីការរើសសំរាមក្នុងការទ្រទ្រង់ជីវភាពរស់នៅ និងមិនទាន់មានប័ណ្ណសមធម៌នឹងត្រូវបានការជួយសម្របសម្រួលពីគម្រោងឱ្យទទួលបានប័ណ្ណសមធម៌តាមរយៈយន្តការ នៃការស្នើសុំ (On-Demand ID Poor) នៅពេលដែលពួកគាត់មានលក្ខណសម្បត្តិគ្រប់</li> </ul>

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
	<p>រួមមានកុមារអាយុចន្លោះពី១៤ ទៅ១៨ឆ្នាំ មានលទ្ធភាពបំប្រើការងារតែមួយ គត់ ឬចូលរួមក្រោមកាលៈទេសៈជាក់លាក់ (សូមមើលផ្នែកខាងស្តាំ)។ ជាពិសេស កុមាររើសសំរាមក្រោមអាយុ១៤ ឆ្នាំ មិនអាចត្រូវបានអនុញ្ញាតឱ្យចូលរួមនៅក្នុងសកម្មភាពការងារ កែច្នៃសំរាម និងទាមទារវិធានការ និងជម្រើសគាំទ្រ។</p>	<p>គ្រាន់តាមលក្ខខណ្ឌប័ណ្ណសមធម៌។ លើសពីនេះ ពួកគាត់នឹងទទួលបានព័ត៌មាន និងការបញ្ជូនឈ្មោះទៅកាន់កម្មវិធីជំនួយសង្គមផ្សេងៗ ដែលកំពុងអនុវត្តដោយរាជរដ្ឋាភិបាល ឬអង្គការមិនមែនរដ្ឋាភិបាលក្នុងខេត្ត ដូចជាការប្រើប្រាស់យោជន៍គ្រួសារថ្មី ដែលត្រូវរំពឹងថានឹងចាប់ផ្តើមនៅឆ្នាំ ២០២៣។</p> <ul style="list-style-type: none"> <li>ការរៀបចំការរចនា និងការគ្រប់គ្រងសម្រាប់កន្លែងបោះបង្គោលកាកសំណល់ ធានាសម្រាប់ប្រើប្រាស់ឡើងវិញ និងកន្លែងធ្វើជីកំប៉ុស និងបញ្ចូលវិធានការដើម្បីអនុញ្ញាត ឱ្យក្រុមងាយរងគ្រោះ និងជាពិសេសស្ត្រីអាចធ្វើការបោះបង្គោលកាកសំណល់ប្រើប្រាស់ឡើងវិញជាមួយនឹងលក្ខខណ្ឌការងារ សុខភាព និងសុវត្ថិភាពត្រឹមត្រូវ និងផ្តល់ការបណ្តុះបណ្តាលជំនាញ ដោយរួមទាំងជាមួយនឹងការផ្តោតលើស្ត្រី (ងាយរងគ្រោះ)។</li> </ul> <p><b>វិធានការគាំទ្រសម្រាប់កុមារអាយុទន្លោះពី ១៤ឆ្នាំ ដល់ ១៨ឆ្នាំ</b></p> <p>គម្រោង នេះ នឹងផ្តល់ជំនួយគាំទ្រដល់កុមាររើសសំរាម។ ជំនួយគាំទ្រនេះនឹងមិនត្រូវបានផ្តល់ជាសាច់ប្រាក់ ឬឥណទានទេ ដោយសារការស្តារជីវភាពរស់នៅនឹងមិនត្រូវបានអនុវត្តទេ ដោយសារកុមារគួរតែនៅសាលារៀន។ ជំនួយគាំទ្រនេះ នឹងត្រូវបានផ្តល់ជូនតាមរយៈកម្មវិធីជំនួយសង្គមរបស់រដ្ឋាភិបាល និងអង្គការក្រៅរដ្ឋាភិបាលដែលមានស្រាប់។ ក្នុងករណីដែលកម្មវិធីដែលមានស្រាប់ខ្វះខាត គម្រោងនឹងផ្តល់ការគាំទ្របន្ថែមជាមួយនឹងជម្រើស មួយដោយប្រើប្រាស់ការផ្តល់ហិរញ្ញប្បទានកកសំណង ដែលមានក្នុងគម្រោងនេះ។ ក្រសួងមហាផ្ទៃ និងរដ្ឋបាលថ្នាក់ក្រោមជាតិពាក់ព័ន្ធ ជាអ្នកទទួលបានភារកិច្ចក្នុងការរៀបចំ និងអនុវត្តវិធានការគាំទ្រជីវភាពរស់នៅដល់កុមារ ទាំងនេះ ដូចខាងក្រោម៖</p> <ul style="list-style-type: none"> <li>អនុញ្ញាតឱ្យចូលទៅក្នុងទីលានទុកដាក់សំរាមថ្មី នៅក្នុងដូចជា កន្លែងបោះបង្គោល/ទាញយកធនធានពីសំរាម (បោះបង្គោលដើម្បីទាញយកសំរាមដែលអាចកែ ច្នៃឡើងវិញ) និងកន្លែងធ្វើជីកំប៉ុស ដែលត្រូវធ្វើការក្រោមលក្ខខណ្ឌត្រួតពិនិត្យ ដើម្បីធានាបាននូវលក្ខខណ្ឌការងារ សុខភាព និងសុវត្ថិភាពត្រឹមត្រូវសម្រាប់កុមារទាំងនេះ និងមិនប៉ះពាល់ដល់ការសិក្សារបស់ពួកគេ។ ក្រុមហ៊ុនគ្រប់គ្រងទីលានទុកដាក់សំរាមដែលពាក់ព័ន្ធត្រូវធ្វើការចុះឈ្មោះ និងផ្ទៀងផ្ទាត់ឈ្មោះ ដោយអនុញ្ញាតឱ្យតែកុមារដែលមានឈ្មោះចុះបញ្ជីត្រឹមត្រូវប៉ុណ្ណោះអាចចូល និងរើសសំរាមបាននៅក្នុងទីកន្លែងបោះបង្គោល/ទាញយកធនធាន។ រីឯក្រុមគ្រួសារ ឬមិត្តភក្តិរបស់អ្នកដែលបានចុះបញ្ជី នឹងមិនត្រូវបានអនុញ្ញាតឱ្យចូលឡើយ ប្រសិនបើពួកគេមិនមានឈ្មោះក្នុងបញ្ជីចុះ ឈ្មោះនោះ។</li> </ul>

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
		<ul style="list-style-type: none"> <li>• សម្រាប់កុមារដែលមកពីគ្រួសារពឹងផ្អែកទាំងស្រុង កលើចំណូលពីការរើសសំរាមក្នុងទ្រុងជីវភាពរស់នៅ ហើយដែលមិនទាន់មានប័ណ្ណសមធម៌ គម្រោងនឹងជួយសម្របសម្រួលឱ្យទទួលបានប័ណ្ណសមធម៌តាមយន្តការ នៃការស្នើសុំ (One-Demand IDpoor) នៅពេលដែលពួកគាត់មានលក្ខណសម្បត្តិគ្រប់គ្រាន់តាមលក្ខខណ្ឌគម្រូរបស់ប័ណ្ណសមធម៌។</li> <li>• ធ្វើការវាយតម្លៃលើតម្រូវការសង្គមដោយផ្អែកលើជំរឿន និងការស្ទង់មតិសេដ្ឋកិច្ចសង្គម នៅពេលដែលទីតាំងគម្រោងត្រូវបានជ្រើសរើស និងផ្តល់នូវការគាំទ្រចាំបាច់ជួយដល់កុមារដើម្បីឱ្យបន្តការសិក្សានៅសាលារៀនព្រមទាំងជួយឱ្យពួកគេទទួលបានការគាំទ្រពីកម្មវិធីជំនួយសង្គមផ្សេងៗ ផ្តល់ដោយរដ្ឋាភិបាល ឬអង្គការមិនមែនរដ្ឋាភិបាលដែលមានស្រាប់។</li> <li>• រៀបចំ និងដំណើរការមជ្ឈមណ្ឌលសិក្សាសហគមន៍ (អាចនឹងត្រូវធ្វើឡើងក្នុងបរិវេណសាលាបឋមសិក្សានៅក្បែរទីលានទុកដាក់សំរាម) ដើម្បីឱ្យកុមារទទួលបានការសិក្សាពីបំណិនជីវិតសិល្បៈ កីឡា ភាសាអង់គ្លេស ឬថ្នាក់បំបនបន្ថែមលើមុខវិជ្ជាផ្សេងៗក្រៅម៉ោងសិក្សានៅសាលារដ្ឋ។ រដ្ឋបាលស្រុក ឬរដ្ឋបាលឃុំជាអ្នកគ្រប់គ្រងមជ្ឈមណ្ឌលនេះតាមរយៈវិធីសាស្ត្រ គ្រប់គ្រងសាលាមត្តេយ្យសហគមន៍ និងការណែនាំបន្ថែមពីគម្រោង។ ការរៀបចំ និងដំណើរការមជ្ឈមណ្ឌលសិក្សាសហគមន៍នេះ នឹងត្រូវប្រើប្រាស់កញ្ចប់ថវិកាជំនួយឥតសំណងដែលមាននៅក្នុងគម្រោង។</li> <li>• ផ្តល់ការគាំទ្រក្នុងការចុះឈ្មោះចូលរៀនកម្មវិធីគ្រូបណ្តុះបណ្តាលជំនាញ ដែលផ្តល់ដោយរដ្ឋាភិបាល និងអង្គការមិនមែនរដ្ឋាភិបាលនៅក្នុងខេត្តគោលដៅនីមួយៗ។</li> </ul> <p>វិធានការគាំទ្រសម្រាប់កុមារអាយុក្រោម១៤ឆ្នាំដើម្បីបញ្ឈប់ពួកគេកុំឱ្យចូលទៅកាន់ទីលានទុកដាក់សំរាម ធ្វើ ឬឈប់រើសសំរាមបន្តទៅទៀតនោះគម្រោងស្នើឱ្យមានវិធានការគាំទ្រដូចខាងក្រោម៖</p> <ul style="list-style-type: none"> <li>• ធ្វើការវាយតម្លៃឱ្យបានជាក់លាក់ជាមួយគ្រួសារដែលមានកុមារទៅជាមួយអាណាព្យាបាលនៅទីលានចាក់សំរាម ឬធ្វើការងាររើសសំរាមនៅទីលានចាក់សំរាមបច្ចុប្បន្ន ដើម្បីកំណត់អំពីតម្រូវការសង្គម និងស្ថានភាពរស់នៅប្រចាំថ្ងៃរបស់ពួកគេ។</li> <li>• ធ្វើការត្រួតពិនិត្យជាទៀងទាត់ និងប្តិតប្តិនជាមួយគ្រួសារកុមារដែលពឹងផ្អែកទាំងស្រុងលើប្រាក់ចំណូលដែលបានមកពីការរើសសំរាម និងជួយសម្របសម្រួលឱ្យពួកគេទទួលបានប័ណ្ណសមធម៌ (ID-poor Household) នៅពេលដែលពួកគេមានលក្ខណសម្បត្តិគ្រប់គ្រាន់តាមលក្ខខណ្ឌរបស់ប័ណ្ណសមធម៌។ កិច្ចការនេះនឹងត្រូវបានអនុវត្តដោយគណៈកម្មការកំណត់អត្តសញ្ញាណកម្មគ្រួសារក្រីក្រនៅថ្នាក់ឃុំដោយមានការគាំទ្រពីក្រុមការងារគម្រោងថ្នាក់ខេត្ត។</li> </ul>

ផលប៉ះពាល់	ពិពណ៌នា	វិធានការដោះស្រាយបឋម
		<ul style="list-style-type: none"> <li>• ផ្អែកលើការវាយតម្លៃអំពីតម្រូវការជាក់ស្តែង គម្រោងនឹងជួយសម្របសម្រួលឱ្យកុមារទាំង នោះទទួលបានការគាំទ្រពីកម្មវិធីជំនួយសង្គម នានា ដែលមានស្រាប់ និងកំពុងអនុវត្តដោយរាជរដ្ឋាភិបាល ឬដោយអង្គការមិនមែនរដ្ឋាភិបាលនៅក្នុងខេត្ត គោលដៅនីមួយៗ ដូចជា ការផ្តល់សម្ភារសិក្សា កម្មវិធីអាហារូបករណ៍ កម្មវិធីផ្តល់អាហារនៅតាមសាលារៀន (អនុវត្តដោយកម្មវិធីស្បៀងអាហារពិភពលោក និងក្រសួងអប់រំ យុវជន និងកីឡាក្នុងខេត្តសៀមរាប) ជាដើម។</li> <li>• គម្រោងអាចនឹងប្រើប្រាស់ផ្នែកណាមួយ នៃទីលានចាក់សំរាមចាស់ដែលត្រូវគ្របបិទ និង ស្តារឡើងវិញ (ក្នុងករណីដែលអាចប្រើប្រាស់បាន) ឬដីទំនេរនៅក្នុងសាលាបឋមសិក្សានៅក្បែរទី លានចាក់សំរាម ដើម្បីរៀបចំជាសួនកុមារ និងទីលានលេងកីឡាសម្រាប់ក្មេងៗ ព្រមទាំងជម្រុញឱ្យពួកគេចូលរួមសកម្មភាពអ ប់រំផ្សេងៗទៀត។</li> <li>• ធ្វើការលើកទឹកចិត្តដល់កុមារឱ្យចូលរួមក្នុងសក ម្មភាពអប់រំនានាក្នុងមជ្ឈមណ្ឌលសិក្សាសហគម ន ដូចជា បំណិនជីវិត ភាសាអង់គ្លេស ឬថ្នាក់រៀនបំប៉នបន្ថែមក្រៅម៉ោងសិក្សារបស់ រដ្ឋ។</li> </ul>
<p>ឱកាសការងារ</p>	<p>គម្រោងនេះត្រូវបានគេរំពឹងថា នឹងបង្កើតឱកាសការងារជា ពិសេសសម្រាប់ភូមិនៅជិត កន្លែងចាក់ សំរាម។នេះអាចរួមបញ្ចូលការងារ សម្រាប់ប្រតិបត្តិការប្រចាំថ្ងៃនៅ ឯកន្លែងចាក់សំរាមការតម្រៀប សំណល់នៅកន្លែងប្រមូលយកម កវិញនូវសម្ភារៈកន្លែងធ្វើជីកំប៉ុ សការប្រមូលនិងផ្នែកផ្សេងទៀ តតាមខ្សែសង្វាក់គ្រប់គ្រងកាក សំណល់។</p> <p>ប្រតិបត្តិការនឹងទាមទារការងារ សម្រាប់សាវតា និងគុណវុឌ្ឍិផ្សេងៗ រួមទាំងសម្រាប់អ្នកក្រីក្រដែលមា នជំនាញទាប និងមធ្យម</p>	<ul style="list-style-type: none"> <li>• ធានាឱ្យមានការយល់ដឹងអំពីឱកាសការងារនៅក្នុង សហគមន៍ជុំវិញ និងការពិចារណាសម្រាប់ក្រុមគ្រីក្រ និងងាយរងគ្រោះ។</li> <li>• ការចែករំលែកព័ត៌មានប្រកបដោយគម្លាភាពអំពី ឱកាសការងារដែលបានបង្កើត ជាពិសេសក្នុងតំបន់</li> <li>• ស្វែងរកប្រភពផ្គត់ផ្គង់ និងសម្ភារៈក្នុងស្រុកនៅពេលណាដែលអាចធ្វើទៅ បាន</li> </ul>
<p>ផលប៉ះពាល់ទៅលើកម្លៃអចលនទ្រព្យ</p>	<p>គម្រោងនេះបានកំណត់ជាមុន នូវវិធានការជាច្រើនដែលនឹង ជះឥទ្ធិពលវិជ្ជមានដល់កម្លៃដី ជុំវិញកន្លែងចាក់សំរាមដែល មាន ស្រាប់។</p>	<ul style="list-style-type: none"> <li>• ដំណើរការជ្រើសរើស និងកន្លែងចាក់សំរាមសមស្រប</li> <li>• ការកាត់បន្ថយផលប៉ះពាល់បរិស្ថាន និងសង្គមបាន ត្រឹមត្រូវនៃការសាងសង់ និងប្រតិបត្តិការ ដោយកាត់បន្ថយផលប៉ះពាល់ ដល់សហគមន៍ជិតខាង និងអមជាមួយកម្លៃអចលនទ្រព្យ</li> <li>• រងហ៊ុមព័ទ្ធ និងតំបន់ទ្រនាប់ការពារដែលមានវិធានការប្រឆាំង នឹងផលប៉ះពាល់ដែលមើលឃើញ (រូបរាងជាដើមលើ)</li> </ul>

## 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 in selected municipalities in 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 focus on supporting the improvement of solid waste collection services including waste collection, transport, and recovery, treatment, recycling, disposal and 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 capacity building and technical assistance will focus on the improvement of the performance of the private sector through the provision of transaction advisory services. 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 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 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 (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 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.

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 Facilities -including possible RDF-, Transfer Stations and Composting Plants are also part of the infrastructure financing . 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 safe working conditions and will prevent them from potential health risks.

#### Component 4: Contingent Emergency Response

This zero-dollar component is designed to provide immediate response to an Eligible Crisis or Emergency, as needed. Component 4 (Contingent Emergency Response Component) has zero allocation and no associated financing unless it is triggered.

An Eligible Crisis or Emergency is defined by the World Bank as an event that has caused or is likely to imminently cause a major adverse economic and/or social impact associated with natural or man-made crises or disasters. This may include: (i) cyclone; (ii) earthquake; (iii) storm; (iv) storm surge and strong waves; (v) tornado; (vi) tsunami; (vii) volcanic eruption; (viii) flood; (ix) landslides; (x) forest fires; (xi) drought; (xii) severe weather; (xiii) extreme temperature; (xiv) high winds; and (xv) any natural disaster.

The RGC will seek support from the Bank to select a list of activities for financing under the CERC based on (i) the positive list and the negative list presented in paragraph 34 of the CERC manual, and (ii) priorities identified at the Rapid Needs Assessment of the emergency's impact. The RGC may seek advice from the World Bank in the selection of the Project's component(s) from which funds will be reallocated to CERC, if necessary.

In situations where the CERC is triggered, the credit can be used for emergency response purpose from each implementing agency, based on the Emergency Response Manual annexed in the POM and subject to the World Bank's no objection.

#### 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.

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.

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 ESIA/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, livelihoods and source of income due to sub-projects that would cause physical or economic displacement. 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 restoration.

**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 publicly disclosed on the [website of the Ministry of Interior](#) on February 21, 2022 and a few days later on the website of the [Ministry of Public Works and Transport](#) and consulted early March 2022 (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 was 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).

### **Environmental 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 Penh, 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.

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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.

### **Categories of waste pickers**

Based on field observations, preliminary social economic surveys, focus group discussions, key informant interviews and stakeholder engagement and consultations conducted as part of the preparation of the ESMF and preliminary ESIA for Siem Reap, an approximate total of 273 waste-pickers have been identified in the existing dumpsite in Siem Reap from the villages of Anlung Pir, Phnom Dey, Suong, Rokakambot, Banteay Russey, and Lovea. Most of the waste-pickers came from Phnom Dey.

The preliminary surveys for the waste pickers identified about two-thirds (64.3%) are female, wherein 12% are children aged 14 years old and below (0-14) and 10% are children between 15 to 18 years old. Among the children, there were also some orphans who lived with (extended) families<sup>56</sup>. It was observed as part of the stakeholder engagement and consultations that for part of the children, waste picking was mostly a part-time business done before and after school or due to absence of day-care and after class facilities. Most of children between 14 to 18 years old help their parents with waste picking and packaging when they are free from school, while a small number of children do it to get money for their own expenses.

As per the labor law in Cambodia, the minimum age for any employment is 14, with a child between the age of 14 and 18 only able to be employed or engaged in the following circumstances: (i) work is not considered hazardous, being work that by its nature of the circumstances in which it is carried out is likely to jeopardize the health, safety, or morals of children; (ii) appropriate risk assessment is conducted prior to the work commencing and (iii) no interference with school.

The precise number of waste pickers and breakdown need to be confirmed once Project sites are selected during the preparation of the site-specific Environmental and Social Impact Assessments together with the census and social-economic surveys during the preparation of the Detailed Resettlement Plan and with consultations and choice on the support options and selected types.

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<sup>5</sup> By law, the orphans who are living with extended families or guardians are the family members and registered in the family card. So, they are accessible to social services or supports.

<sup>6</sup> Most of the orphans in Siem Reap are a result of their parents migrating to work in other provinces or countries, leaving them with relatives. There is one orphanage run by the Siem Reap provincial administration. There is a principle in place that when an orphan child is taken in by a poor household, the child will receive (limited) support for basic needs and school materials.

Preliminary information on trends and vulnerable and disadvantaged groups of waste pickers:

- Most individuals interviewed appear to live in houses within the surrounding villages, rather than within the boundaries of the landfill site itself
- Interviewed waste pickers reported as having been working on the site for 10 years or more. The surrounding community therefore is likely to have a strong reliance on the dumpsite and there is a strong sense of attachment to the area
- Income was reported as typically being between 50 USD and 75 USD per month, which would place individuals below the poverty line if waste-picking income is the only source of income, about half of the waste pickers noted that they had other sources of income too. Incomes from waste-picking typically varies substantially and the work is typically seasonal and intermittent. Waste pickers also consist of migrant waste pickers through influx from other areas, depending on job opportunities and economic situation.
- With the almost complete absence of tourists due to COVID-19 in Siem Reap Province, waste volumes have dropped, as well as opportunities for work and income generating activities in the tourism and service sectors
- Headaches were mentioned as common health issues, likely due to the conditions and smell of the open dumpsites.

### **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.

In Kampong Speu, some 36 **waste pickers** were preliminary identified on the existing dumpsite with conditions similar as in Siem Reap, no specific break down in age groups is available. Also in Kampong Speu, women and children were observed and health issues and income insecurity as well as migrant workers were mentioned as part of the stakeholder engagement and consultations. It was observed that for part of the children, waste picking was a part-time activity done before and after school or due to absence of day-care facilities.

The precise number of waste pickers and breakdown need to be confirmed once Project sites are selected during the preparation of the site-specific Environmental and Social Impact Assessments together with the census and social-economic surveys during the preparation of the Detailed Resettlement Plan.

## **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.

In Kandal, some 40 **waste pickers** were identified on the existing dumpsite with conditions similar as in Siem Reap, no specific break down in age groups is available. As in Siem Reap and Kampong Speu, women and children were observed and health issues and income insecurity. It was also observed that for part of the children, waste picking was a part-time activity done before and after school or due to absence of day-care facilities.

The precise number of waste pickers and breakdown need to be confirmed once Project sites are selected during the preparation of the site-specific Environmental and Social Impact Assessments together with the census and social-economic surveys during the preparation of the Detailed Resettlement Plan.

### **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 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 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 1: Advantages, Disadvantages, and Preliminary Assessment of Option 1: Rehabilitation of the Existing Dumpsite**

Advantages	Disadvantages	Preliminary Assessment
<ul style="list-style-type: none"> <li>• Existing site already zoned for landfill use and clayey soil material present.</li> <li>• Additional area available</li> </ul>	<ul style="list-style-type: none"> <li>• Communities in relatively close distance (&lt;1.0 km)<sup>7</sup></li> <li>• Part of the community has complained and</li> </ul>	<ul style="list-style-type: none"> <li>• 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</li> </ul>

<sup>7</sup> Cambodian government guidelines on selection of landfill sites (2016) describe a distance to communities of >1 km, while World Bank landfill siting criteria indicate 250 meters.

Advantages	Disadvantages	Preliminary Assessment
<ul style="list-style-type: none"> <li>• Rehabilitation of the current site may yield further space</li> <li>• Existing dumpsite will require closing in any case, therefore cost savings can be made through continued use and site extension</li> <li>• Good road access and well located from city service area so that waste haul travel time is within 30 minutes</li> <li>• Access to water and electricity utilities</li> <li>• No flood risk or near environmentally sensitive receptors or cultural heritage sites</li> <li>• Not within city expansion area for commercial/residential zones</li> <li>• Current pollution will be resolved through rehabilitation</li> <li>• 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</li> </ul>	<p>requested site closure.</p> <ul style="list-style-type: none"> <li>• 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</li> </ul>	<p>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 ESF<sup>8</sup>.</p> <ul style="list-style-type: none"> <li>• Current environmental and public health issues will be addressed through the Project (leachate treatment; smell; noise; piped clean water supply for communities; etc.)</li> <li>• 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.</li> <li>• Community inhabitants may gain additional income through jobs created at the landfill, material recovery, and composting facility.</li> <li>• Cost savings would be made through shared site management systems required for closure and extension (leachate treatment system, gas treatment, access control)</li> <li>• A more elaborate comparison between options and preliminary environmental and social impacts is included in the preliminary ESIA</li> </ul>

### *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 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 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.

<sup>8</sup> 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.

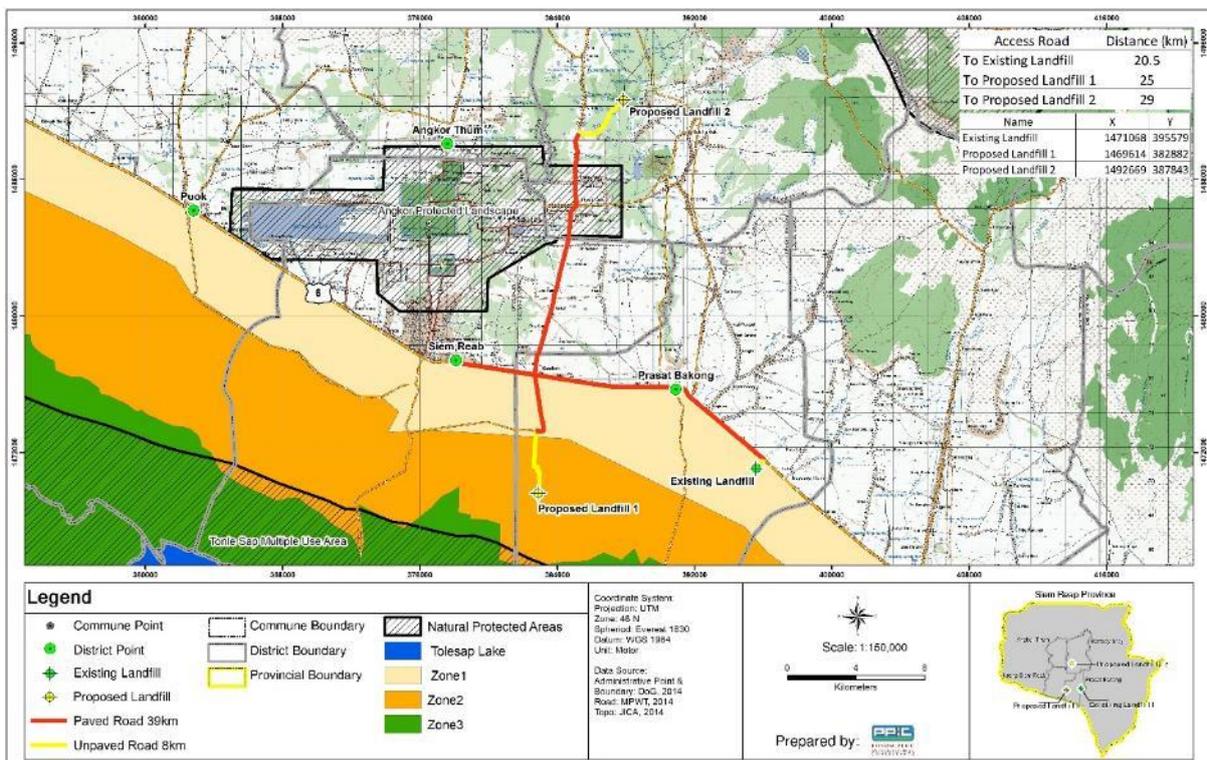


**Figure 2: Potential new Sanitary Landfill Site Option in Trapeang Tim Village, Siem Reap**

*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 2: 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"> <li>• 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</li> <li>• Large area (+50Ha) of public land available.</li> <li>• Currently &gt;2 km away from the nearest residential settlement.</li> <li>• The site is flat and appears to be underlain by a clayey soil material.</li> <li>• Planned ring-road construction, site access will be good,</li> <li>• suitable distance (&gt;11 km) from city center.</li> </ul>	<ul style="list-style-type: none"> <li>• High value residential city expansion area to the North,</li> <li>• Tonle Sap UNESCO biodiversity reserve and restricted development zone (South). The Tonle Sap Lake is the largest freshwater lake in Southeast Asia and designated as a Biosphere Reserve by UNESCO in 1997 due to its high biodiversity</li> <li>• The existing site access is in poor condition and passes through dense residential development.</li> <li>• Shallow groundwater and potential flood risk area.</li> <li>• During the wet season, leachate discharge will need to be stored or pumped offsite.</li> <li>• High social costs and risks as current waste-pickers would lose access to recyclables</li> <li>• Community Fishery present</li> </ul>	<ul style="list-style-type: none"> <li>• The potential new site has advantages from being co-located with the proposed new WWTP and for having an extensive area (+50 ha) available.</li> <li>• 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 the Tonle Sap Biosphere Reserve, being in a flood risk area with anticipated issues for (gravity) discharge of leachate in the wet season, and due to the impacts on waste pickers and workers at the existing site.</li> </ul>

## 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 3: 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"> <li>• The site has good access to the nearby main (paved) NR44 road and the solid waste service area.</li> <li>• No reported flooding and not close to any environmentally sensitive receptors or cultural heritage sites.</li> <li>• The site is underlain by heavy clay/sands/silts with low permeability and good engineering construction properties.</li> </ul>	<ul style="list-style-type: none"> <li>• Immediately adjacent to a new residential development within a high value commercial and residential development zone.</li> <li>• There is no further land available for expansion around existing site.</li> <li>• 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 measures.</li> </ul>	<ul style="list-style-type: none"> <li>• The existing dumpsite is located within a high value residential and industrial development zone with insufficient space for extension.</li> <li>• Preliminary conclusion is that most suitable option is to close the site for waste disposal and potentially develop a transfer station, material recovery and composting facility in this location as the existing site has insufficient space for the required extension.</li> <li>• 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.</li> <li>• 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 restoration measures</li> <li>• Further analysis to be based on ongoing site identification process</li> </ul>

**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 Prekho Village, Sangkat Prekho, Kandal**

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

**Table 4: 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"> <li>The existing site is already used as a landfill and will require further investment for rehabilitation.</li> </ul>	<ul style="list-style-type: none"> <li>Site is less than 1.0 km from residential settlements, which are rapidly expanding and is expected to reach the boundaries</li> </ul>	<ul style="list-style-type: none"> <li>Preliminary Conclusion: Closure with rehabilitation of existing dumpsite – including small incinerator- appears to be the</li> </ul>

Advantages	Disadvantages	Preliminary Conclusions
<ul style="list-style-type: none"> <li>• The site has good access to a nearby main (paved) road and city service area.</li> <li>• Additional land around the site is available.</li> <li>• 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.</li> <li>• The site is not reported as prone to flooding and generally not close to environmentally sensitive receptors or cultural heritage sites.</li> <li>• The site (from initial investigations) is underlain with impermeable clays</li> </ul>	<p>of the waste disposal area in the short future; community has complained of being directly impacted.</p> <ul style="list-style-type: none"> <li>• Site has shallow groundwater.</li> <li>• Current open dump has no environmental controls and will require extensive rehabilitation.</li> <li>• The incinerator has no environmental controls.</li> <li>• Current waste 'cells' have no liner, leachate collection or treatment, leading to potential pollution of groundwater.</li> <li>• A closure and remediation of the existing site would have higher 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 livelihood restoration measures.</li> </ul>	<p>most suitable option as there is insufficient space for continued use as waste disposal area due to the rapidly expanding community in direction of the area.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• The existing dumpsite is within a high value development zone.</li> <li>• The current site can be rehabilitated back to a point where it is suitable for future residential / industrial development with substantial revenues.</li> <li>• 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 restoration measures</li> <li>• Further analysis based on alternative landfill site options</li> </ul>

***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 6: 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 6: Environmental, Social and Public Health Concerns at the Existing Dumpsites**

<b>Environmental</b>	<ul style="list-style-type: none"> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• 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</li> <li>• 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.</li> <li>• 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</li> <li>• 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.</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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</li> </ul>

	<p>burning of waste and vehicle exhaust; noise pollution from trucks; and pollution of water sources. .</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>
<b>Public and Community Health and Safety and OHS</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Lack of training, awareness, and provision of safety equipment (PPE) put both sanitation staff and waste-pickers at risk.</li> <li>• Illegal dumping of hazardous waste, in particular hospital waste, on the landfill put the health and safety of workers and waste-pickers at risk.</li> <li>• Poorly operated transfer stations and transport equipment pose risks to health and safety of sanitation workers and waste-pickers.</li> </ul>

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 7: Summary of Preliminary Ratings of Environmental and Social Risks**

<b>Activity</b>	<b>Preliminary Risk Rating</b>
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)

### **Vulnerable and disadvantaged groups: waste pickers**

With the transformation of open waste dumpsite into sanitary landfills, there is a risk of loss of income of waste pickers at the existing dumpsites in case of losing access to waste resources. This can have livelihood impacts on waste pickers, specifically for those waste pickers who do not have other sources of income.

These risks will be mitigated through ensuring continued access to waste resources for all adult waste pickers under improved Occupational, Health and Safety conditions in the Material Recovery Facilities and providing priority opportunities to apply for suitable jobs within the landfill management company. For waste pickers who are solely depending on waste picking in terms of livelihoods and for child waste pickers, additional support measures are applicable. The specific mitigation measures for different groups of waste pickers are outlined below.

*Avoiding disruptions to waste-based livelihoods as well as additional support measures for adult waste pickers > 18 years*

The project will allow adult waste pickers to continue sorting and recovering waste in the material recovery facilities, under improved working (Occupational, Health and Safety) conditions and with control measures such as registration to avoid influx. In addition, the Project will provide adult waste pickers priority to apply for a suitable job in the landfill management company and provide support for training in necessary skills. These are the main measures to avoid Project caused livelihood impacts due to loss of access to waste resources. In addition, additional support measures apply. Key measures are as follows:

- *To avoid disruptions to waste-based livelihoods measures:* allow adult waste pickers access to recyclables (sorting/material recovery facility) and composting facility of the new landfill in accordance with occupational health and safety guidelines. The landfill management company will undertake registration and age verification, and only those who are registered waste pickers on the basis of a census to be carried once the site is selected for the Project can enter and engage in waste sorting in the sorting/material recovery facility. Unregistered relatives or family members of waste pickers will not be allowed. This will ensure that the Project will not remove access to waste resources and avoid livelihood impacts and at the same time managing influx.
- *Additional measures to support vulnerable and disadvantaged group of waste pickers-* specifically those who are solely dependent on waste picking in terms of livelihoods and do not have IDpoor equity cards yet- consist of providing assistance to obtain equity cards through the on-demand IDPoor program<sup>9</sup> when the program's selection criteria are met. In addition, waste pickers will receive information and referral to other existing social support programmes provided by Government agencies or existing NGOs in the respective province, such as the new Family Benefits package which is expected to start during 2023<sup>10</sup>

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<sup>9</sup> The IDpoor program aims to achieve the integration of identification of poor households as a routine task of Commune Councils and their support structures and use as a tool for targeting services and assistance to poor households. The whole process of application and processing through the on-demand IDPoor program takes about one month. This can start as soon as sites are selected.

<sup>10</sup> The new Family Benefits Package has as objectives (i) to provide comprehensive and adequate social assistance covering families (ii) improve the accessibility and coverage of social assistance benefits and (iii) strengthen the institutional framework

- The design and management arrangements for the Material Recovery Facilities and composting facilities will include measures to allow vulnerable groups and specifically woman to recover waste with proper Occupational, Health and Safety conditions and provide skill training including with focus on (vulnerable) women.

*Support measures for children between 14-18*

The project will provide support to child waste pickers. This support will not be provided as cash or credit as livelihood restoration would not apply as children should be in school. Support will be provided through existing government social support program and existing NGOs. In case where existing programs are lacking, the Project will provide additional support with an option to use Grant financing under this project. The Ministry of Interior and relevant provincial and municipal authorities are the responsible institutions for organizing and implementing measures to provide support measures of these children as following:

- Provide free access to new landfill site including sorting/material recovery facility (to sort waste to extract recyclables) and composting facility to work under supervised conditions to ensure proper occupational, health and safety conditions for these children to engage in non-hazardous work and where it will not affect their education. The concerned landfill management company will undertake registration and age verification, and only those who are registered waste pickers on the basis of a census to be carried out once the Project sites are selected, can enter and undertake waste sorting in the sorting/material recovery facility. Their relatives, family members or friends will not be allowed if they don't have their name in the registration list.
- For those children waste pickers whose families' income is solely dependent on waste picking in terms of livelihoods and haven't received an equity card yet, the project will assist the family in obtaining IDpoor equity cards according to the established mechanism (On-Demand ID Poor) when meeting the eligibility criteria.
- Conduct social need assessment on the basis of census and social economic surveys once the Project sites are selected and provide necessary support that help child waste pickers continue going to school<sup>11</sup> and refer the child waste pickers to existing social programs provided by government or NGOs.
- Organize and operate a community learning center (can be operated in existing primary schools near existing waste disposal sites) for children to lean life skills, English or remedial classes outside of school times. Administration of district or commune manages this center through the community preschool management approach and further guidance from the project. The organizing and functioning this community learning center could make use of grant financing for the project.
- Support the enrollment in Vocational Training Programs of government and existing NGO programs in each target provinces.

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for social assistance delivery. This program is foreseen to support cash transfer programs for mothers and children in primary and lower and upper secondary school. The new Family Benefit Package is the successive program of the cash transfer program that was instituted by the Government during COVID-19 and foreseen to become effective in the course of 2023.

<sup>11</sup> School fee support would not be needed as according to article 68 of the Cambodian constitution, all Cambodian nationals have the right to receive free education from primary school to secondary school.

*Support measures for children under 14-years of age.*

To keep children under 14 years outside the new landfill and stop working, the following support measures are applied:

- Conduct an extensive social assessment with families who have children accompanying or working on the current dumpsite to identify their social needs and living conditions.
- Closely monitor children's families whose incomes depend solely on waste picking and assist them in getting Equity Cards (ID-Poor Household) when they meet the eligibility criteria. This will be carried out by the ID Poor committee at the commune level with support from Project implementation entities at the provincial level.
- Based on the needs assessment, the Project will facilitate identified children to get existing social support programs implemented by the government or NGOs in each target provinces including learning material, scholarship, food program provided at school (implemented by World Food program and MoEYS in Siem Reap).
- The Project can use parts of closed and rehabilitated waste disposal sites (in case available) or free space in primary school near disposal sites to organize these as playgrounds and sports facilities.
- Encourage children to join education activities in community learning center such as life skill, English, or extracurricular classes outside public school time.

Avoiding disruptions to waste-based livelihoods measures through continued access to waste resources as well as additional support measures will be externally monitored. 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 include specific attention to the detailed design and site-specific environmental and social assessment for the material recovery facilities and determination of non-hazardous categories of work, specifically (i) the purpose of the material recovery and composting facilities is not as standard generic jobs or industries but as community facilities to support the continuation of access to waste resources; (ii) the amount of mechanization and machinery as part of these facilities will be detailed in the detail design and site-specific ESIA, which will make the informed and consulted determination on the type of opportunities and restrictions for the 14-18 years' age category. Types of non-hazardous work that could be considered and will be defined as part of the site-specific ESIA are: further segregation and packaging of first order sorted recyclables, cleaning of rest and cleaning facilities, non-machinery work with the organic compost etc. The determination and conditions for non-hazardous work for children between 14-18 will abide by ILO standards and good international industry practice and the waste management company in charge of the management and operation of the landfill will be responsible for age verification and access and supervise the community recovery facilities for appropriate OHS conditions for which specific OHS/hazard risk assessment will be done as part of the site-specific ESIA. Furthermore, the facility designs will take into account the safety and

security of women and children (such as proper lighting, gender-segregated facilities); and trainings will include awareness raising on sexual exploitation and abuse/sexual harassment, as well as information on lodging complaints and reaching out to service providers.

This will be determined during the first year of the project implementation and be accompanied with the preparation of the Detailed Resettlement Plan and census and cut-off date. The preliminary risk rating will also be reconsidered at this stage.

For Siem Reap, a preliminary ESIA is 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 site-specific 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 are included under Component 1 and Component 2. Under Component 1, support will be provided for the development and strengthening of the legislative, regulatory, policy and institutional framework related to solid and plastic waste management, and for building capacity of national institutions involved in the waste management. Component 2 will provide assistance to building capacity of Participating Municipalities and districts in waste management, planning and in development of waste information, financial and geospatial systems. The capacity building program will also include strengthening public outreach, awareness raising and citizen engagement. No technical assistance is foreseen that may assist in preparation of future infrastructure investments outside the infrastructure investments financed under Component 3 of the Project. TA activities under Component 2, focusing on capacity building activities, information systems and communications and outreach are expected to cause negligible to low social or environmental risks and impacts. Types of TA under Component 1, focusing on 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, promotion of alternative products, or others. The risks and impacts of these type of TA activities are preliminary considered as low (for capacity building TA) to preliminary moderate (for policies and regulations) based on the ESF risk classification.

TA proposed under Component 1 and Component 2 does not include preparation of future infrastructure investments (besides the infrastructure investments financed under Component 3 of the Project and subject to their own extensive ES due diligence). It focuses on TA support to capacity building activities, support for policies and regulations, information systems and communications and outreach with minimum or low social or environmental risks and impacts.

Where the TA under C1 and C2 supports solid waste and plastics policies and regulations which may lead to downstream activities –such as promoting plastic waste recycling, composting, reduction of plastic packaging, and promotion of alternative products – the impacts of such activities are generally positive, and E&S risks associated with them preliminary indicated as low to moderate based on the ESF risk classification.

The TORs for the TA activities will be developed by the Client in the first and second year of Project Implementation, but E&S risks screening has been undertaken and summarized in “risks and impact table’ referenced below.

<b>Component 1</b>	<b>Down-stream risks</b>	<b>Potential impacts with regard to different ESSS</b>	<b>Mitigation measures</b>
Activities related to strengthening regulations and implementing agency’s capacity for planning, management and monitoring of private sector waste companies as well as development of design guidelines (Type 3)	Low	Positive environmental impacts for resource efficiency (ESS3) and community health and safety (ESS4) and environmental impact (ESS1)	Potential adverse environmental and social risks, if any, will be considered integrally as a part of their preparation.
Policy development and implementation related to public awareness, education, outreach, citizen engagement and cleanup (Type 3)	Low	Positive environmental impacts for resource efficiency (ESS3), community health and safety (ESS4) and environmental impact (ESS1)	Potential adverse environmental and social impacts and risks, if any, will be considered integrally as a part of their preparation.
Policy, standards or guidelines development related to plastics, including recycling and Extended Producer Responsibility (EPR) and deposit-refund systems (Type 2)	Moderate	Positive environmental impacts for resource efficiency (ESS3), community health and safety (ESS4) and environmental impact (ESS1); assessment of potential downstream impacts for waste pickers (ESS1)	Analysis of integration of informal waste collectors in the formal recycling / EPR/deposit refund schemes with proper occupational, health and safety measures and opportunities for vulnerable and disadvantaged groups as part of the TA and stakeholder consultations and engagement.
Policy development and database establishment for national waste information system for planning and management of waste (Type 3)	Low	Positive environmental impacts for resource efficiency (ESS3) and community health and safety (ESS4)	No specific mitigation measures required
Policy development and guidelines related to cost calculation of waste , (household) waste fees and landfill gate fees and reporting (Type 2)	Moderate	Possible negative downstream impacts on households in case of increase of tariffs ; social impacts (ESS1), positive environmental impacts (ESS1)	Affordability analysis will be undertaken as part of the policy analysis and guidelines development, including stakeholder consultations and engagement.
<b>Component 2</b>			
Operational municipal SWM management support and municipal strengthening (Type 3)	Low	Positive environmental impacts for resource efficiency (ESS3) and environmental impacts (ESS1) and community health and safety (ESS4)	No specific mitigation measures required
Enhancing economic opportunities and support for poor and vulnerable groups, specifically child waste pickers. (Type 3)	Low	Positive impacts for community health and safety (ESS4), resource efficiency (ESS3) and social impacts (ESS1).	These activities are the mitigation measures to enhance economic opportunities and support for vulnerable groups for the investments in landfills and community recovery facilities under Component 3
Transaction Advisory support to participating municipalities in waste companies monitoring and tariff model (Type 2 and 3)	Moderate	Positive impacts for community health and safety (ESS4), resource efficiency (ESS3) and environmental impacts (ESS1), Possible negative downstream impacts on	Potential adverse environmental and social impacts and risks, if any, will be considered integrally as a part of their preparation, specifically affordability analysis and accompanying stakeholder consultations and engagement

		households in case of increase of tariffs; social impacts (ESS1), positive impacts for labor and working conditions (ESS2).	
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For the preliminary considered moderate risks, these will be further assessed during project implementation specifically for the TA activities focused on policies and regulations. This includes ensuring ToRs/scope for TA support will include adequate assessment of environmental and social implications in a manner consistent with the ESSs and will be subject to review by the World Bank to ensure that relevant ESSs are mainstreamed into the project activities. This extends to aspects of ESS1 for inclusion of vulnerable groups and aspects of ESS10 for effective and inclusive stakeholder engagements, where appropriate and relevant.

### ***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**

<b>Impact</b>	<b>Description</b>	<b>Preliminary mitigation measures</b>
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"> <li>• Monitoring of air quality in residential areas during construction phase to be put in place</li> <li>• Limit construction hours (day times)</li> <li>• Stabilize the exposed surfaces</li> <li>• Minimize activities that suspend dust particles</li> <li>• Apply water to the areas to be excavated, loading and unloading areas and unpaved roads</li> <li>• Develop a wheel wash at the entrance to public roads or exit of the landfill construction site</li> <li>• Implement speed controls on-site</li> <li>• Maintain enough loading capacity of lorries and barges to avoid spillage</li> <li>• Cover soil stockpiles with erosion control blankets</li> <li>• Use hoarding to avoid wind-blown dust</li> <li>• Apply good construction practices</li> </ul>
Noise	Civil works will be required for closing/rehabilitation/extension of landfill, development of new landfill, MRF,	<ul style="list-style-type: none"> <li>• Generally, it is expected that the noise will not be high enough to interrupt sleep or disrupt normal activity.</li> <li>• 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.</li> </ul>

	composting facility, access road, and other facilities. Construction activities can cause temporary noise pollution.	<ul style="list-style-type: none"> <li>• Optimize the use of machines and noisy equipment</li> <li>• In case of receiving complaints from neighboring areas regarding noisy operations acoustic barriers can be placed</li> <li>• Construction works should be stopped at night-time;</li> </ul>
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"> <li>• Application of cover for the waste at existing dumpsite for both options.</li> <li>• Installation of landfill gas treatment system</li> <li>• Leachate treatment system</li> <li>• Use of odour counter actant and/or masking sprays in case odor is a chronic problem.</li> </ul>
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"> <li>• Close monitoring and enforcement of road regulations</li> <li>• Training for drivers</li> <li>• Time regulations for road activities</li> <li>• Usage of access roads outside of settlement areas</li> <li>• Reporting system for residents</li> </ul>
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 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"> <li>• 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).</li> <li>• Ensure that the height of the spoil will not cause unaccepted visual impacts to adjacent areas</li> <li>• 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.</li> <li>• Use excavated soil for coverage for closing of old cells (re-cultivation layers of the final cover)</li> <li>• 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</li> </ul>
Soil erosion and risks or UXOs	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  There is a risk of unexploded UXOs	<ul style="list-style-type: none"> <li>• Installing erosion matting over the stockpiles if further surface compaction and/or seeding fails</li> <li>• Protect the stockpiles from flooding and run-off by placing berms or equivalent around the outside where necessary</li> <li>• Protection of most susceptible soil surfaces</li> <li>• Protection of drainage channels</li> <li>• Survey of UXOs</li> </ul>
Topsoil losses	Topsoil losses may occur during the construction works mobilization in relation with setting camps, materials plants	<ul style="list-style-type: none"> <li>• Storage of topsoil in stockpiles</li> <li>• Storage locations that prevent the stockpiles being compacted by vehicle movements or contaminated</li> <li>• Segregation from subsoil stockpiles</li> <li>• No storage where there is a potential for flooding</li> <li>• No storage close to streams, subject to local topography</li> </ul>

	and other related infrastructure	
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"> <li>• Minimize land disturbance</li> <li>• Manage run-off and sediment exiting to disturbed areas</li> <li>• Manage drainage within the disturbed areas</li> <li>• Manage ground cover</li> <li>• Good construction quality assurance procedures and protocol during installation of the basal, lateral and top containment engineering systems</li> <li>• Leachate treatment</li> </ul>
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"> <li>• Provide for disposal facilities with local authorities. Allow local communities to utilize any excess rock, which may be left following reuse</li> <li>• All waste from the construction site will be disposed of in accordance with local environmental regulations and at sites approved by the local authorities</li> <li>• Hazardous wastes (contaminated rags; oil residue, paints etc.) will be disposed as agreed with local executive and environmental authorities</li> <li>• The personnel involved in the handling of hazardous and non-hazardous waste will undergo specific training in waste handling, waste treatment and waste storage</li> </ul>
Landscape disturbance/Visual and aesthetic impacts	<p>The rehabilitation of existing sites is expected to cause positive impact on landscapes which are currently disturbed in all cities by unregulated landfills</p> <p>Construction also has negative aesthetic impacts (dust, movement of heavy machinery, quarrying and other extraction of construction materials, stockpiles, etc)</p>	<ul style="list-style-type: none"> <li>• Adequate site selection through thorough site assessment process</li> <li>• Limit the construction area according to the planned detailed engineering design</li> <li>• Location outside of zoning of vital habitats and ecosystems</li> <li>• monitoring of species presence and pollution</li> <li>• flood protection measures, if needed</li> <li>• Construction of a buffer zone with tree screening</li> </ul>
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"> <li>• Adequate site selection through thorough site assessment process</li> <li>• Limit the construction area according to the planned detailed engineering design</li> <li>• leachate collection and treatment system</li> <li>• installation of lining systems</li> <li>• zoning outside of vital habitats and ecosystems</li> <li>• monitoring of species presence and pollution</li> <li>• flood protection measures</li> </ul>
Cultural heritage	Potential impacts on cultural heritage sites particularly in Siem Reap on Angkor sites.	<ul style="list-style-type: none"> <li>• 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</li> </ul>

**Environmental Risks – Operation phase**

<b>Impact</b>	<b>Description</b>	<b>Preliminary mitigation measures</b>
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"> <li>• Lining and Leachate Collection System</li> <li>• Waste placement and daily cover</li> <li>• Leachate Reduction</li> <li>• Leachate Treatment Plant</li> <li>• Ensure access to safe water supply for local communities</li> <li>• (Ground)water quality monitoring</li> </ul>
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"> <li>• Thorough site assessment process to prevent sites to be located in sensitive areas</li> <li>• Daily waste coverage</li> <li>• Leachate collection and treatment system</li> <li>• Installation of lining systems</li> <li>• Zoning of vital habitats and ecosystems</li> <li>• Monitoring of species presence and pollution</li> <li>• Flood protection measures</li> <li>• Not accepting hazardous waste</li> </ul>
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"> <li>• Landfill Gas Collection and Treatment, including potential to use for cooking gas for neighboring communities</li> <li>• Composting facilities and opportunities for compost use for neighboring communities.</li> </ul>
Odor	Existing sites in all three cities cause significant odour due to operations as open dumpsite. Project activities will significantly reduce odour compared to current status.	<ul style="list-style-type: none"> <li>• Daily waste cover</li> <li>• Installation of gas collection and treatment system</li> <li>• Material recovery and composting facility</li> </ul>
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"> <li>• Municipal regulations for landfill operation to provide a list of acceptable and nonacceptable waste. Non-acceptable waste needs to be strictly forbidden from admission</li> <li>• Awareness to avoid a mixing of waste</li> <li>• All workers to be provided with protection equipment, training in waste handling, and strict supervision.</li> <li>• Prepare emergency response plan</li> </ul>
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"> <li>• Daily waste coverage</li> <li>• Windbreak trees</li> <li>• Fencing of site and buffer zone</li> </ul>

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"> <li>• 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.</li> <li>• Final capping system be installed progressively through time after the waste has been placed to its ultimate level over each cell or portion thereof.</li> <li>• Establishment of impermeable linings may be considered, as well as development of alternative water sources for surrounding residential a</li> <li>• Measures to minimize remaining leachate after closure will depend on detailed assessments on groundwater pollution, soil permeability, and impacts on any nearby residential areas.</li> </ul>
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### 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; impacts on landowners; impacts on nearby communities.</p> <p>Impacts due to insufficient applicable OHS procedures</p>	<ul style="list-style-type: none"> <li>• 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 in the Material Recovery Facilities.</li> <li>• Significant attention to OHS procedures and supervised by supervising engineer</li> <li>• Meaningful consultations with neighbouring communities, waste pickers and other potential affected people a potential site</li> <li>• Development of Detailed Resettlement Plan and detailed monitoring of implementation.</li> <li>• Ensure awareness of job opportunities within surrounding communities</li> <li>• To avoid disruptions to waste-based livelihoods measures: allow adult waste pickers access to recyclables (sorting/material recovery facility) and composting facility of the new landfill in accordance with occupational health and safety guidelines. The landfill management company will undertake registration and age verification, and only those who are registered waste pickers on the basis of a census to be carried out once Project sites are selected can enter and engage in waste sorting in the sorting/material recovery facility. Unregistered relatives or family members of waste pickers will not be allowed. This will ensure that the Project will not remove access to waste resources and avoid livelihood impacts and at the same time managing influx.</li> </ul>
Vulnerable and disadvantaged groups of waste pickers,	Additional measures for vulnerable and disadvantaged groups of waste pickers, specifically child waste pickers	<ul style="list-style-type: none"> <li>• Additional measures to support vulnerable and disadvantaged group of waste pickers- specifically those who are depending solely on waste picking in terms of livelihoods and do not have IDpoor equity cards yet- consist of providing assistance to obtain equity cards</li> </ul>

<p>specifically child waste pickers</p>	<p>As per the labor law in Cambodia, the minimum age for any employment is 14, with a child between the age of 14 and 18 only able to be employed or engaged under certain circumstances (see on the right)</p> <p>Children waste pickers specifically under 14, cannot be permitted to participate in waste recycling activities and will require support measures and options.</p>	<p>through the on-demand IDPoor program when the program’s selection criteria are met. In addition, waste pickers will receive information and referral to other existing social support programmes provided by Government agencies or existing NGOs in the respective province, such as the new Family Benefits package which is expected to start during 2023</p> <ul style="list-style-type: none"> <li>• The design and management arrangements for the Material Recovery Facilities and composting facilities will include measures to allow vulnerable groups and specifically woman to recover waste with proper Occupational, Health and Safety conditions and provide skill training including with focus on (vulnerable) women.</li> </ul> <p>Support measures for children between 14-18</p> <p>The project will provide support to child waste pickers. This support will not be provided as cash or credit as livelihood restoration would not apply as children should be in school. Support will be provided through existing government social support program and existing NGOs. In case where existing programs are lacking, the Project will provide additional support with an option to use Grant financing under this project. The Ministry of Interior and relevant provincial and municipal authorities are the responsible institutions for organizing and implementing measures to provide support measures of these children as following:</p> <ul style="list-style-type: none"> <li>• Provide free access to new landfill site including sorting/material recovery facility (to sort waste to extract recyclables) and composting facility to work under supervised conditions to ensure proper occupational, health and safety conditions for these children to engage in non-hazardous work and where it will not affect their education. The concerned landfill management company will undertake registration and age verification, and only those who are registered waste pickers on the basis of a census, to be carried out once Project sites are selected, can enter and undertake waste sorting in the sorting/material recovery facility. Their relatives, family members or friends will not be allowed if they don’t have their name in the registration list.</li> <li>• For those children waste pickers whose families’ income is solely dependent on waste picking in terms of livelihoods and haven’t received an equity card yet, the project will assist the family in obtaining IDpoor equity cards according to the established mechanism (On-Demand ID Poor) when meeting the eligibility criteria.</li> </ul>
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	<ul style="list-style-type: none"> <li>• Conduct social need assessment on the basis of census once the Project sites are selected and provide necessary support that help child waste pickers continue going to school and refer the child waste pickers to existing social programs provided by government or NGOs.</li> <li>• Organize and operate a community learning center (can be operated in existing primary schools near existing waste disposal sites) for children to learn life skills, English or remedial classes outside of school times. Administration of district or commune manages this center through the community preschool management approach and further guidance from the project. The organizing and functioning this community learning center could make use of grant financing for the project.</li> <li>• Support the enrollment in Vocational Training Programs of government and existing NGO programs in each target provinces.</li> </ul> <p>Support measures for children under 14-years of age.</p> <p>To keep children under 14 years outside the new landfill and stop working, the following support measures are applied:</p> <ul style="list-style-type: none"> <li>• Conduct an extensive social assessment with families who have children accompanying or working on the current dumpsite to identify their social needs and living conditions.</li> <li>• Closely monitor children’s families whose income depend solely on waste picking and assist them in getting Equity Cards (ID-Poor Household) when they meet the eligibility criteria. This will be carried out by the ID Poor committee at the commune level with support from Project implementation entities at the provincial level.</li> <li>• Based on the needs assessment, the Project will facilitate identified children to get existing social support programs implemented by the government or NGOs in each target provinces including learning material, scholarship, food program provided at school (implemented by World Food program and MoEYS in Siem Reap).</li> <li>• The Project can use parts of closed and rehabilitated waste disposal sites (in case available) or free space in primary school near disposal sites to organize these as playgrounds and sports facilities.</li> <li>• Encourage children to join education activities in community learning center such as life skill, English, or extracurricular classes outside public school time.</li> </ul> <p>Avoiding disruptions to waste-based livelihoods measures through continued access to waste</p>
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		resources as well as additional support measures will be externally monitored <sup>12</sup> .
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"> <li>• 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.</li> </ul>
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"> <li>• Supervision of the construction works and clear obligations and code of conduct for firms.</li> <li>• Regular information on progress and Environmental and Social compliance for local communities</li> <li>• Establishing a clear grievance redress system</li> <li>• Monitor labor management procedures</li> <li>• Communicate information about the hours of construction with the local population</li> <li>• Supervise application of OH&amp;S regulations and code of conduct on SEA/SH</li> <li>• Public hearings and meaningful consultations.</li> <li>• Restriction from access to the construction site</li> </ul>

### Social Risks – During operations phase

Impact	Description	Preliminary mitigation measures
Community Health and Safety, livelihood restoration 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 improve livelihood continuation for waste picker workers due to improved OHS practices.	<ul style="list-style-type: none"> <li>• 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</li> <li>• Landfill gas collection and composting to remove larger part of the organic fraction</li> <li>• Leachate collection and treatment</li> <li>• Lining system and daily waste cover and in case of closure final waste cover</li> <li>• Fencing of site, registration procedures to only allow access to registered waste pickers per census</li> <li>• Integration of waste pickers into the waste material recovery and composting facilities through provision of PPE, training and adherence to OHS procedures</li> </ul>

<sup>12</sup> Monitoring can include the following: (i) monitoring of entry of eligible waste pickers in community Material Recovery and composting facility on the basis of the census and site-specific ESIA, (ii) job opportunities and contractual employments of waste pickers with landfill company; (iii) monitoring/coordination of the additional measures for the child waste pickers, specifically after school classes and other items that may come out of need assessment (iv) monitoring of waste pickers application and eligibility for IDpoor card; (iv) number of training courses and skill development; (v) OHS working conditions adults and specific 14-18 age category (as per definitions and conditions of the site specific ESIA); (vi) handling complaints and grievances. Indicators will be finalized as part of site-specific ESIA based on needs assessment in consultation with waste pickers.

		<ul style="list-style-type: none"> <li>• Provision of appropriate PPEs and training</li> <li>• Health checks</li> <li>• Provision of safe water supply to surrounding communities</li> <li>• Showers, washing basins, clean toilets, changing rooms, etc. at facilities</li> <li>• To avoid disruptions to waste-based livelihoods measures: allow adult waste pickers access to recyclables (sorting/material recovery facility) and composting facility of the new landfill in accordance with occupational health and safety guidelines. The landfill management company will undertake registration and age verification, and only those who are registered waste pickers on the basis of a census, to be carried out once Project sites are selected, can enter and engage in waste sorting in the sorting/material recovery facility. Unregistered relatives or family members of waste pickers will not be allowed. This will ensure that the Project will not remove access to waste resources and avoid economic displacement and at the same time managing influx.</li> </ul>
<p>Vulnerable and disadvantaged groups of waste pickers, specifically child waste pickers</p>	<p>Additional measures for vulnerable and disadvantaged groups of waste pickers, specifically child waste pickers</p> <p>As per the labor law in Cambodia, the minimum age for any employment is 14, with a child between the age of 14 and 18 only able to be employed or engaged under certain circumstances (see on the right)</p> <p>Children waste pickers specifically under 14, cannot be permitted to participate in waste recycling activities and will require support measures and options.</p>	<ul style="list-style-type: none"> <li>• Additional measures to support vulnerable and disadvantaged group of waste pickers- specifically those who are depending solely on waste picking in terms of livelihoods and do not have IDpoor equity cards yet- consist of providing assistance to obtain equity cards through the on-demand IDPoor program when the program's selection criteria are met. In addition, waste pickers will receive information and referral to other existing social support programmes provided by Government agencies or existing NGOs in the respective province, such as the new Family Benefits package which is expected to start during 2023</li> <li>• The design and management arrangements for the Material Recovery Facilities and composting facilities will include measures to allow vulnerable groups and specifically woman to recover waste with proper Occupational, Health and Safety conditions and provide skill training including with focus on (vulnerable) women.</li> </ul> <p>Support measures for children between 14-18 The project will provide support to child waste pickers. This support will not be provided as cash or credit as livelihood restoration would not apply as children should be in school. Support will be provided through existing government social support program and existing NGOs. In case where existing programs are lacking, the Project will provide additional support with an option to use Grant financing under this project. The Ministry of Interior and relevant provincial and municipal authorities are the responsible</p>

	<p>institutions for organizing and implementing measures to provide support measures of these children as following:</p> <ul style="list-style-type: none"> <li>• Provide free access to new landfill site including sorting/material recovery facility (to sort waste to extract recyclables) and composting facility to work under supervised conditions to ensure proper occupational, health and safety conditions for these children to engage in non-hazardous work and where it will not affect their education. The concerned landfill management company will undertake registration and age verification, and only those who are registered waste pickers on the basis of a census to be carried out after Project sites are selected can enter and undertake waste sorting in the sorting/material recovery facility. Their relatives, family members or friends will not be allowed if they don't have their name in the registration list.</li> <li>• For those children waste pickers whose families' income is solely dependent on waste picking in terms of livelihoods and haven't received an equity card yet, the project will assist the family in obtaining IDpoor equity cards according to the established mechanism (On-Demand ID Poor) when meeting the eligibility criteria.</li> <li>• Conduct social need assessment on the basis of census and social economic surveys once the Project sites are selected and provide necessary support that help child waste pickers continue going to school and refer the child waste pickers to existing social programs provided by government or NGOs.</li> <li>• Organize and operate a community learning center (can be operated in existing primary schools near existing waste disposal sites) for children to learn life skills, English or remedial classes outside of school times. Administration of district or commune manages this center through the community preschool management approach and further guidance from the project. The organizing and functioning this community learning center could make use of grant financing for the project.</li> <li>• Support the enrollment in Vocational Training Programs of government and existing NGO programs in each target provinces.</li> </ul> <p>Support measures for children under 14-years of age.</p> <p>To keep children under 14 years outside the new landfill and stop working, the following support measures are applied:</p> <ul style="list-style-type: none"> <li>• Conduct an extensive social assessment with families who have children accompanying or</li> </ul>
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		<p>working on the current dumpsite to identify their social needs and living conditions.</p> <ul style="list-style-type: none"> <li>• Closely monitor children’s families whose income depend only on waste picking and assist them in getting Equity Cards (ID-Poor Household) when they meet the eligibility criteria. This will be carried out by the ID Poor committee at the commune level with support from Project implementation entities at the provincial level.</li> <li>• Based on the needs assessment, the Project will facilitate identified children to get existing social support programs implemented by the government or NGOs in each target provinces including learning material, scholarship, food program provided at school (implemented by World Food program and MoEYS in Siem Reap).</li> <li>• The Project can use parts of closed and rehabilitated waste disposal sites (in case available) or free space in primary school near disposal sites to organize these as playgrounds and sports facilities.</li> </ul> <p>Encourage children to join education activities in community learning center such as life skill, English, or extracurricular classes outside public school time.</p>
<p>Job opportunities</p>	<p>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</p>	<ul style="list-style-type: none"> <li>• Ensure awareness of job opportunities within surrounding communities and consideration for poor and vulnerable groups.</li> <li>• Transparent information sharing about the created job opportunities particularly in local areas</li> <li>• Local sourcing of supplies and materials whenever possible</li> </ul>
<p>Impacts on property value</p>	<p>The project foresees a wide range of measures that will positively affect land prices around the existing dumpsites.</p>	<ul style="list-style-type: none"> <li>• Suitable landfill siting and selection process.</li> <li>• Proper mitigation of environmental and social impacts of construction and operation thereby minimizing impacts to neighboring communities and accompanying property values.</li> <li>• Fencing and buffer zones with measures against visual impacts (tree screens</li> </ul>

# 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 tourism<sup>13</sup> 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.(Panha, 2020).

While real gross domestic product (GDP) growth was strong at 7.1 percent in 2019, Covid-19 caused a sharp drop to -3.1 percent in 2020. The economy is expected to continue to recover, with a modest recovery of 2.2 percent projected in 2021 and estimated to reach 4.5 percent in 2022. Despite a recovery of manufacturing exports and an expansion of agricultural commodity exports, the trade deficit has widened significantly. Poverty continues to remain higher than pre-pandemic, given that employment has yet to return to pre-pandemic levels and the negative impacts of the pandemic on non-farm family businesses remain substantial. As of October 2021, 678,459 households or 19 percent of all households (households classified as poor or vulnerable), have received the cash transfer from the government. 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.

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<sup>13</sup> 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).

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 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. Component 4 (Contingent Emergency Response Component) has zero allocation and no associated financing unless it is triggered.

An Eligible Crisis or Emergency is defined by the World Bank as an event that has caused or is likely to imminently cause a major adverse economic and/or social impact associated with natural or man-made crises or disasters. This may include: (i) cyclone; (ii) earthquake; (iii) storm; (iv) storm surge and strong waves; (v) tornado; (vi) tsunami; (vii) volcanic eruption; (viii) flood; (ix) landslides; (x) forest fires; (xi) drought; (xii) severe weather; (xiii) extreme temperature; (xiv) high winds; and (xv) any natural disaster.

The RGC will seek support from the Bank to select a list of activities for financing under the CERC based on (i) the positive list and the negative list presented in paragraph 34 of the CERC manual, and (ii) priorities identified at the Rapid Needs Assessment of the emergency's impact. The RGC may seek advice from the World Bank in the selection of the Project's component(s) from which funds will be reallocated to CERC, if necessary.

In situations where the CERC is triggered, the credit can be used for emergency response purpose from each implementing agency, based on the Emergency Response Manual annexed in the POM and subject to the World Bank's no objection.

A CERC Manual has been prepared as part of the Project Operational Manual for the Project. This contains the following Positive list.

#### **Positive list of goods, services, non-consulting services, works, and other eligible expenses**

Item
<b>Goods</b>
<ul style="list-style-type: none"> <li>• Medical equipment and supplies</li> <li>• Non-perishable foods, bottled water and containers</li> <li>• Tents for advanced medical posts, temporary housing, and classroom/daycare substitution</li> </ul>

<ul style="list-style-type: none"> <li>• Equipment and supplies for temporary housing/living (gas stoves, utensils, tents, beds, sleeping bags, mattresses, blankets, hammocks, mosquito nets, kit of personal and family hygiene, etc.) and school</li> <li>• Gasoline and diesel (for air, land and sea transport) and engine lubricants</li> <li>• Spare parts, equipment and supplies for engines, transport, construction vehicles</li> <li>• Lease of vehicles (Vans, trucks and SUVs)</li> <li>• Equipment, tools, materials and supplies for search and rescue (including light motor boats and engines for transport and rescue)</li> <li>• Tools and construction supplies (roofing, cement, iron, stone, blocks, etc.)</li> <li>• Equipment and supplies for communications and broadcasting (radios, antennas, batteries)</li> <li>• Water pumps and tanks for water storage</li> <li>• Equipment, materials and supplies for disinfection of drinking water and repair/rehabilitate of black water collection systems</li> <li>• Equipment, tools and supplies for agricultural, forestry, and fisheries</li> <li>• Feed and veterinary inputs (vaccines, vitamin tablets, etc.)</li> <li>• Construction materials, equipment and industrial machinery</li> <li>• Water, air, and land transport equipment, including spare parts</li> <li>• Temporary toilets</li> <li>• Groundwater boreholes, cargos, equipment to allow access to affected site, storage units</li> <li>• Any other item agreed on between the World Bank and the Recipient (as documented in an Aide-Memoire or other appropriate formal Project document)</li> </ul>
<p><b>Services and non-consulting services</b></p> <ul style="list-style-type: none"> <li>• Consulting services related to emergency response including, but not limited to urgent studies and surveys necessary to determine the impact of the disaster and to serve as a baseline for the recovery and reconstruction process, and support to the implementation of emergency response activities</li> <li>• Feasibility study and technical design;</li> <li>• Works supervision</li> <li>• Technical Assistance in developing TORs, preparing Technical Specifications and drafting tendering documents (Bidding Documents, ITQ, RFP).</li> <li>• Non-consultant services including, but not limited to: drilling, aerial photographs, satellite images, maps and other similar operations, information and awareness campaigns</li> <li>• Non-consultant services to deliver any of the activities described in the “Goods” section of this table (e.g., debris removal, dump trucks, drones survey)</li> </ul>
<p><b>Works</b></p> <ul style="list-style-type: none"> <li>• Repair of damaged infrastructure including, but not limited to: water supply and sanitation systems, reservoirs, canals, roads, bridges and transportation systems, energy and power supply, telecommunication, and other infrastructure damaged by the event</li> <li>• Re-establish of the urban and rural solid waste system, water supply and sanitation (including urban drainage)</li> <li>• Repair of damaged public buildings, including schools, hospitals and administrative buildings</li> </ul>

<ul style="list-style-type: none"> <li>• Repair, restoration, rehabilitation of schools, clinics, hospitals</li> <li>• Removal and disposal of debris associated with any eligible activity.</li> </ul>
<b>Training</b>
<ul style="list-style-type: none"> <li>• Conduct necessary training related to emergency response including, but not limited to the Implementation of EAP</li> <li>• Training on rapid needs assessment and other related assessments</li> </ul>
<b>Emergency Operating Costs</b>
<ul style="list-style-type: none"> <li>• Incremental expenses should be borne by the Government source of funds for a defined period related to early recovery efforts arising as a result of the impact of an eligible emergency.</li> </ul>

The CERC manual also contains the following negative list of activities. The following uses for goods and equipment financed by the CERC are prohibited, which also applies to use and storage for DRM-related activities including hazard monitoring, disaster preparedness, and future response to natural disasters.

- i. Activities that would lead to conversion or degradation of critical forest areas, critical natural habitats, and clearing of forests or forest ecosystems
- ii. Activities affecting protected areas (or buffer zones thereof), other than to rehabilitate areas damaged by previous natural disasters.
- iii. Land reclamation (i.e., drainage of wetlands or filling of water bodies to create land)
- iv. Land clearance and leveling in areas that are not affected by debris resulting from the eligible crisis or emergency
- v. River training (i.e., realignment, contraction or deepening of an existing river channel, or excavation of a new river channel)
- vi. Activities that will result in the involuntary taking of land, relocation of households, loss of assets or access to assets that leads to loss of income sources or other means of livelihoods, and interference with households' use of land and livelihoods
- vii. Construction of new roads, realignment of roads, or expansion of roads, or rehabilitation of roads that are currently located on communal lands but will be registered as government assets after rehabilitation
- viii. Use of goods and equipment on lands abandoned due to social tension / conflict, or the ownership of the land is disputed or cannot be ascertained
- ix. Use of goods and equipment to demolish or remove assets, unless the ownership of the assets can be ascertained, and the owners are consulted
- x. Uses of goods and equipment involving forced labor, child labor, or other harmful or exploitative forms of labor
- xi. Uses of goods and equipment for activities that would affect indigenous peoples, unless due consultation and broad support has been documented and confirmed prior to the commencement of the activities
- xii. Uses of goods and equipment for military or paramilitary purposes
- xiii. Uses of goods and equipment in response to conflict, in any area with active military or armed group operations
- xiv. Activities related to returning refugees and internally displaced populations

- xv. Activities which, when being carried out, would affect, or involve the use of, water of rivers or of other bodies of water (or their tributaries) which flow through or are bordered by countries other than the Borrower/Recipient, in such a manner as to in any way adversely change the quality or quantity of water flowing to or bordering said countries.

Once the CERC is triggered on the basis of the preparation of a Rapid Needs Assessment and preparation of Emergency Action Plan. The Emergency Action Plan will include the following:

- The list of emergency activities, goods, works, services (based on the positive/negative list included in this manual) to be financed under the CERC, including itemized costs.
- If civil works are being proposed, the locations, types and number of civil works.
- It either confirms the CERC's implementation modalities outlined in the CERC manual or proposes changes (which would require Bank's no-objection to the updates in the manual).
- A summary of the environmental and social implications (e.g. potential environmental and social impacts) of proposed activities and, if needed, the environmental and social instrument(s) to be prepared in order to comply with the national law and the Bank's ESF. If deferral of ESF completion is agreed upon CERC activation, it should include an action plan for such completion.
- A (simplified) Procurement Plan
- End of Implementation Date, upon which all items financed under the EAP should have been received or completed

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 detailed resettlement plans. 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 Cambodia<sup>14</sup>. 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 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)<sup>15</sup>. 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.

<sup>14</sup> Royal Government of Cambodia, Standard Operating Procedures on Project Management for all externally financed Projects/Programs in Cambodia, 2019

<sup>15</sup> 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.

*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), 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 ESIA/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 and Plastic Waste Management in Cambodia**

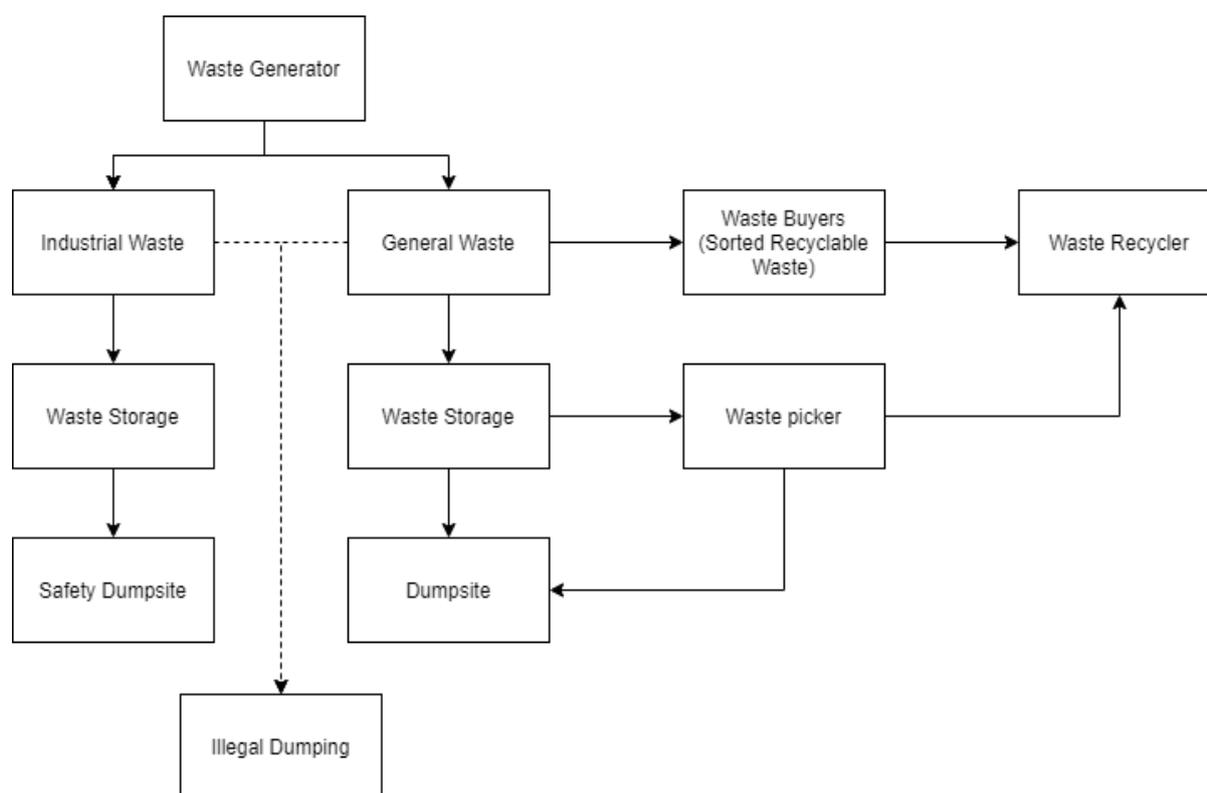
Projections based on 2013 to 2020 assumptions pegged Cambodia's waste generation at 4 to 7 million tons per year. Waste collection is largely limited to urban areas. Waste collected and transported to dumpsites in urban areas was approximately 317,550 tons in 2004, increasing to 630,679 tons in 2011, 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*

### **Plastic waste management**

Plastic leakage into the environment, waterways, and ocean forms a particularly crucial part of solid waste mismanagement in Cambodia. The Mekong is one of the top 10 major rivers which are estimated to collectively carry up to 95 percent of plastics to the oceans. There is no data on marine plastic leakage at country scale in Cambodia, however the inescapable presence of mismanaged waste, high levels of plastic consumption, paired with SWM deficiencies, leaves little doubt that large amounts of plastics end up in Cambodia's environment and rivers. With Phnom Penh and other major municipalities of the country being situated along the Mekong River or its tributaries, Cambodia's cities are considered major sources of the Mekong's and ultimately the South China Sea's plastic pollution. In Siem Reap, plastic bags were found to make up 60 percent of the waste obstructing wastewater runoff, and it is estimated that in the country 41 percent of used plastic bags are burnt and 48 percent end in the sea. Studies implemented in Sihanoukville, Koh Rong and Koh Sdach islands revealed that plastics accounted for 80% of coastal pollution found on beaches.

A recent World Bank study identifying the most abundant plastic items leaking into the environment highlights that few single-use plastic items comprise the bulk of the waste that ends up in the environment. The top 10 plastic items leaking into the environment constitute over 70 percent of the waste, with food wrappers (PP), shopping bags (HDPE and LDPE),

drinking cups and beverage bottles (PET),<sup>16</sup> and straws (PP) being the dominant items. Plastic bags alone account for over 30 percent of plastic pollution. Plastics become a part of the animal and human food chain, burning of mismanaged plastic leads to toxic fumes contributing to air pollution, and Phnom Penh and other major municipalities are severely affected by increased flooding risks due to plastic waste blocking drainage systems. The results show that addressing selected top-10 single-use plastics alone can already significantly reduce marine plastic pollution. Due to COVID-19, an increase in certain single-use plastics has been reported across the world, and the long-term trajectory of increased solid waste generation and single-use plastics is anticipated to continue. The countrywide overall economic impacts of the plastic pollution alone on the tourism sector have been estimated at US\$1.5mln.

## **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%

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<sup>16</sup> HDPE = High Density Polyethylene; LDPE = Low Density Polypropylene; PET = Polyethylene Terephthalate; PP = Polypropylene. World Bank, Plastics Action Plan and Roadmap for Cambodia, draft, 2021.

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 (2<sup>nd</sup> in the country following Phnom Penh), and food, beverage, and tobacco (3<sup>rd</sup> 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.

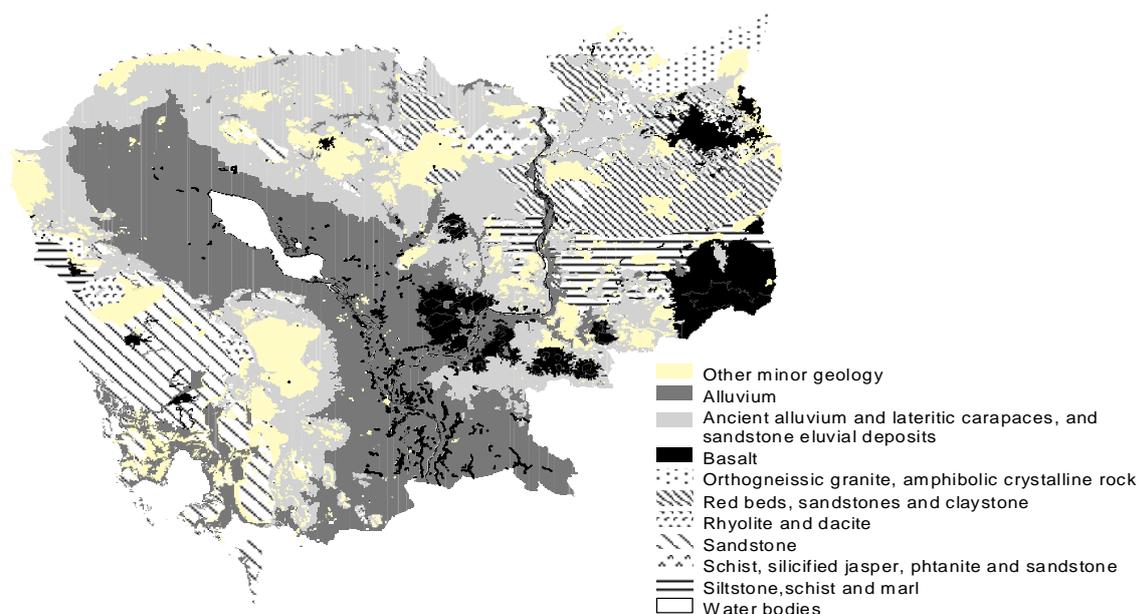
The province of Kandal has an average altitude of 10 meters above sea level. It consists of typical plain wet area, covering rice fields and other agricultural plantations.

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**

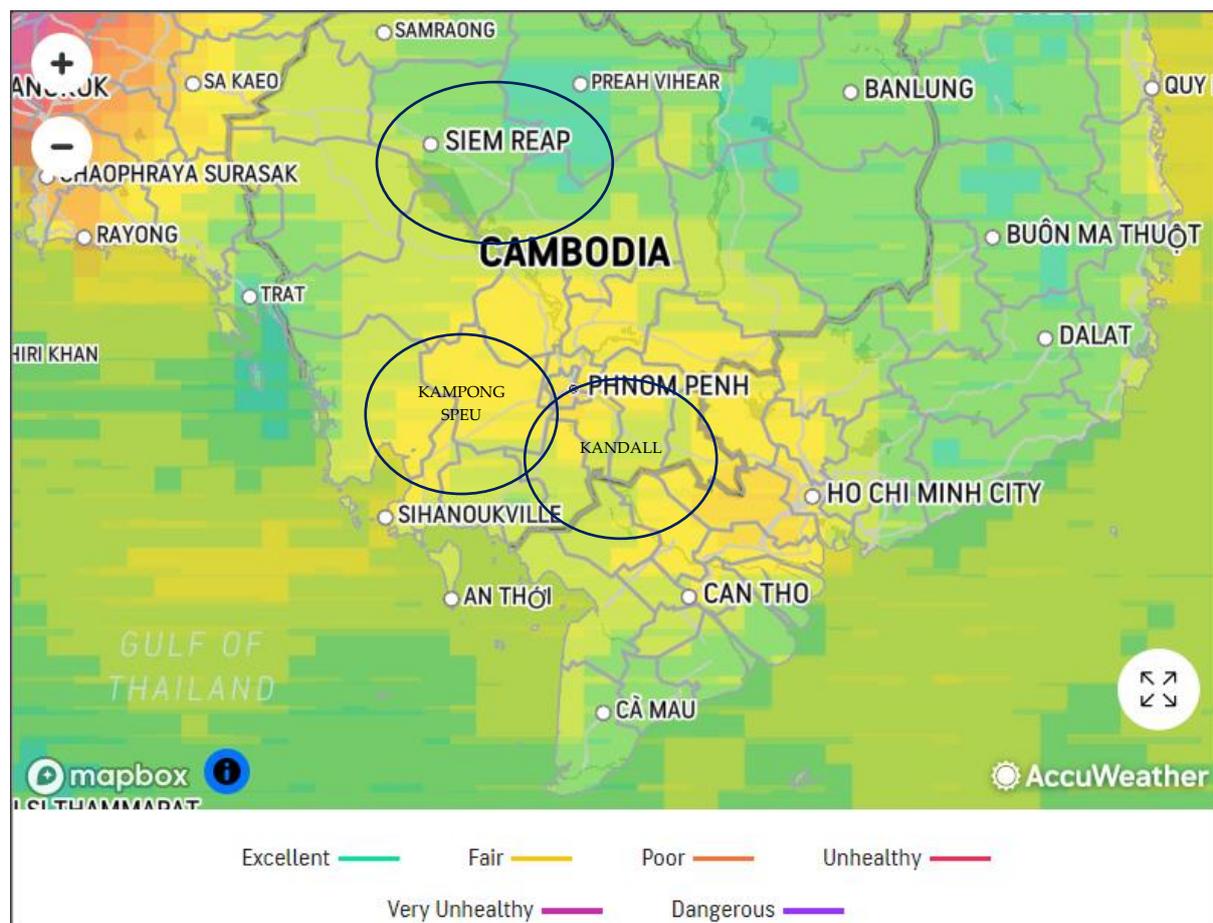
The land area of Cambodia is 18.1 million hectares of which at least 6.5 million hectares is considered arable. A diminishing amount of the population of the country lives in rural areas and depends on land, forests, river and other natural resources for their livelihood and more and more of the population 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.



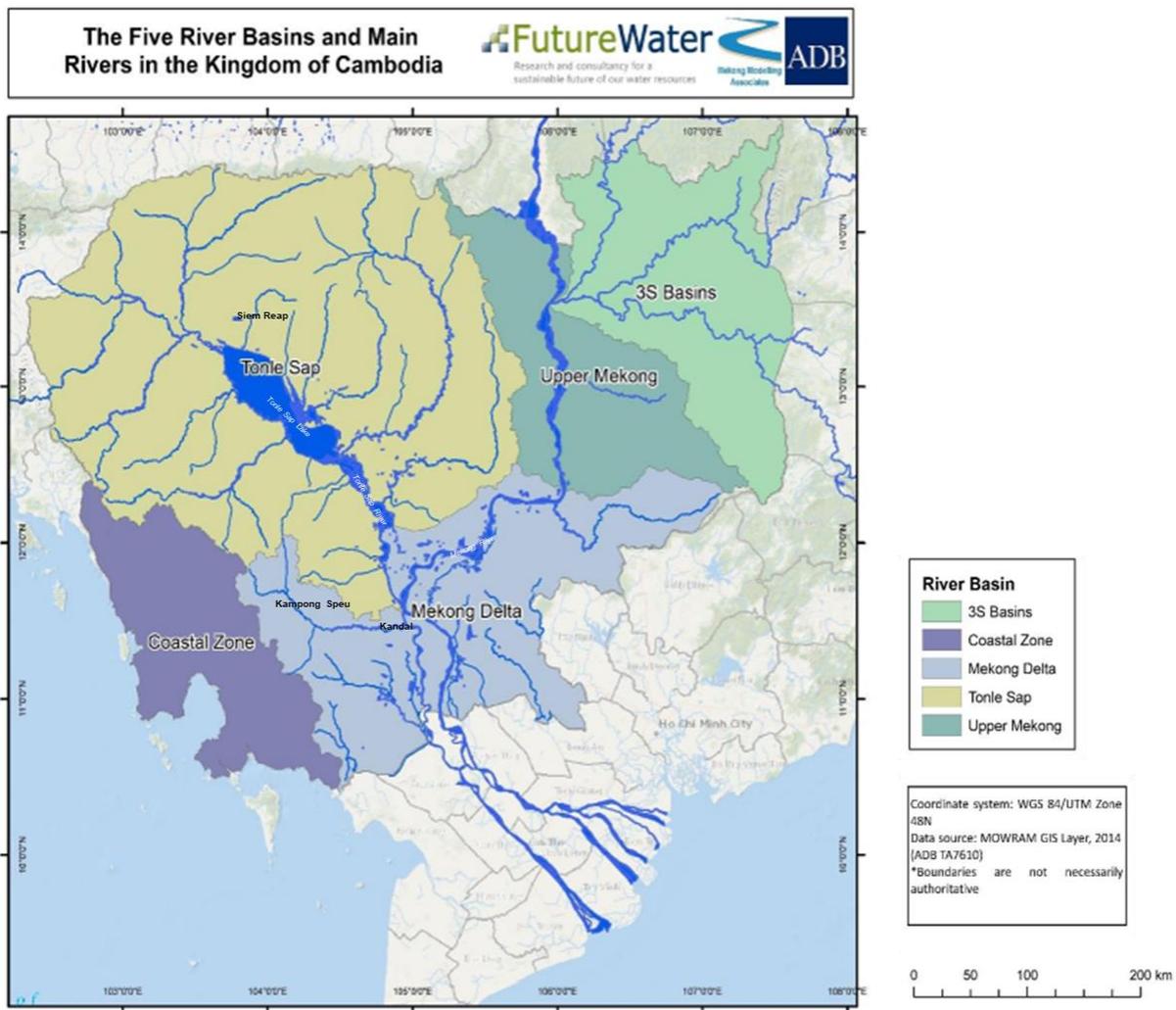
**Figure 2.2-1: Air Quality of Cambodia**

*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 (NO<sub>2</sub>) and sulfur dioxide (SO<sub>2</sub>) 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 ESIA 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

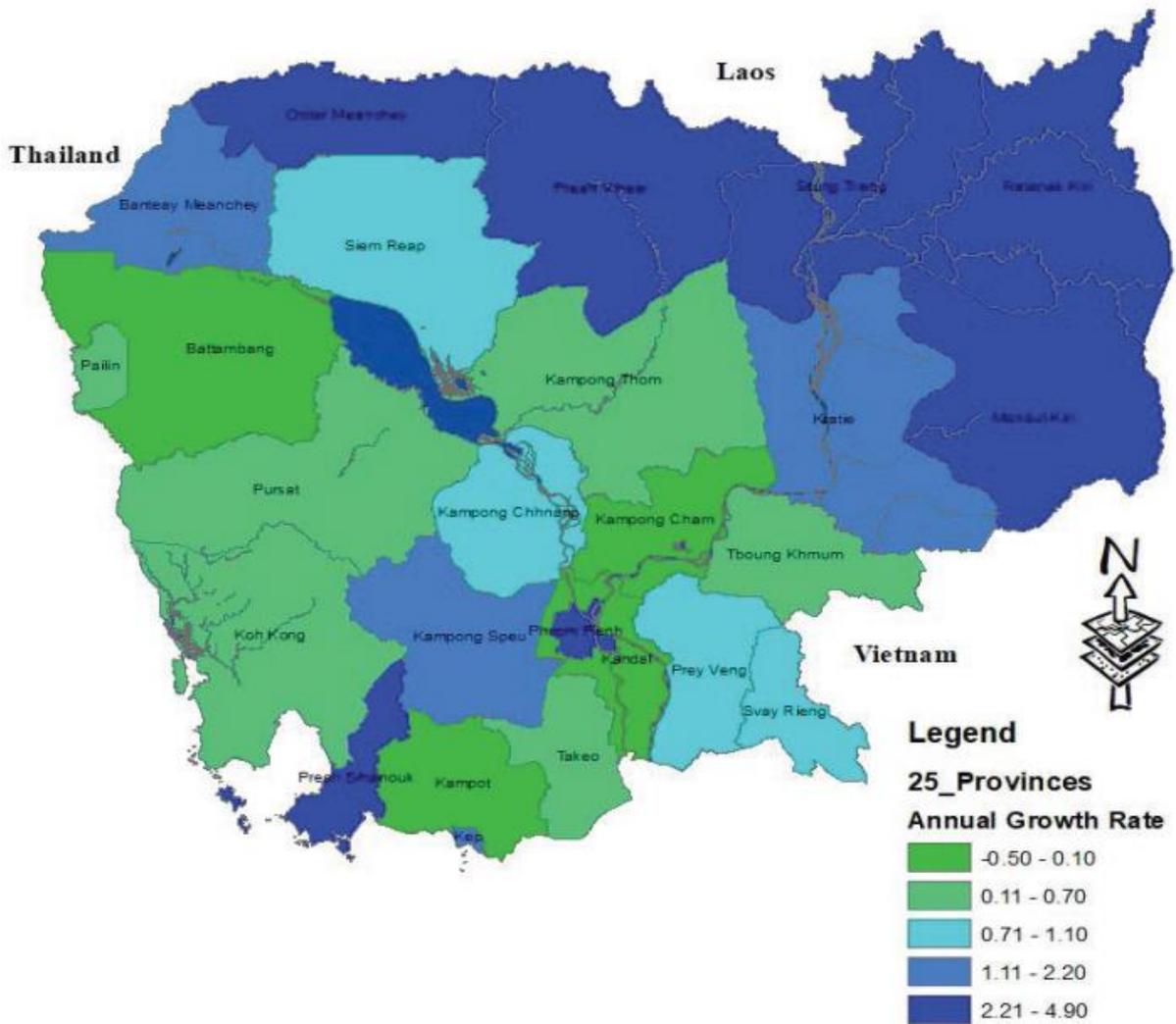
Population density in Siem Reap grew from 87 to 98 persons per sq.km. from 2008 to 2019. The province is significantly more densely populated in comparison to Cambodia as a whole as there are only 84 persons per sq.km. in the whole of Cambodia as of 2019, an increase of from 74 persons per sq.km. in 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 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
<b>CAMBODIA</b>	<b>181,035</b>	<b>13,395,682</b>	<b>15,288,489</b>	<b>1.5</b>	<b>1.2</b>	<b>74</b>	<b>84</b>
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
<b>TOTAL</b>	<b>14,676,592</b>	<b>922,982</b>	<b>755,466</b>	<b>1,115,964</b>

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
<b>Kouy</b>	<b>234</b>	<b>906</b>	<b>0</b>	<b>0</b>	<b>176</b>	<b>41</b>
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
Tompuonn	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
<b>Saouch</b>	<b>30</b>	<b>127</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
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
<b>TOTAL</b>	<b>269</b>	<b>1,050</b>	<b>-</b>	<b>-</b>	<b>176</b>	<b>41</b>

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 35,620<sup>17</sup>.

<sup>17</sup> 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
<b>CAMBODIA</b>	<b>286,659</b>	<b>41.6%</b>	<b>402,873</b>	<b>58.4%</b>	<b>689,532</b>	<b>100.0%</b>	

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.

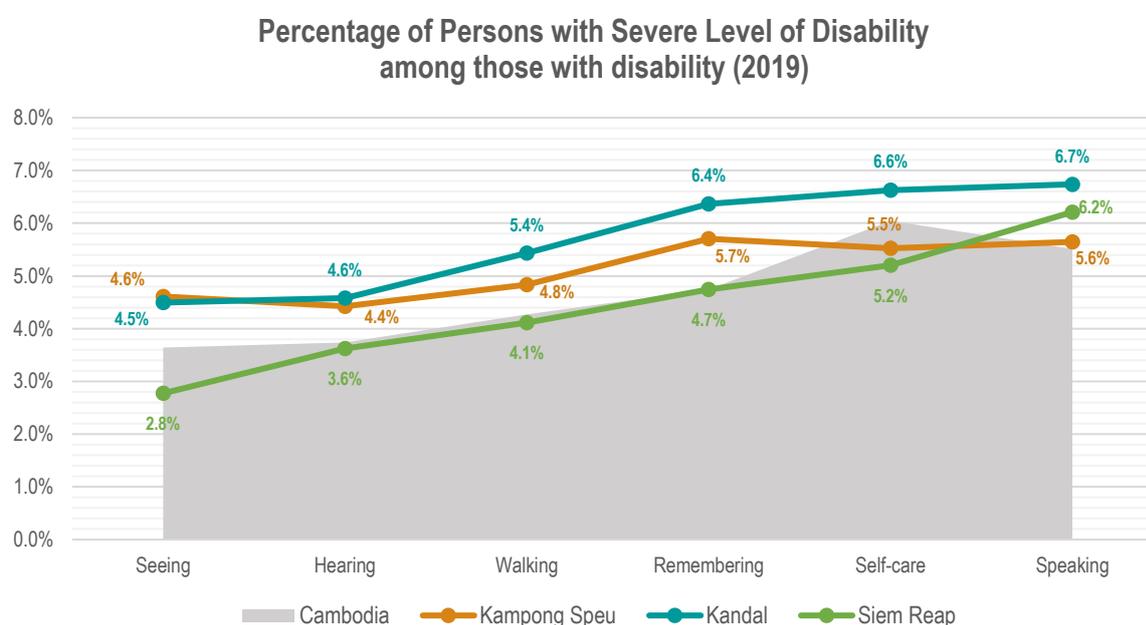
**Table 2.3-6: Persons with Disability in Kampong Speu, Kandal and Siem Reap by Type and Level (2019)**

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

Disability		Province			
Type	Level	Kampong Speu	Kandal	Siem Reap	CAMBODIA
	Severe	951	1,560	778	19,891
	<b>Total</b>	<b>17,213</b>	<b>23,544</b>	<b>14,956</b>	<b>328,999</b>
<b>Speaking</b>	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
	<b>Total</b>	<b>18,134</b>	<b>23,865</b>	<b>15,860</b>	<b>326,616</b>

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

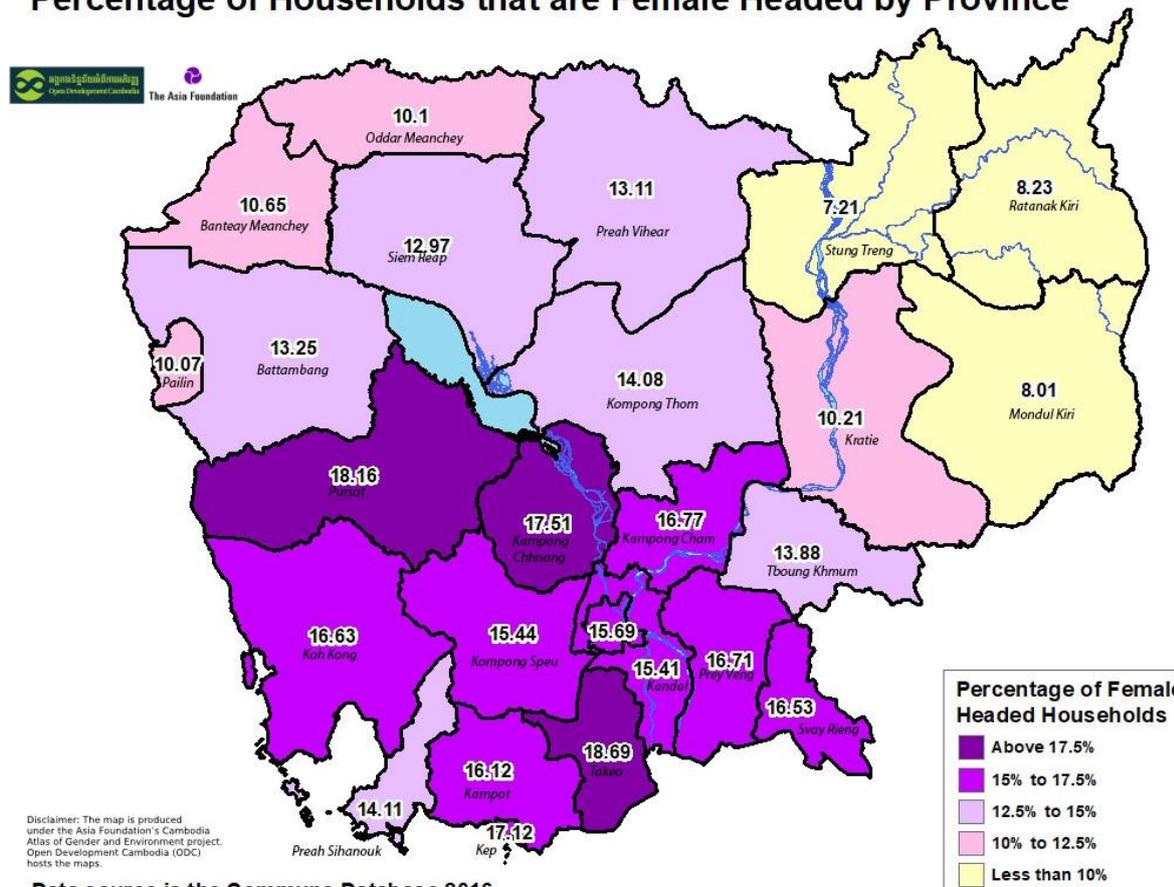


Figure 2.3-3: Female-headed Households by Province (2016)

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.”

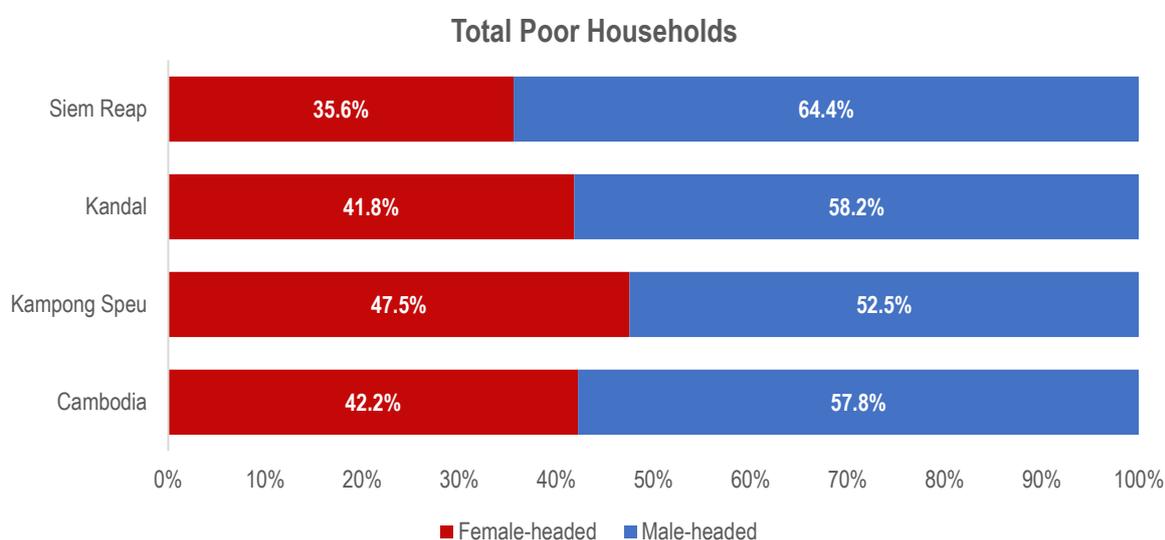
Almost one in five households (18.98%) in Cambodia are considered poor (MOP, 2019). In Siem Reap Province, 30,579 households or 12.19% of its total households are poor, most of which are under Poor Level 2. In Kandal Province, 30,972 households or 9.91% of its total households are poor, a third of which 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 Households<sup>18</sup>**

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

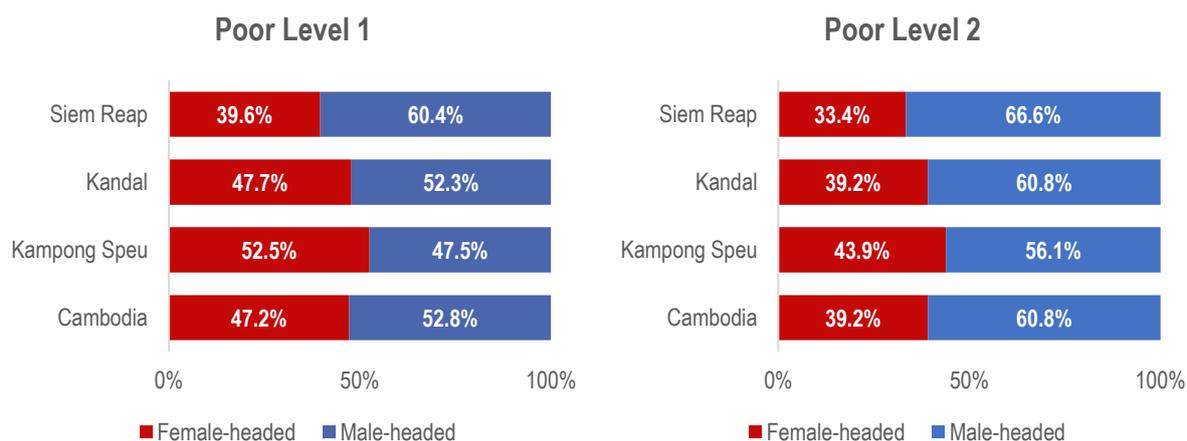
Disaggregating this data by sex of the household head, 42.2% of the poor households in Cambodia are headed by females. The share of female-headed poor households in Siem Reap are significantly lower than the national average at 35.6%, while in Kandal Province, it is only marginally lower at 41.8%. In 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 n ot found.

**Figure 2.3-4: Total Poor Households by Sex of Head of Household<sup>18</sup>**

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**.

<sup>18</sup> 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.



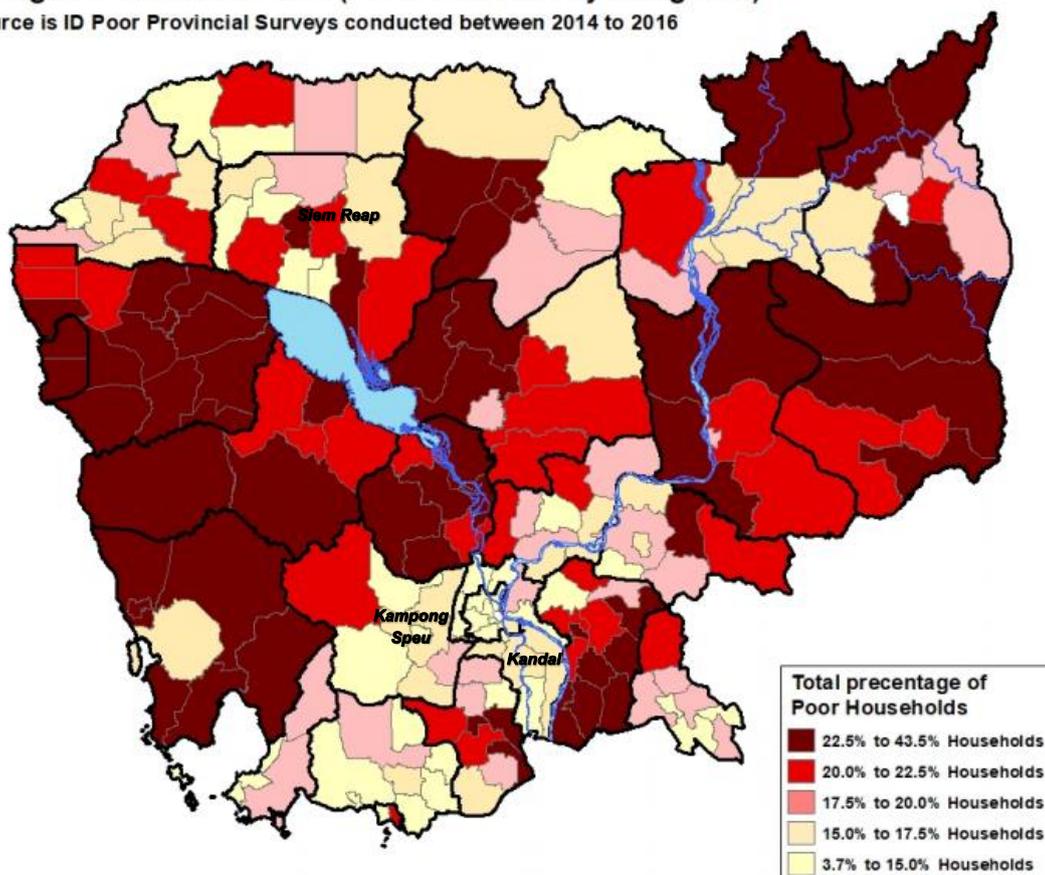
**Figure 2.3-5: Poor Households by Level and Sex of Head of Household**

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)<sup>19</sup>**

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
<b>Siem Reap</b>								
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
<b>Kampong Speu</b>								
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
<b>Kandal</b>								
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
<b>Cambodia</b>								
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

<sup>19</sup> 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 (2009 – 2012)<sup>20</sup>**

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

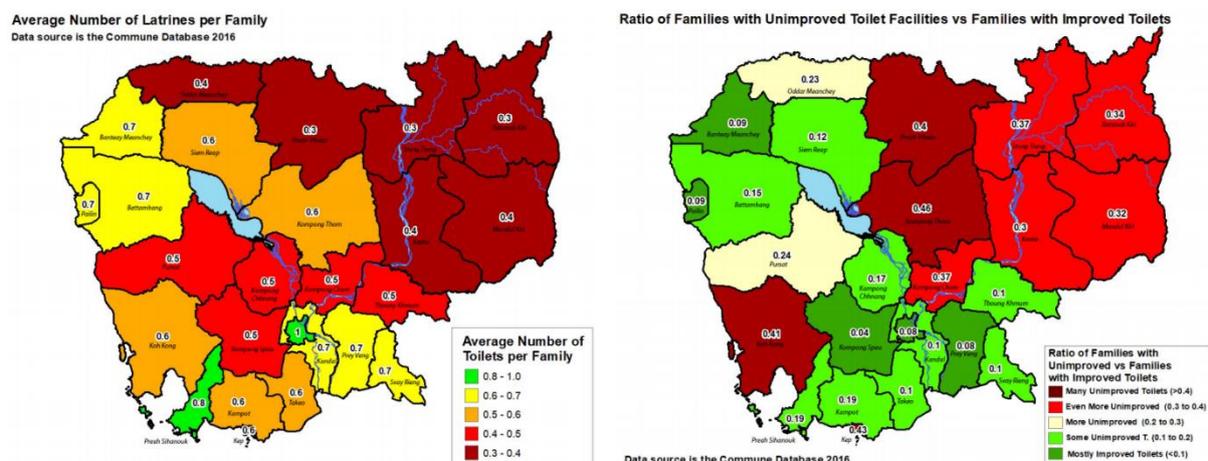
## **Basic Services and Utilities**

### *Access to Water Supply*

<sup>20</sup> For the multidimensional poverty index indicated, this was derived from severe poverty rates of the provinces.



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 and poor and vulnerable**

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
<b>Kampong Speu</b>			
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
<b>Kandal</b>			
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
<b>Siem Reap</b>			

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%
<b>Cambodia</b>			
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.

### Categories of waste pickers

#### Siem Reap

Based on field observations, preliminary social economic surveys, focus group discussions, key informant interviews and stakeholder engagement and consultations conducted as part of the preparation of the ESMF and preliminary ESIA for Siem Reap, an approximate total of 273 waste-pickers have been identified in the existing dumpsite in Siem Reap from the villages of Anlong Pir, Phnom Dey, Suong, Rokakambot, Banteay Russey, and Lovea. Most of the waste-pickers came from Phnom Dey.

The preliminary surveys for the waste pickers identified about two-thirds (64.3%) are female, wherein 12% are children aged 14 years old and below (0-14) and 10% are children between 15 to 18 years old. Among the children, there were also some orphans<sup>21,22</sup>. It was observed as part of the stakeholder engagement and consultations that for part of the children, waste picking was a part-time business done before and after school or due to absence of day-care facilities. Most of children between 14 to 18 years old help their parents with waste picking and packaging when they are free from school, while a small number of children do it to get money for their own expenses.

As per the labor law in Cambodia, the minimum age for any employment is 14, with a child between the age of 14 and 18 only able to be employed or engaged in the following circumstances: (i) work is not considered hazardous, being work that by its nature of the circumstances in which it is carried out is likely to jeopardize the health, safety, or morals of

<sup>21</sup> By law, the orphans who are living with extended families or guardians are the family members and registered in the family card. So, they are accessible to social services or supports.

<sup>22</sup> Most of the orphans in Siem Reap are a result of their parents migrating to work in other provinces or countries, leaving them with relatives. There is one orphanage run by the Siem Reap provincial administration. There is a principle in place that when an orphan child is taken in by a poor household, the child will receive (limited) support for basic needs and school materials.

children; (ii) appropriate risk assessment is conducted prior to the work commencing and (iii) no interference with school.

The precise number of waste pickers and breakdown need to be confirmed once Project sites are selected during the preparation of the site-specific Environmental and Social Impact Assessments together with the census and social-economic surveys during the preparation of the Detailed Resettlement Plan and with consultations and choice on the support options and selected types.

Preliminary information on trends and vulnerable and disadvantaged groups of waste pickers:

- Most individuals interviewed appear to live in houses within the surrounding villages, rather than within the boundaries of the landfill site itself
- Interviewed waste pickers reported as having been working on the site for 10 years or more. The surrounding community therefore is likely to have a strong reliance on the dumpsite and there is a strong sense of attachment to the area
- Income was reported as typically being between 50 USD and 75 USD per month, which would place individuals below the poverty line if waste-picking income is the only source of income, about half of the waste pickers noted that they had other sources of income too. Incomes from waste-picking typically varies substantially and the work is typically seasonal and intermittent. Waste picking can also consist of migrant waste pickers through influx from other areas, depending on job opportunities and economic situation.
- With the almost complete absence of tourists due to COVID-19 in the Siem Reap Province, waste volumes have dropped, as have opportunities for work and income generating activities in the tourism and service sectors
- Headaches were mentioned as common health issues, which given the conditions and smell of the open dumpsites would likely to be caused by the environmental conditions at the open dumpsites.

#### Kandal

In Kandal, some 40 waste pickers were identified on the existing dumpsite with conditions similar as in Siem Reap. No specific breakdown in age groups is available. Also in Kandal, women and children were observed and health issues and income insecurity were mentioned as part of the stakeholder engagement and consultations. It was observed that for part of the children, waste picking was a part-time activity done before and after school or due to absence of day-care facilities.

The precise number of waste pickers and breakdown need to be confirmed once Project sites are selected during the preparation of the site-specific Environmental and Social Impact Assessments together with the census and social-economic surveys during the preparation of the Detailed Resettlement Plan.

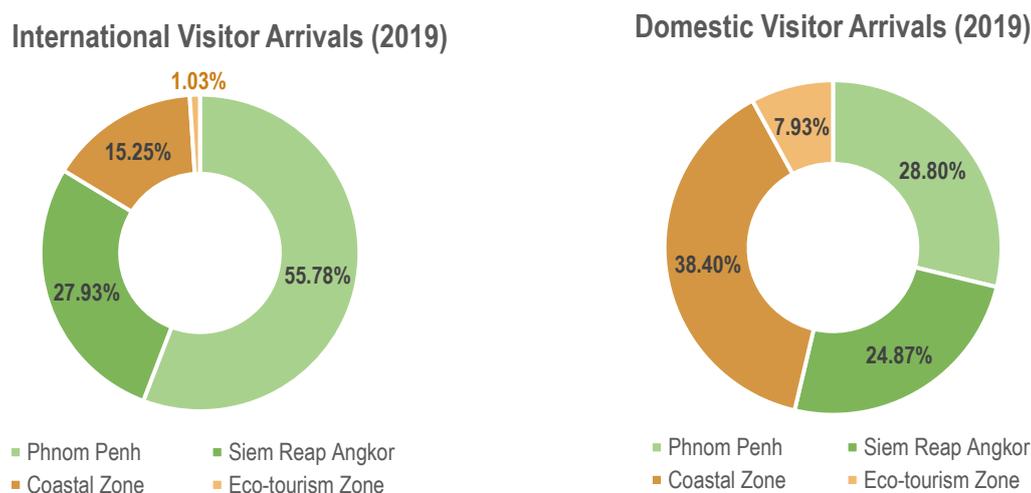
#### Kampong Speu

In Kampong, some 36 waste pickers were identified on the existing dumpsite with conditions similar as in Siem Reap, no specific break down in age groups is available. Also in Kampong Speu, women and children were observed and health issues and income insecurity as well as migrant workers were mentioned as part of the stakeholder engagement and consultations. It was observed that for part of the children, waste picking was a part-time activity done before and after school or due to absence of day-care facilities.

The precise number of waste pickers and breakdown need to be confirmed once Project sites are selected during the preparation of the site-specific Environmental and Social Impact Assessments together with the census and social-economic surveys during the preparation of the Detailed Resettlement Plan.

### **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	
<b>TOTAL</b>	<b>Number</b>	<b>8,269,719</b>	<b>7,896,554</b>	<b>5,994,467</b>	<b>1,687,893</b>	<b>-27.51</b>	<b>-78.62</b>
	<b>Percentage</b>	<b>51.2%</b>	<b>48.8%</b>	<b>78.0%</b>	<b>22.0%</b>		

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 2014<sup>23</sup> 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.<sup>24</sup> 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 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

<sup>23</sup> 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.

<sup>24</sup> Based on 2020 data from the National Institute of Statistics.

Component	Region	Zone 1 (sq.km.)	Zone 2 (sq.km.)
Banteay Srei	Siem Reap	18	2
<b>TOTAL (sq.km.)</b>		<b>208</b>	<b>193</b>
		<b>401</b>	

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.

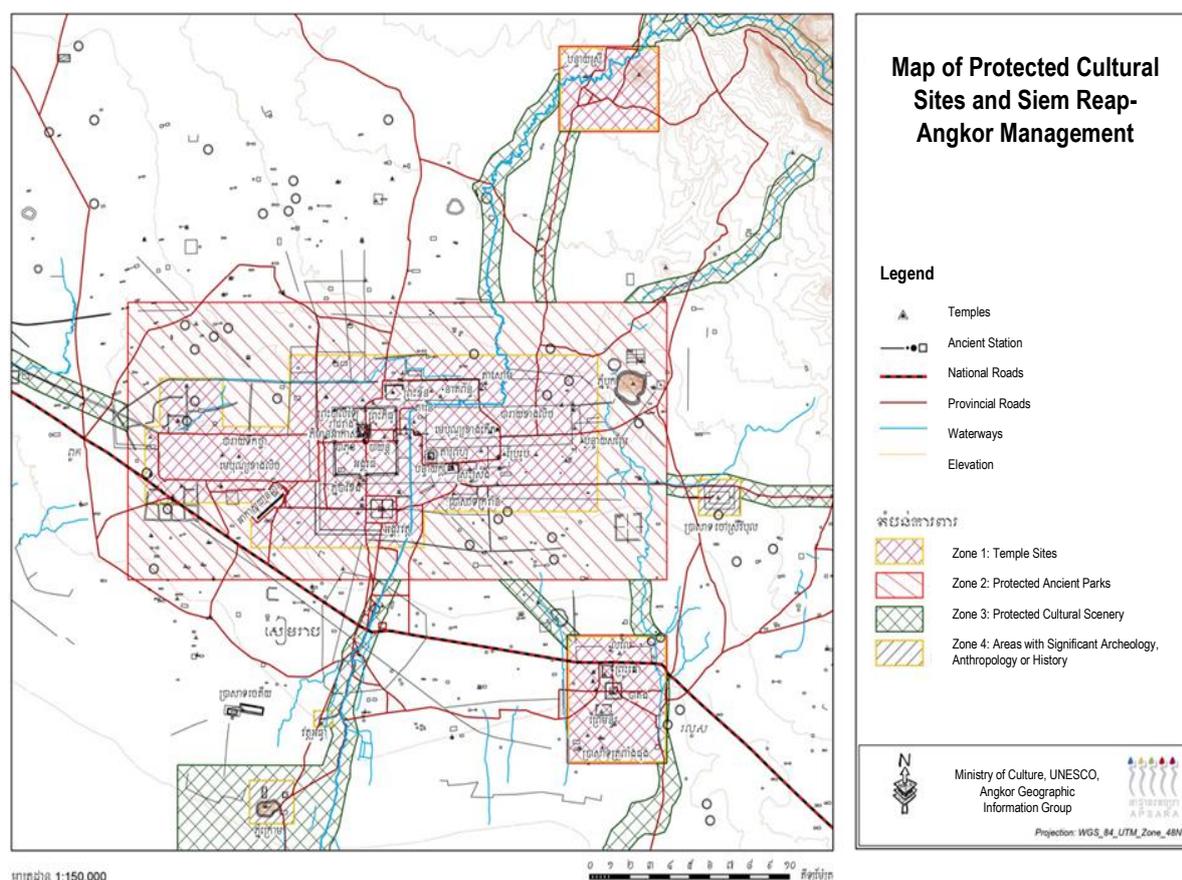


Figure 2.3-11: Map of Cultural Heritage Areas under the Protection of APSARA Authority

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).

#### *Discovery of Antiquities and Cultural Heritage*

If, during the execution of the project activities any material is discovered onsite which may be considered of historical or cultural interest, such as evidence of prior settlements, native or historical activities, evidence of any existence on a site which may be of cultural significance, all work shall stop and the Chance Find Procedures followed. The area in which the material was discovered shall be secured, cordoned off, marked, and the evidence preserved for examination by the local archaeological or cultural authority. No item believed to be an artefact must be removed or disturbed by any of the workers. Work may resume, without penalty of prejudice to the contractor upon permission from the contracting officer with any restrictions offered to protect the site.

Bidding and contract documentation for Contractors will include a clause on chance find procedures and includes the following measures:

- a) Stop construction activities in the area of the chance find;
- b) Delineate the discovered site or area;
- c) Secure the site to prevent any damage or loss of removable objects;
- d) Notify the supervisory Engineer who, in turn, will notify the responsible local authorities;
- e) Responsible local authorities would conduct a preliminary evaluation of the findings to be performed by archaeologists who will assess the significance and importance of the findings according to various criteria, including aesthetic, historic, scientific or research, social and economic values;
- f) Decisions on how to handle the finding shall be taken by the responsible authorities which could result in changes in layout, conservation, preservation, restoration and salvage;
- g) Implementation for the management of the finding communicated in writing; and
- h) Construction work could resume only after permission is given from the responsible local authority concerning safeguard of the heritage.

#### **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**.

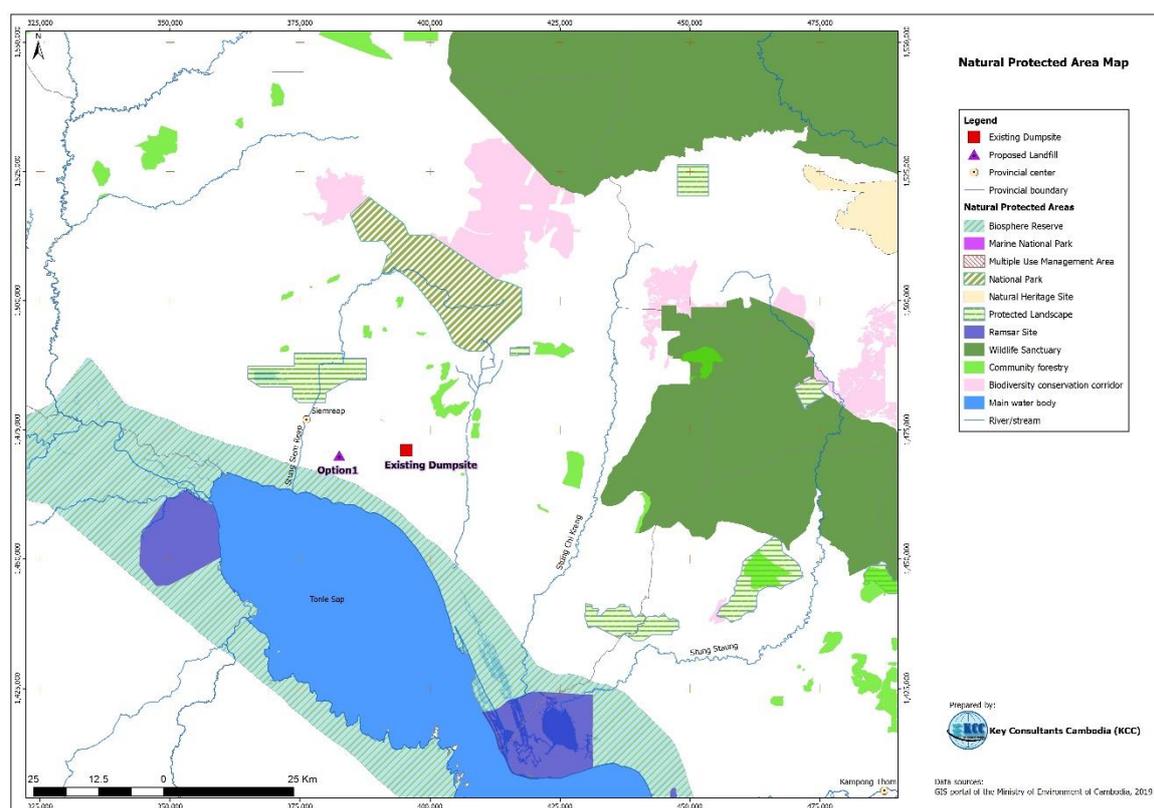
**Table 2.3-15: Zones of the Tonle Sap Biosphere Reserve**

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**

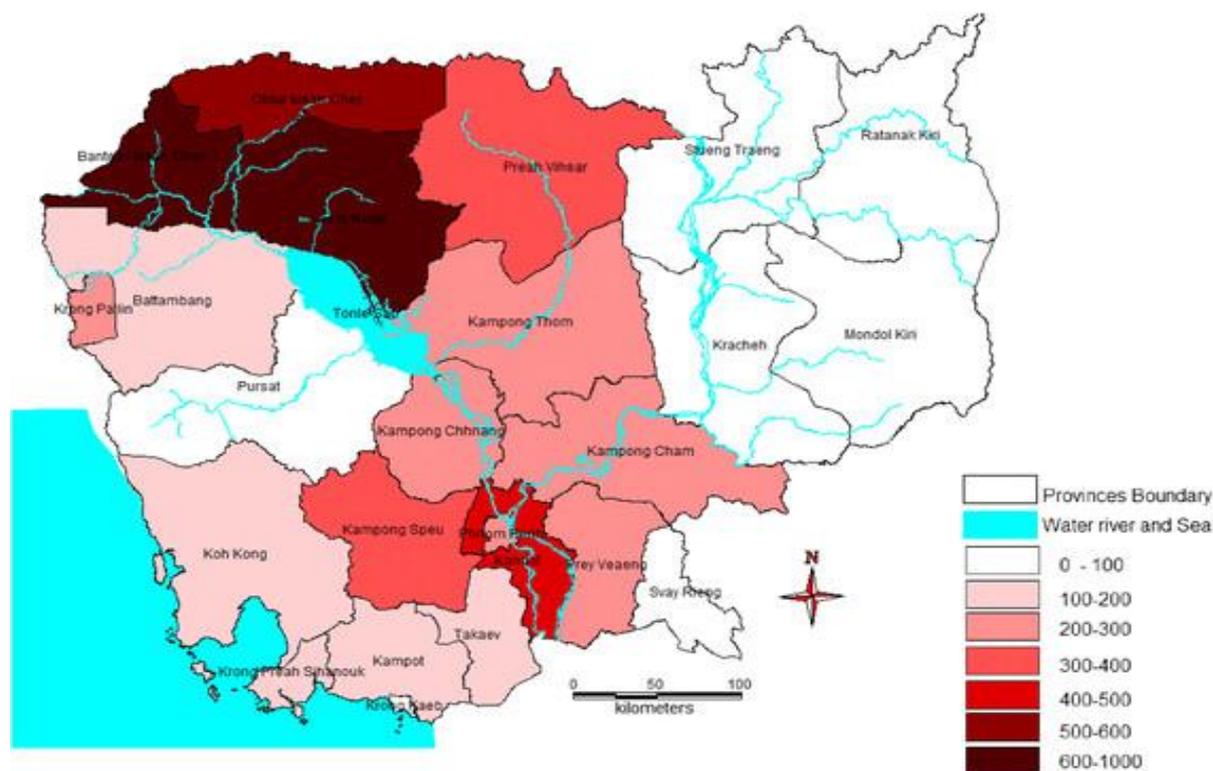
Data Source: MoE, 2019

## 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
<b>Fertility</b>					

Indicator	Unit	Cambodia	Siem Reap	Kampong Speu	Kandal
Total fertility rate	number of children per woman	2.7	2.7	2.4	2.5
<b>Maternal Health (women age 15-49)</b>					
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
<b>Child Health</b>					
Children age 12-23 months who received all basic vaccinations	%	73	79	67	65
<b>Nutrition</b>					
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
<b>Children Mortality (deaths per 1,000 live births)</b>					
Infant mortality	deaths / 1000 live births	28	40	26	30
Under-five mortality	deaths / 1000 live births	35	56	31	40
<b>HIV/AIDS (age 15-49)</b>					
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"> <li>• Environmental protection agreement / contract</li> <li>• Environmental Management Plan</li> </ul>
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"> <li>Leading and pushing operation of the management of garbage and solid waste</li> <li>Determinate the maximum fees with MOI and MEF</li> </ul>
Ministry of Interior (MOI)	<ul style="list-style-type: none"> <li>Supports the capacity building and experience sharing with the sub-national administration (SNA)</li> <li>Coordinate the SNA</li> </ul>
Municipal and District Administrations	<ul style="list-style-type: none"> <li>Establish, control and manage cleaning, collecting and transporting services,</li> <li>Manages related-works to SWM</li> <li>Prepare management plans, yearly actions and budget plans,</li> <li>Determinate the fees for the SWM services</li> </ul>
Provincial Administration	<ul style="list-style-type: none"> <li>Advice and provide supports to the municipal and district administrations on legal, regulatory and technical aspects</li> <li>Coordinate the preparation of the management plans</li> </ul>
Provincial Department of Environment	<ul style="list-style-type: none"> <li>Promote citizens' education</li> <li>Participate in the preparation of the management plans</li> <li>Participate in the implementation of fine measures</li> </ul>

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	<p>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:</p> <ul style="list-style-type: none"> <li>• 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</li> <li>• 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</li> <li>• Encourage proper waste management plan to a sustainable development of the Country, protecting its natural asset and concurrently creating jobs.</li> </ul>	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"> <li>(1) <u>National park</u></li> <li>(2) <u>Wildlife sanctuary</u> – wildlife preservation and protection</li> <li>(3) <u>Protected landscape</u> – protected scenic view areas to be maintained as scenic spots for leisure and tourism</li> <li>(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</li> <li>(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</li> <li>(6) <u>Natural heritage site</u> – natural or semi-natural sites unique in ecosystem, beauty or cultural value</li> <li>(7) <u>Marine park</u> – coastal areas with plants, wildlife and fish, with historical or cultural value</li> <li>(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.</li> </ol>	Yes
Law on Water Resources Management (2007)	<p>Requires license/permit/written authorization for the: (i) abstraction &amp; use of water resources other than for domestic purposes, watering for animal husbandry, fishing &amp; irrigation of domestic gardens and orchards; (ii) extraction of sand, soil &amp; gravel from the beds &amp; banks of water courses, lakes, canals &amp; reservoirs; (iii) filling of river, tributary, stream, natural lakes, canal &amp; 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 &amp; 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.</p>	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"> <li>i. Ambient air quality standard;</li> <li>ii. Maximum allowable noise level in public and residential areas.</li> </ul> <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 (&gt;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"> <li>• Minor or small impact: Environmental Protection Contracts and Environment Management Plan</li> <li>• Moderate impact: Initial Environmental and Social Impact Assessment</li> <li>• Serious or serious impact: Full Environmental and Social Impact Assessment</li> </ul>	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**

<b>Chapter</b>	<b>Contents</b>
<b>Chapter 1: Introduction</b>	<ul style="list-style-type: none"> <li>• Project overview and rationale</li> <li>• Objectives</li> <li>• Methodology and Scope of study</li> </ul>
<b>Chapter 2: Legal frameworks</b>	Description of laws, sub-decrees and various policies related to project type
<b>Chapter 3: Project description</b>	<ul style="list-style-type: none"> <li>• Background and experiences of the project owners/company;</li> <li>• Project site (attached with local administration map and project location);</li> <li>• Project type/scope and schedule of project activities (project pre-operation, operation and closure)</li> <li>• Work plan</li> </ul>
<b>Chapter 4: Description of Existing Environment</b>	Description of the natural environment and socio-economic aspects based on primary and secondary data on the following: <ul style="list-style-type: none"> <li>• Natural Environment <ul style="list-style-type: none"> <li>○ Physical Resources</li> <li>○ Biological Resources</li> </ul> </li> <li>• Socioeconomic aspects</li> </ul>
<b>Chapter 5: Public Participation</b>	Details public consultation and participation activities and conclusions
<b>Chapter 6: Environmental Impacts and Mitigation Measures</b>	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.
<b>Chapter 7: Environmental Management Plan (EMP)</b>	Summary of the following: <ul style="list-style-type: none"> <li>• Main negative environmental impacts and mitigation measures,</li> <li>• Trainings to be provided</li> <li>• Environmental monitoring program for the construction, operation and closure periods, including agencies responsible, monitoring parameters, methodology, environmental standards, and reporting periods.</li> </ul>
<b>Chapter 8: Economic Analysis and Environmental Value</b>	Description of the benefits of the project in relation to scope and value of environmental damage arising from the project activities
<b>Chapter 9: Conclusions and Recommendations</b>	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*<sup>25</sup> 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)**

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<sup>25</sup> 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 provided with livelihood restoration measures 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 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.<sup>26</sup> 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

<sup>26</sup> Based on the GNB, ESF for IPF Operations, p. 1

ESS	Summary	Relevant	Commentary
	reduction, such as livelihood impacts, 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 &amp; safety, occupational health &amp; safety, and the impact of pier construction on aquatic organisms. The main E&amp;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 &amp; safety and occupational health &amp; 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 &amp; safety and occupational health &amp; 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	<p>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.</p>	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 &amp; 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. These 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.</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 economic displacement; 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>
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 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	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> <p>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</p>

ESS	Summary	Relevant	Commentary
	capacity to assert their interests and rights in land and other productive resources.		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 in case the where the assessment of risks and impacts shows presence of significant cultural heritage.	Relevant	<p>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.</p> <p>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).</p>
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	<p>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 grievances; and reporting to stakeholders.</p> <p>Upon identification of individuals and groups identified, a Stakeholder</p>	Relevant	<p>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.</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</p>

ESS	Summary	Relevant	Commentary
	<p>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>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> <p>As defined by ESS7, FPIC of Indigenous Peoples, indigenous communities, and Ethnic Minorities is required in the following circumstances where the subproject will:</p> <ul style="list-style-type: none"> <li>(i) Have adverse impacts on land and natural resources subject to traditional ownership or under customary use or occupation;</li> <li>(ii) Cause relocation of Indigenous Peoples/ Ethnic Minorities from land and natural resources subject to traditional ownership or under customary use or occupation; and</li> <li>(iii) Have significant impacts on Indigenous Peoples cultural heritage that is material to the identity and/or cultural, ceremonial, or spiritual aspects of the affected communities.</li> </ul>

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"> <li>• Accidents and injuries, including those involving trucks and moving equipment, unstable disposal site surfaces, and fires and explosions,</li> <li>• Chemical exposure, including exposure to chemical burns, and</li> <li>• Exposure to pathogens and vectors that can be health hazards.</li> </ul> <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, livelihood impacts of these must be avoided, especially without provision of any alternatives.</p>

Component	Description
	<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 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>
Community Health and Safety	<p><b>Long-term Operation, Decommissioning or Closure:</b> 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><b>Landfill Siting</b> In the identification of landfill sites, the nearest residential developments must be over 250 meters from the site option.</p> <p><b>Community Health and Safety</b> The following impacts likely to occur during the operation and decommissioning phases must be looked into:</p> <ul style="list-style-type: none"> <li>• <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.</li> <li>• <i>Physical, chemical, and biological hazards:</i> access to facilities, especially for areas that hold toxic waste, must be restricted and implement security procedures.</li> <li>• <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.</li> <li>• <i>Noise:</i> measures to management noise should be taken to void causing nuisance to the adjacent areas.,</li> <li>• <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.</li> </ul> <p>(Section 1.1.1, p.10-11, 14; Section 1.3 p.26)</p>
Environmental Protection and Management	<p><b>On emission and noise management</b> Additional guidelines on emission management specific for Waste Management Facilities include:</p> <ul style="list-style-type: none"> <li>• Inclusion of landfill gas collection system and its use if practical,</li> <li>• Use of gas blowers, and</li> <li>• Installation and regular sampling of boreholes.</li> </ul> <p><b>Additional guidelines on noise management specific for Waste Management Facilities</b> include the following:</p> <ul style="list-style-type: none"> <li>• Construction of a buffer zone,</li> <li>• Road quality maintenance</li> <li>• Use of equipment with low-noise emission levels,</li> <li>• Use of sound-insulating materials, acoustic screens and silencing equipment,</li> <li>• Enclose inherently noisy equipment in a fixed structure, and</li> <li>• Inclusion of noise considerations in the design process.</li> </ul> <p><b>EHS Guidelines for Waste Management Facilities on Landfill Siting</b> 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	<p><b>Paragraph 11: Associated Facilities</b><sup>7</sup> 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>		<p>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.</p>	MPWT
Environmental and Social Impact Assessment	<p><b>ESS1:</b> 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> <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</p>	<p><b>Law on Environmental Protection and Natural Resource Management (1996)</b> includes the formulation of sub-decrees for environmental management, including policies related to the Environmental Impact Assessment Process.</p> <p><b>Sub-decree 72 on Environmental Impact Assessment Process (1999)</b> 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.</p> <p><b>Prakas 376 on General Guideline for Preparing Initial Environmental Impact Assessment and Full Environmental Impact Assessment Report (2009)</b> sets the guidelines and scope of I/EIAs.</p>	<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 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 ESIA and ESMPs that will be developed for the sub-projects will specifically include focus on social assessment and management plus</p>	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>(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>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><b>Prakas on Delegation of Power to Municipal/Provincial Department of Environment to Decide on Project Development (2005)</b> 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><b>Prakas 21 on the Classification of Environmental Impact Assessment for Development Projects (2020)</b> 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&amp;S impact), initial environmental and social impact assessment (projects with medium E&amp;S impact), or full environmental and social assessment (projects with serious E&amp;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	<p><b>ESS1:</b> 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><b>Labor Law (1997)</b> 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 <i>12 to 15 years old can be hired to do light work</i> as long as the nature of work fulfils the following:</p> <ol style="list-style-type: none"> <li>(1) work is not hazardous to their health or mental and physical development.,</li> <li>(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.</li> </ol> <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><b>Prakas No. 002 on Category of Occupation and Light Work Permitted for Children (2008)</b> 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, site-specific ESIA's, including measures to avoid disruptions to waste-based livelihoods as well as additional measures, will be prepared, adopted and implemented with meaningful consultation with affected persons in accordance. Specific attention will be paid to woman and children waste-pickers to develop suitable measures in line with ESS1 and on the basis of social baseline studies for each of the applicable sub-projects.</p>	<p>MOE, MOI, MPWT, GDR, under MEF Contractors, construction supervisors</p>

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p><b>ESS2:</b> Labor management procedures for all types of workers to be employed or engaged by the project must include</p>	<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"> <li>• Working at some shopping malls such as selling booth, vegetables and fruit selling stall, or news stand and stall of other similar goods;</li> <li>• Receiving, packing, selecting and classifying goods as well as assembling light things, including opening or taking goods out of the package;</li> <li>• Lifting, carrying and holding light things.</li> </ul> <p>The prakas provides a full listing of the types of light work for children aged 12-15 years old and is detailed in <b>Section 3.2.2</b>.</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> <p><b>Prakas No. 106 on the Prohibition of Hazardous Child Labour (2004)</b> prohibits the employment of children below 18 years old on</p>		

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"> <li>• No work between 10:00pm to 5:00am</li> <li>• Children undergo training</li> <li>• Consultation with Labor Advisory Committee</li> <li>• Annual health checkups with Department of Labor Health to certify that they are in the proper health condition to engage in hazardous work</li> </ul>		
	<p><b>EHS Guidelines for Waste Management Facilities on Occupational Health and Safety:</b> 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, livelihood impacts of these must be</p>	<p><b>Law on Suppression of Human Trafficking and Sexual Exploitation (2008)</b> 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><b>ESS3:</b> 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><b>General EHS Guidelines:</b> 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><b>Law on Environmental Protection and Natural Resource Management (1996)</b> mandates the formulation of sub-decrees on Air Pollution Monitoring and Noise Disturbance, Water Pollution Control, and Environmental Impact Assessment Process.</p> <p><b>Sub-decree 42 on Air Pollution Monitoring and Noise Disturbance (2000)</b> establishes the standard on ambient air quality and maximum allowable noise level as follows:  <u>Noise: Vehicles</u></p> <table border="1"> <thead> <tr> <th>Type of Vehicles</th> <th>Max Limit (dB (A))</th> </tr> </thead> <tbody> <tr> <td>&lt;125cm3</td> <td>85</td> </tr> </tbody> </table>	Type of Vehicles	Max Limit (dB (A))	<125cm3	85	Resource efficiency and pollution prevention and management measures shall be developed under the ESMP to be prepared, submitted and implemented.	MWPT, MOI, MOE
Type of Vehicles	Max Limit (dB (A))							
<125cm3	85							

Item	Applicable WB Policy	Relevant RGC Policy				Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>Noise Level: WHO Guidelines on Community Noise set in 1999 was adopted. (p.4, 53)</p>	≥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							
<b>Location</b>	<b>6am-6pm</b>	<b>6pm-10pm</b>	<b>10pm-6am</b>				
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							
<b>Noise Level (dB (A))</b>	<b>Max duration (hour)</b>	<b>Note</b>					
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						
<u>Air Quality</u>							

Item	Applicable WB Policy	Relevant RGC Policy				Policy Gaps Identified and Actions Suggested	Responsible Party
			1h (mg/m <sup>3</sup> )	8hrs (mg/m <sup>3</sup> )	24hrs (mg/m <sup>3</sup> )		
		CO	40	20			
		NO <sub>2</sub>	0.3		0.1		
		SO <sub>2</sub>	0.5		0.3	0.1	
		O <sub>3</sub>	0.2				
		Pb			0.005		
		TSP			0.33	0.1	
	<p><b>EHS Guidelines for Waste Management Facilities on emission and noise management:</b> 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><b>EHS Guidelines for Waste Management Facilities on Landfill Siting:</b> 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><b>Technical guideline on municipal solid waste management (2016)</b> 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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Community Health and Safety	<p>(Section 1.1.1, p.10-11, 14)</p> <p><b>ESS1:</b> Environmental social assessment must include relevant risks and impacts 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)</p> <p><b>ESS4:</b> 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><b>EHS Guidelines for Waste Management Facilities:</b>  <u>Long-term Operation, Decommissioning or Closure:</u> Specific procedures on closure</p>	<p><b>Sub-decree 42 on Air Pollution Monitoring and Noise Disturbance (2000)</b> establishes the standard on ambient air quality and maximum allowable noise level as follows:</p> <p>Noise: Vehicles</p> <table border="1"> <thead> <tr> <th>Type of Vehicles</th> <th>Max Limit (dB (A))</th> </tr> </thead> <tbody> <tr> <td>&lt;125cm3</td> <td>85</td> </tr> <tr> <td>≥125cm3</td> <td>90</td> </tr> <tr> <td>&lt;12 seats</td> <td>80</td> </tr> <tr> <td>≥12 seats</td> <td>85</td> </tr> <tr> <td>&lt;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> </tbody> </table> <p>Noise: Residential Areas and Public Places</p> <table border="1"> <thead> <tr> <th>Location</th> <th>6am-6pm</th> <th>6pm-10pm</th> <th>10pm-6am</th> </tr> </thead> <tbody> <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> </tbody> </table> <p><b>Labor law of the Kingdom of Cambodia (1997)</b> includes Chapter VIII, Health and Safety of Workers, articles 228 to 247</p> <p><b>Sub-Decree on Municipal Solid Waste Management (2017)</b> The purpose of this sub-decree is to regulate the solid waste management with proper technical manner and</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	Residential: Hotel, house,	60	50	45	Industry mixing with residential	75	70	50	<p>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.</p>	<p>MPWT, contractors, construction supervisors</p>
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	<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>(1) <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>(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>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>(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><b>ESS5</b></p> <p>Objectives of ESS5 are:</p> <ul style="list-style-type: none"> <li>• To avoid involuntary resettlement or, when unavoidable, minimize involuntary resettlement by exploring project design alternatives.</li> <li>• To avoid forced eviction.</li> <li>• 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.</li> <li>• 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.</li> <li>• To conceive and execute resettlement activities as sustainable development programs, providing sufficient investment resources to enable</li> </ul>	<p>The <b>Constitution of Cambodia (1993)</b> establishes the right to land ownership, and the right of the State to eminent domain (Art. 44)</p> <p><b>Land Law (2001)</b> defines the scope of ownership of immovable properties, such as land, trees and fixed structures, including:</p> <ul style="list-style-type: none"> <li>• <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)</li> <li>• <i>Basis of Land Ownership</i>: legal possession as the sold basis of land ownership</li> <li>• <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"> <li>○ Lands not acquired through legal possession (Art. 18-19),</li> <li>○ A foreigner who falsifies national identity to become an owner of land in Cambodia</li> </ul> </li> </ul>	<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, measures to avoid disruptions to waste-based livelihoods will be prepared, adopted and implemented with meaningful consultation with affected persons in accordance with ESS1 as well as additional support measures. Specific attention will be paid to woman and children waste-pickers to develop suitable measures in line with the ESMF on the basis of social baseline studies for each of the applicable sub-projects.</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>displaced persons to benefit directly from the project, as the nature of the project may warrant.</p> <ul style="list-style-type: none"> <li>• To ensure that resettlement activities are planned and implemented with appropriate disclosure of information, meaningful consultation, and the informed participation of those affected</li> </ul>	<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"> <li>○ Properties past the expiration of their lease (Art 108).</li> </ul> <p><b>Prakas No. 6 on Measures to Crack Down on Land Grabbing and Encroachment (2007) and Sub-decree No. 197</b> provides that compensation for structures and assets located in ROWs will not be subject to any compensation.</p> <p><b>Circular No. 2 on Measures against Illegal Holding of State Land (2007)</b> 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> <p><b>Expropriation Law (2010)</b> 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>		
	<p><b>ESS5:</b> 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>			

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 <b>Sub-Decree No.115</b> 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><b>2018 Land Acquisition and Involuntary Resettlement</b> 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><b>2014 Circular No. 6 of the MEF on the Resettlement Implementation Procedure</b> 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	<p><b>ESS1:</b> 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)</p> <p><b>ESS6:</b> 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>	<p><b>Law on Nature Protection Area (2008)</b> 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> <p><b>Law on Water Resources Management (2007)</b> 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><b>Law on Forest (2002)</b> establishes framework and regulatory measures to protect and conserve forests and their biological diversity,</p>	<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

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
		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	<p><b>ESS7:</b> 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>	<p>The <b>Constitution of Cambodia (1993)</b> 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><b>National Policy on the Development of Indigenous Peoples (2009)</b> 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"> <li>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”</li> <li>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</li> </ol>	<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><b>Land Law (2001)</b> 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><b>Circular No. 2 on Measures against Illegal Holding of State Land (2007)</b> 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><b>2008 Organic Law</b> 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><b>Law on Forestry (2002)</b> recognizes the customary rights of formally registered indigenous communities to forest products and by-products.</p>		
Cultural Heritage	<p><b>ESS1:</b> 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><b>Royal Decree on the Establishment of Protected Cultural Zones in the Siem Reap/Angkor Region and Guidelines for their Management (1993)</b> established five (5) cultural zones and what structures are within them:</p> <ol style="list-style-type: none"> <li>2. Core Zone: Monumental sites</li> <li>3. Buffer Zone: Protected Archaeological Reserves</li> <li>4. Protected Cultural Landscapes</li> <li>5. Sites of Archaeological, Anthropological or Historic Interest, or sites outside of the core and buffer zones</li> <li>6. Socio-Economic and Cultural Development Zone</li> </ol>	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><b>ESS8</b> 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><b>Royal Decree on the creation of the APSARA National Authority (1995)</b> 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><b>Law on Protection of Cultural Heritage (1996)</b> 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"> <li>• <u>Definition of Cultural Property</u>: Cultural property is defined (Chap. 1, Article 4)</li> <li>• <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).</li> </ul> <p><b>No. 70 SSR government Decision (2004)</b> defined the land use in the Angkor Park, wherein its Zones 1 and 2 are considered State properties.</p>		
Stakeholder Engagement	<b>ESS1</b> : 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.	<b>Guidebook on Environmental Impact Assessment in the Kingdom of Cambodia (2012)</b> defines public participation and highlights the stages in the project cycle wherein	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	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.	
	<b>ESS10:</b> 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.  Specific measures for the identified PPAPs must be identified and laid out in a Stakeholder Engagement Plan.	<b>Prakas on Public Participation in Environmental Impact Assessment (2017)</b> 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	Prepare, disclose, and implement the SEPs for subproject activities, consistent with ESMF and ESS10	
Vulnerable Groups	<b>ESS1:</b> Environmental social assessment must include adverse risks and impacts that may disproportionately affect certain groups, especially the disadvantaged and vulnerable.  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)	<b>Law on the Protection and the Promotion of the Rights of Persons with Disabilities</b> , 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.”	Focus on vulnerable groups in the ESIA process is not as strongly provided in the RGC policies as in the WB ESS.  For the sub-projects involving vulnerable groups which may be impacted, measures to avoid disruptions to waste-based livelihoods will be prepared, adopted and implemented with meaningful consultation with affected persons in accordance with ESS1. Specific attention will be paid to children waste-pickers and their families/guardians to develop suitable measures and additional support measures, such as support for registration and application for available social programs <sup>27</sup> , school enrollment and materials, skill	MOE, MOI, MPWT
	<b>Directive on Addressing Risks and Impacts on Disadvantaged or Vulnerable Individuals or Groups:</b> the bank directive defines disadvantaged or vulnerable individuals as “individuals who, by virtue of,	<b>National Policy on Ageing 2017-2030</b> defines 60 years as the cut-off age for older persons.  <b>Prakas on the Prohibition of Hazardous Child Labour (2004)</b> of the Ministry of Social Affairs, Labor, Vocational Training and Youth		

<sup>27</sup> Such as application for IDPoor Card, the new Family Benefits Package.

Item	Applicable WB Policy	Relevant RGC Policy	Policy Gaps Identified and Actions Suggested	Responsible Party
	<p>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>Rehabilitation that defines minors as individuals below 18 years of age.</p> <p><b>Law on the Prevention of Domestic Violence and the Protection of Victims (2005)</b> 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</p>	<p>training etc on the basis of social baseline studies for each of the applicable sub-projects</p>	

## 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**

<b>Environmental</b>	<ul style="list-style-type: none"> <li>• 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• 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</li> <li>• 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.</li> <li>• 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</li> <li>• 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.</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>

	<ul style="list-style-type: none"> <li>• 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.</li> <li>• There is also risk of Gender Based violence due to labor influx.</li> <li>• 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.</li> <li>• 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.</li> </ul>
<b>Public Health and OHS</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Lack of training, awareness, and provision of safety equipment (PPE) put both sanitation staff and waste-pickers at risk.</li> <li>• Illegal dumping of hazardous waste, in particular hospital waste, on the landfill put the health and safety of workers and waste-pickers at risk.</li> <li>• Poorly operated transfer stations and transport equipment pose risks to health and safety of sanitation workers and waste-pickers.</li> </ul>

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 skill training and additional livelihood support for poor and vulnerable waste-pickers working in some of the project locations.

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 low risks but will be further assessed during Project implementation. 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 there may be downstream impacts and particularly vulnerable groups, such as waste-pickers may be affected, specifically children and women, potential downstream impacts and impacts on these vulnerable groups will be assessed and these impacts will be included in assessment and consultations on relevant TA activities. The indirect and cumulative impacts of the possibly downstream impacts related to technical assistance will also be taken into account.

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.

Summarizing, the technical assistance activities of this project are included under Component 1 and Component 2. In terms of the types of proposed technical assistance activities under the Project, there are no types of TA foreseen that may assist in preparation of future infrastructure investments outside the infrastructure investments financed under Component 3 of the Project. There are also substantial amount of TA activities focusing on capacity building activities, information systems and communications and outreach with expected minimum or low social or environmental risks and impacts. However, type of TA focusing on 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, promotion of alternative products, or others. The risks and impacts of these type of TA activities are considered as low (for capacity building TA) to moderate (for policies and regulations) based on the ESF risk classification. This will be further assessed during project implementation specifically for the TA activities focused on policies and regulations. In cases where there could be possibly downstream impacts and particularly

for vulnerable groups, such as where waste-pickers may be affected, potential downstream impacts will be assessed as part of the TA including integration of environmental and social objectives and implications as well as analysis of alternatives and capacity building as part of the TA process and consultations and stakeholder engagement will be required. This will include aspects of ESS1 for inclusion of vulnerable groups and aspects of ESS10 for effective and inclusive stakeholder engagements, where appropriate and relevant.

#### **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 ESIA 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"> <li>• Monitoring of air quality in residential areas during construction phase to be put in place</li> <li>• Limit construction hours (day times)</li> <li>• Stabilize the exposed surfaces</li> <li>• Minimize activities that suspend dust particles</li> <li>• Apply water to the areas to be excavated, loading and unloading areas and unpaved roads</li> <li>• Develop a wheel wash at the entrance to public roads or exit of the landfill construction site</li> <li>• Implement speed controls on-site</li> <li>• Maintain enough loading capacity of lorries and barges to avoid spillage</li> <li>• Cover soil stockpiles with erosion control blankets</li> <li>• Use hoarding to avoid wind-blown dust</li> <li>• Apply good construction practices</li> </ul>
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"> <li>• Generally, it is expected that the noise will not be high enough to interrupt sleep or disrupt normal activity.</li> <li>• 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.</li> <li>• Optimize the use of machines and noisy equipment</li> <li>• In case of receiving complaints from neighboring areas regarding noisy operations acoustic barriers can be placed</li> <li>• Construction works should be stopped at night-time;</li> </ul>

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"> <li>• 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).</li> <li>• Ensure that the height of the spoil will not cause unaccepted visual impacts to adjacent areas</li> <li>• Use excavated soil in the landfill development or usage in establishing side embankments for containing the waste.</li> <li>• Use excavated soil for coverage for closing of old cells (re-cultivation layers of the final cover)</li> <li>• 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</li> </ul>
Water Quality	Accidental spillage of hazardous chemicals and materials	<ul style="list-style-type: none"> <li>• Store all hazardous materials in a dedicated bunded storage area constructed and permitted in accordance with the relevant regulations               <ul style="list-style-type: none"> <li>• Vehicle oil changes and refueling to take place only at designated areas</li> <li>• Any wastewater containing fuels, chemicals and other lubricants to be collected, stored and disposed of in accordance with relevant hazardous waste regulations</li> <li>• Surface water management sub-plan to be developed. This is to describe surface water systems and drainage structures to be installed during construction phase</li> </ul> </li> </ul>
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"> <li>• Avoid or minimize the generation of waste materials</li> <li>• Construction wastes could potentially be used in the landfill construction or properly disposed after cell construction is complete</li> <li>• Designate a waste storage area with provision for waste segregation prior to disposal</li> <li>• 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</li> <li>• Vehicle oil changes and refueling to take place only at designated areas</li> <li>• Ensure that spills kits are provided through the construction site, and that people are trained in their usage</li> </ul>
Construction traffic	Increased construction traffic in an uncontrolled setting	<ul style="list-style-type: none"> <li>• Controlled access arrangements to be put in place around any active construction site</li> <li>• All truck drivers to demonstrate that they hold the correct licenses and training certification for the class of vehicle they are operating</li> <li>• All speed limits and road rules for vehicles to be enforced</li> <li>• Traffic control points to be implemented at all entry and exit points to ensure that uncontrolled pedestrian and motorbike interactions are limited</li> <li>• Implement the grievance procedure such that community members can notify the sub-project if any project vehicles have been driving in an unsafe manner</li> <li>• Emergency response procedures are to include procedures for motor vehicle accidents</li> </ul>

**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.

<b>Impact</b>	<b>Description</b>	<b>Preliminary Mitigation measures</b>
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"> <li>• Lining and Leachate Collection System</li> <li>• Waste placement and daily cover</li> <li>• Leachate Reduction</li> <li>• Leachate Treatment Plant</li> <li>• Ensure access to safe water supply for local communities</li> <li>• (Ground)water quality monitoring</li> </ul>
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"> <li>• Landfill Gas Collection and Treatment with potential for using biogas for cooking for neighboring communities</li> <li>• Composting facilities with potential for using compost for neighboring communities</li> </ul>
Ecosystems, water, biodiversity	All current sites are developed and operated as open dumpsite, without any measures in place to prevent	<ul style="list-style-type: none"> <li>• Thorough site assessment process to prevent sites to be located in sensitive areas</li> <li>• Daily waste coverage</li> </ul>

	pollution. Some potential sites are located in sensitive areas of high ecological significance.	<ul style="list-style-type: none"> <li>• Leachate collection and treatment system</li> <li>• Installation of lining systems</li> <li>• Zoning of vital habitats and ecosystems</li> <li>• Monitoring of species presence and pollution</li> <li>• Flood protection measures</li> <li>• Not accepting hazardous waste</li> </ul>
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"> <li>• Daily waste cover,</li> <li>• Use excavated soil in daily operations: usage as daily cover of waste</li> <li>• Installation of gas collection and treatment system</li> <li>• Material recovery and composting facility</li> </ul>
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"> <li>• Municipal regulations for landfill operation to provide a list of acceptable and nonacceptable waste. Non-acceptable waste needs to be strictly forbidden from admission</li> <li>• Awareness to avoid a mixing of waste</li> <li>• All workers to be provided with protection equipment, training in waste handling, and strict supervision.</li> <li>• Prepare emergency response plan</li> </ul>
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"> <li>• Daily waste coverage</li> <li>• Windbreak trees</li> <li>• Fencing of site and buffer zone with tree screening to reduce visual impacts</li> <li>• Maximum height of waste disposal to reduce visual impacts</li> </ul>
Increased waste truck traffic	Increased waste trucks traffic	<ul style="list-style-type: none"> <li>• All speed limits and road rules for vehicles to be enforced</li> <li>• Traffic control points to be implemented at all entry and exit points to ensure that uncontrolled pedestrian and motorbike interactions are limited</li> <li>• Implement the grievance procedure such that community members can notify the sub-project if any project vehicles have been driving in an unsafe manner</li> <li>• Emergency response procedures are to include procedures for motor vehicle accidents</li> <li>• Procedure for waste spills from trucks</li> </ul>
Impacts after Landfill Closure	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	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Final capping system be installed progressively through time after the waste has been placed to its ultimate level over each cell or portion thereof.</li> <li>• Establishment of impermeable linings may be considered, as well as development of alternative water sources for surrounding residential a</li> <li>• Measures to minimize remaining leachate after closure will depend on detailed assessments on</li> </ul>

	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.	groundwater pollution, soil permeability, and impacts on any nearby residential areas.
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### **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 – 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.<sup>28</sup> 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

<sup>28</sup> Definition lifted from ESS5.

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.

### **Vulnerable and disadvantaged groups: waste pickers**

With the transformation of open waste dumpsite into sanitary landfills, there is a risk of loss of livelihoods of waste pickers at the existing dumpsites in case of losing access to waste resources. This can have livelihood impacts on waste pickers, specifically for those waste pickers who do not have other sources of income.

These risks will be mitigated through ensuring continued access to waste resources for all adult waste pickers under improved Occupational, Health and Safety conditions in the Material Recovery Facilities and providing priority opportunities to apply for suitable jobs within the landfill management company. For waste pickers who are solely depending on waste picking in terms of livelihoods and for child waste pickers additional support measures are applicable. The specific mitigation measures for different groups of waste pickers are outlined below.

*Avoiding disruptions to waste-based livelihoods measures as well as additional support measures for adult waste pickers > 18 years*

The project will allow adult waste pickers to continue sorting and recovering waste in the material recovery facilities, under improved working (Occupational, Health and Safety) conditions and with control measures such as registration to avoid influx. In addition, the Project will provide adult waste pickers priority to apply for a suitable job in the landfill management company and provide support for training in necessary skills. These are the main measures to avoid livelihood impacts due to loss of access to waste resources. In addition, additional support measures apply. Key measures are as follows:

- *To avoid disruptions to waste-based livelihoods measures:* allow adult waste pickers access to recyclables (sorting/material recovery facility) and composting facility of the new

landfill in accordance with occupational health and safety guidelines. The landfill management company will undertake registration and age verification, and only those who are registered waste pickers on the basis of a census to be carried out for Project sites can enter and engage in waste sorting in the sorting/material recovery facility. Unregistered relatives or family members of waste pickers will not be allowed. This will ensure that the Project will not remove access to waste resources and avoid economic displacement and at the same time managing influx.

- *Additional measures to support vulnerable and disadvantaged group of waste pickers*-specifically those who are depending solely on waste picking in terms of livelihoods and do not have IDpoor equity cards yet- consist of providing assistance to obtain equity cards through the on-demand IDPoor program<sup>29</sup> when the program's selection criteria are met. In addition, waste pickers will receive information and referral to other existing social support programmes provided by Government agencies or existing NGOs in the respective province, such as the new Family Benefits package which is expected to start during 2023<sup>30</sup>
- The design and management arrangements for the Material Recovery Facilities and composting facilities will include measures to allow vulnerable groups and specifically woman to recover waste with proper Occupational, Health and Safety conditions and provide skill training including with focus on (vulnerable) women.

#### *Support measures for children between 14-18*

The project will provide support to child waste pickers. This support will not be provided as cash or credit as livelihood restoration would not apply as children should be in school. Support will be provided through existing government social support program and existing NGOs. In case where existing programs are lacking, the Project will provide additional support with an option to use Grant financing under this project. The Ministry of Interior and relevant provincial and municipal authorities are the responsible institutions for organizing and implementing measures to provide support measures of these children as following:

- Provide free access to new landfill site including sorting/material recovery facility (to sort waste to extract recyclables) and composting facility to work under supervised conditions to ensure proper occupational, health and safety conditions for these children to engage in non-hazardous work and where it will not affect their education. The concerned landfill management company will undertake registration and age verification, and only those who are registered waste pickers on the basis of a census to be carried out for Project sites can enter and undertake waste sorting in the

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<sup>29</sup> The IDpoor program aims to achieve the integration of identification of poor households as a routine task of Commune Councils and their support structures and use as a tool for targeting services and assistance to poor households. The whole process of application and processing through the on-demand IDPoor program takes about one month. This can start as soon as sites are selected.

<sup>30</sup> The new Family Benefits Package has as objectives (i) to provide comprehensive and adequate social assistance covering families (ii) improve the accessibility and coverage of social assistance benefits and (iii) strengthen the institutional framework for social assistance delivery. This program is foreseen to support cash transfer programs for mothers and children in primary and lower and upper secondary school. The new Family Benefit Package is the successive program of the cash transfer program that was instituted by the Government during COVID-19 and foreseen to become effective in the course of 2023.

sorting/material recovery facility. Their relatives, family members or friends will not be allowed if they don't have their name in the registration list.

- For those children waste pickers whose families' income is solely dependent on waste picking in terms of livelihoods and haven't received an equity card yet, the project will assist the family in obtaining IDpoor equity cards according to the established mechanism (On-Demand ID Poor) when meeting the eligibility criteria.
- Conduct social need assessment on the basis of census and social economic surveys once the Project sites are selected and provide necessary support that helps child waste pickers continue going to school<sup>31</sup> and refer the child waste pickers to existing social programs provided by government or NGOs.
- Organize and operate a community learning center (can be operated in existing primary schools near existing waste disposal sites) for children to learn life skills, English or remedial classes outside of school times. Administration of district or commune manages this center through the community preschool management approach and further guidance from the project. The organizing and functioning this community learning center could make use of grant financing for the project.
- Support the enrollment in Vocational Training Programs of government and existing NGO programs in each target provinces.

*Support measures for children under 14-years of age.*

To keep children under 14 years outside the new landfill and stop working, the following support measures are applied:

- Conduct an extensive social assessment with families who have children accompanying or working on the current dumpsite to identify their social needs and living conditions.
- Closely monitor children's families whose income depend solely on waste picking and assist them in getting Equity Cards (ID-Poor Household) when they meet the eligibility criteria. This will be carried out by the ID Poor committee at the commune level with support from Project implementation entities at the provincial level.
- Based on the needs assessment, the Project will facilitate identified children to get existing social support programs implemented by the government or NGOs in each target provinces including learning material, scholarship, food program provided at school (implemented by World Food program and MoEYS in Siem Reap).
- The Project can use parts of closed and rehabilitated waste disposal sites (in case available) or free space in primary school near disposal sites to organize these as playgrounds and sports facilities.

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<sup>31</sup> School fee support would not be needed as according to article 68 of the Cambodian constitution, all Cambodian nationals have the right to receive free education from primary school to secondary school.

- Encourage children to join education activities in community learning center such as life skill, English, or extracurricular classes outside public school time.

Avoiding disruptions to waste-based livelihoods measures as well as additional support measures will be externally monitored. 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 include specific attention to the detailed design and site-specific environmental and social assessment for the material recovery facilities and determination of non-hazardous categories of work, specifically (i) the purpose of the material recovery and composting facilities is not as standard generic jobs or industries but as community facilities to support the continuation of access to waste resources; (ii) the amount of mechanization and machinery as part of these facilities will be detailed in the detail design and site-specific ESIA, which will make the informed and consulted determination on the type of opportunities and restrictions for the 14-18 years' age category. Types of non-hazardous work that could be considered and will be defined as part of the site-specific ESIA are: further segregation and packaging of first order sorted recyclables, cleaning of rest and cleaning facilities, non-machinery work with the organic compost etc. The determination and conditions for non-hazardous work for children between 14-18 will abide by ILO standards and good international industry practice and the waste management company in charge of the management and operation of the landfill will be responsible for age verification and access and supervise the community recovery facilities for appropriate OHS conditions for which specific OHS/hazard risk assessment will be done as part of the site-specific ESIA. Furthermore, the facility designs will take into account the safety and security of women and children (such as proper lighting, gender-segregated facilities); and trainings will include awareness raising on sexual exploitation and abuse/sexual harassment, as well as information on lodging complaints and reaching out to service providers.

This will be determined during the first year of the project implementation and be accompanied with the preparation of the Detailed Resettlement Plan and census and cut-off date. The preliminary risk rating will also be reconsidered at this stage.

**Social Risks – Pre-construction and construction phase**

Risks	Description	Preliminary Mitigation measures
Resettlement, economic displacement and livelihoods impacts and Occupational Health and Safety	This may include impacts on waste pickers at the existing dumpsite; impacts on landowners; impacts on nearby communities.	<ul style="list-style-type: none"> <li>• 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 in the Material Recovery Facilities.</li> <li>• Significant attention to OHS procedures and supervised by supervising engineer</li> <li>• Meaningful consultations with neighbouring communities, waste pickers and other potential affected people of a potential site</li> <li>• Development of Detailed Resettlement Plan and detailed monitoring of implementation.</li> </ul>

		<ul style="list-style-type: none"> <li>• Ensure awareness of job opportunities within surrounding communities</li> <li>• To avoid disruptions to waste-based livelihoods measures: allow adult waste pickers access to recyclables (sorting/material recovery facility) and composting facility of the new landfill in accordance with occupational health and safety guidelines. The landfill management company will undertake registration and age verification, and only those who are registered waste pickers on the basis of a census to be carried out for Project sites can enter and engage in waste sorting in the sorting/material recovery facility. Unregistered relatives or family members of waste pickers will not be allowed. This will ensure that the Project will not remove access to waste resources and avoid livelihood impacts and at the same time managing influx.</li> </ul>
<p>Vulnerable and disadvantaged groups: waste pickers, specifically child waste pickers</p>	<p>Additional measures to support vulnerable and disadvantaged groups of waste pickers, specifically child waste pickers As per the labor law in Cambodia, the minimum age for any employment is 14, with a child between the age of 14 and 18 only able to be employed or engaged under certain circumstances (see on the right)</p> <p>Children waste pickers specifically under 14, cannot be permitted to participate in waste recycling activities and will require support measures.</p>	<ul style="list-style-type: none"> <li>• Additional measures to support vulnerable and disadvantaged group of waste pickers- specifically those who are depending solely on waste picking in terms of livelihoods and do not have IDpoor equity cards yet- consist of providing assistance to obtain equity cards through the on-demand IDPoor program when the program's selection criteria are met. In addition, waste pickers will receive information and referral to other existing social support programmes provided by Government agencies or existing NGOs in the respective province, such as the new Family Benefits package which is expected to start during 2023</li> <li>• The design and management arrangements for the Material Recovery Facilities and composting facilities will include measures to allow vulnerable groups and specifically woman to recover waste with proper Occupational, Health and Safety conditions and provide skill training including with focus on (vulnerable) women.</li> </ul> <p><i>Support measures for children between 14-18</i></p> <p>The project will provide support to child waste pickers. This support will not be provided as cash or credit as livelihood restoration would not apply as children should be in school. Support will be provided through existing government social support program and existing NGOs. In case where existing programs are lacking, the Project will provide additional support with an option to use Grant financing under this project. The Ministry of Interior and relevant provincial and municipal authorities are the responsible institutions for organizing and implementing measures to provide support measures of these children as following:</p>

		<ul style="list-style-type: none"> <li>• Provide free access to new landfill site including sorting/material recovery facility (to sort waste to extract recyclables) and composting facility to work under supervised conditions to ensure proper occupational, health and safety conditions for these children to engage in non-hazardous work and where it will not affect their education. The concerned landfill management company will undertake registration and age verification, and only those who are registered waste pickers on the basis of a census to be carried out for Project sites can enter and undertake waste sorting in the sorting/material recovery facility. Their relatives, family members or friends will not be allowed if they don't have their name in the registration list.</li> <li>• For those children waste pickers whose families' income is solely dependent on waste picking in terms of livelihoods and haven't received an equity card yet, the project will assist the family in obtaining IDpoor equity cards according to the established mechanism (On-Demand ID Poor) when meeting the eligibility criteria.</li> <li>• Conduct social need assessment on the basis of census and social economic surveys once the Project sites are selected and provide necessary support that help child waste pickers continue going to school and refer the child waste pickers to existing social programs provided by government or NGOs.</li> <li>• Organize and operate a community learning center (can be operated in existing primary schools near existing waste disposal sites) for children to learn life skills, English or remedial classes outside of school times. Administration of district or commune manages this center through the community preschool management approach and further guidance from the project. The organizing and functioning this community learning center could make use of grant financing for the project.</li> <li>• Support the enrollment in Vocational Training Programs of government and existing NGO programs in each target provinces.</li> </ul> <p><i>Support measures for children under 14-years of age.</i> To keep children under 14 years outside the new landfill and stop working, the following support measures are applied:</p> <ul style="list-style-type: none"> <li>• Conduct an extensive social assessment with families who have children accompanying or working on the current dumpsite to identify their social needs and living conditions.</li> <li>• Closely monitor children's families whose income depends solely on waste picking and assist them in getting Equity Cards (ID-Poor</li> </ul>
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		<p>Household) when they meet the eligibility criteria. This will be carried out by the ID Poor committee at the commune level with support from Project implementation entities at the provincial level.</p> <ul style="list-style-type: none"> <li>• Based on the needs assessment, the Project will facilitate identified children to get existing social support programs implemented by the government or NGOs in each target provinces including learning material, scholarship, food program provided at school (implemented by World Food program and MoEYS in Siem Reap).</li> <li>• The Project can use parts of closed and rehabilitated waste disposal sites (in case available) or free space in primary school near disposal sites to organize these as playgrounds and sports facilities.</li> <li>• Encourage children to join education activities in community learning center such as life skill, English, or extracurricular classes outside public school time.</li> </ul>
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"> <li>• 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.</li> </ul>
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"> <li>• Supervision of the construction works and clear obligations and code of conduct for firms.</li> <li>• Regular information on progress and Environmental and Social compliance for local communities</li> <li>• Establishing a clear grievance redress system</li> <li>• Monitor labor management procedures</li> <li>• Communicate information about the hours of construction with the local population</li> <li>• Supervise application of OH&amp;S regulations and code of conduct on SEA/SH</li> <li>• Public hearings and meaningful consultations.</li> <li>• Restriction from access to the construction site</li> </ul>

### Social Risks – During operations phase

Impact	Description	Preliminary Mitigation measures
Community Health and Safety, livelihood restoration 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	<ul style="list-style-type: none"> <li>• 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</li> </ul>

	<p>workers due to improved OHS practices.</p>	<ul style="list-style-type: none"> <li>• Landfill gas collection and composting to remove larger part of the organic fraction</li> <li>• Leachate collection and treatment</li> <li>• Lining system and daily waste cover and in case of closure final waste cover</li> <li>• Fencing of site, registration procedures to only allow access to registered waste pickers per census</li> <li>• Integration of waste pickers into the waste material recovery and composting facilities through provision of PPE, training and adherence to OHS procedures</li> <li>• Provision of appropriate PPEs and training</li> <li>• Health checks</li> <li>• Provision of safe water supply to surrounding communities</li> <li>• Showers, washing basins, clean toilets, changing rooms, etc. at facilities</li> <li>• To avoid disruptions to waste-based livelihoods measures: allow adult waste pickers access to recyclables (sorting/material recovery facility) and composting facility of the new landfill in accordance with occupational health and safety guidelines. The landfill management company will undertake registration and age verification, and only those who are registered waste pickers on the basis of a census to be carried out for Project sites can enter and engage in waste sorting in the sorting/material recovery facility. Unregistered relatives or family members of waste pickers will not be allowed. This will ensure that the Project will not remove access to waste resources and avoid livelihood impacts and at the same time managing influx</li> </ul>
<p>Vulnerable and disadvantaged groups of waste pickers, specifically child waste pickers</p>	<p>Additional measures to support vulnerable and disadvantaged groups of waste pickers, specifically child waste pickers</p> <p>As per the labor law in Cambodia, the minimum age for any employment is 14, with a child between the age of 14 and 18 only able to be employed or engaged under certain circumstances (see on the right)</p> <p>Children waste pickers specifically under 14, cannot be permitted to participate in waste recycling activities and will require support measures.</p>	<ul style="list-style-type: none"> <li>• Additional measures to support vulnerable and disadvantaged group of waste pickers- specifically those who are depending solely on waste picking in terms of livelihoods and do not have IDpoor equity cards yet- consist of providing assistance to obtain equity cards through the on-demand IDPoor program when the program's selection criteria are met. In addition, waste pickers will receive information and referral to other existing social support programmes provided by Government agencies or existing NGOs in the respective province, such as the new Family Benefits package which is expected to start during 2023</li> <li>• The design and management arrangements for the Material Recovery Facilities and composting facilities will include measures to allow vulnerable groups and specifically woman to recover waste with proper Occupational, Health and Safety conditions and provide skill training including with focus on (vulnerable) women.</li> </ul> <p><i>Support measures for children between 14-18</i></p>

		<p>The project will provide support to child waste pickers. This support will not be provided as cash or credit as livelihood restoration would not apply as children should be in school. Support will be provided through existing government social support program and existing NGOs. In case where existing programs are lacking, the Project will provide additional support with an option to use Grant financing under this project. The Ministry of Interior and relevant provincial and municipal authorities are the responsible institutions for organizing and implementing measures to provide support measures of these children as following:</p> <ul style="list-style-type: none"> <li>• Provide free access to new landfill site including sorting/material recovery facility (to sort waste to extract recyclables) and composting facility to work under supervised conditions to ensure proper occupational, health and safety conditions for these children to engage in non-hazardous work and where it will not affect their education. The concerned landfill management company will undertake registration and age verification, and only those who are registered waste pickers on the basis of a census to be carried out for Project sites can enter and undertake waste sorting in the sorting/material recovery facility. Their relatives, family members or friends will not be allowed if they don't have their name in the registration list.</li> <li>• For those children waste pickers whose families' income is solely dependent on waste picking in terms of livelihoods and haven't received an equity card yet, the project will assist the family in obtaining IDpoor equity cards according to the established mechanism (On-Demand ID Poor) when meeting the eligibility criteria.</li> <li>• Conduct social need assessment on the basis of census and social economic surveys once the Project sites are selected and provide necessary support that help child waste pickers continue going to school and refer the child waste pickers to existing social programs provided by government or NGOs.</li> <li>• Organize and operate a community learning center (can be operated in existing primary schools near existing waste disposal sites) for children to learn life skills, English or remedial classes outside of school times. Administration of district or commune manages this center through the community preschool management approach and further guidance from the project. The organizing and functioning this community learning center could make use of grant financing for the project.</li> </ul>
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		<ul style="list-style-type: none"> <li>• Support the enrollment in Vocational Training Programs of government and existing NGO programs in each target provinces.</li> </ul> <p><i>Support measures for children under 14-years of age.</i> To keep children under 14 years outside the new landfill and stop working, the following support measures are applied:</p> <ul style="list-style-type: none"> <li>• Conduct an extensive social assessment with families who have children accompanying or working on the current dumpsite to identify their social needs and living conditions.</li> <li>• Closely monitor children’s families whose income depend solely on waste picking and assist them in getting Equity Cards (ID-Poor Household) when they meet the eligibility criteria. This will be carried out by the ID Poor committee at the commune level with support from Project implementation entities at the provincial level.</li> <li>• Based on the needs assessment, the Project will facilitate identified children to get existing social support programs implemented by the government or NGOs in each target provinces including learning material, scholarship, food program provided at school (implemented by World Food program and MoEYS in Siem Reap).</li> <li>• The Project can use parts of closed and rehabilitated waste disposal sites (in case available) or free space in primary school near disposal sites to organize these as playgrounds and sports facilities.             <ul style="list-style-type: none"> <li>• Encourage children to join education activities in community learning center such as life skill, English, or extracurricular classes outside public school time.</li> </ul> </li> </ul> <p>Avoiding disruptions to waste-based livelihoods measures through continued access to waste resources as well as additional support measures will be externally monitored<sup>32</sup>.</p>
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,	<ul style="list-style-type: none"> <li>• Ensure awareness of job opportunities within surrounding communities and consideration for poor and vulnerable groups.</li> <li>• Transparent information sharing about the created job opportunities particularly in local areas</li> <li>• Local sourcing of supplies and materials whenever possible</li> </ul>

<sup>32</sup> Monitoring can include the following: (i) monitoring of entry of eligible waste pickers in community Material Recovery and composting facility on the basis of the census and site-specific ESIA, (ii) job opportunities and contractual employments of waste pickers with landfill company; (iii) monitoring/coordination of the additional measures for the child waste pickers, specifically after school classes and other items that may come out of need assessment (iv) monitoring of waste pickers application and eligibility for IDpoor card; (iv) number of training courses and skill development; (v) OHS working conditions adults and specific 14-18 age category (as per definitions and conditions of the site specific ESIA); (vi) handling complaints and grievances. Indicators will be finalized as part of site-specific ESIA based on needs assessment in consultation with waste pickers.

	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	
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"> <li>• Gas collection and treatment</li> <li>• Leachate collection and treatment</li> <li>• Lining system</li> <li>• Daily waste cover or in case of closure final waste cover</li> <li>• Waste sorting</li> <li>• Fencing and buffer zones</li> </ul>

## 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 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, material recovery, potentially production of RDF and composting facilities and transfer station. No plastic recycling technologies will be financed under the Project. 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.

The Technical Assistance activities under Component 1 focuses on: (i) improvement of waste classification and performance indicators for collection and disposal services; (ii) policies related to cost calculation, and rural service collection; (iii) guidelines for sanitary landfill design and operation, (iv) public awareness and (v) plastics. Component 1 is implemented by

the Ministry of Environment with a substantial capacity in solid waste and environment. Also, capacity building and technical assistance is included in Component 2 to support municipalities in improvement of monitoring of waste collection and disposal services and collecting waste fees for payment of services as well as operational solid waste management support and with expected low environmental and social risks and impacts. Therefore, the risks of the TA activities are classified as low risk where potential downstream impacts can be included as part of the TA activities, but will be further determined during project implementation. For the infrastructure and equipment investments activities and construction & operation, for the sub-projects site-specific ESIA, ESMPs and SEPs will be prepared and DRPs 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 <sup>33</sup> , LMP, IPP etc.
Material recovery, RDF 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 <sup>34</sup> , 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 <sup>35</sup> , 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

<sup>33</sup> As per the definition of the SOP-LAR

<sup>34</sup> 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.

<sup>35</sup> 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.

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;
- 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	<b>Sub-decree on Control of Air Pollution and Noise Disturbance, 2000</b> Annex 3, Ambient Air Quality Standard, of	World Health Organization (WHO) Air Quality Guidelines, global update 2005
Noise	<b>Sub-decree on Control of Air Pollution and Noise Disturbance, 2000</b> 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)	<b>Drinking Water Quality Standards, 2004</b>	WHO Guidelines for Drinking-water Quality, Fourth Edition, 2011

Environmental Media	National Standard	International Standard
Groundwater (ambient)	Ministry of Handicrafts and Industry <b>Groundwater Quality Standards</b>	EU Groundwater Directive 2006/118/EC
Surface water quality	<b>Sub-decree on Water Pollution Control, 1999</b> 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	<b>Sub-decree on Water Pollution Control, 1999</b> 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**

<b>Landfill Siting</b>
<ul style="list-style-type: none"> <li>• Must have stable geology</li> <li>• Must avoid being near particularly vulnerable/sensitive ecosystems</li> <li>• Must avoid being near groundwater / surface water resources</li> </ul>
<b>Design and Operation</b>
<ul style="list-style-type: none"> <li>• Must follow existing national requirements and international standards to minimize leachate generation</li> <li>• Use of low-permeability landfill liners to prevent leachate migration and landfill gas</li> <li>• Use of leachate drainage and collection system</li> <li>• Minimize infiltration by using landfill cover (daily, intermediate, and final)</li> <li>• Minimize the daily exposed portion of the sanitary landfill facility where solid wastes are unloaded</li> <li>• Reduce infiltration of rainfall into deposited waste using perimeter drains and landfill cell compaction, slopes and daily cover materials</li> <li>• Prevent run-on of precipitation into the active area of the landfill by using berms or other diversions<sup>36</sup></li> <li>• Collect and control run-off from the active area of the landfill<sup>36</sup></li> </ul>
<b>Leachate Treatment</b>
<ul style="list-style-type: none"> <li>• Must be done onsite and/or discharge to municipal wastewater system</li> <li>• Treatment methods may include aerated lagoons, activated sludge, anaerobic digestion, artificial wetlands, recirculation, membrane filtration, ozone treatment, peat beds, sand filters, and methane stripping</li> </ul>

### Groundwater and Leachate Monitoring

<sup>36</sup> 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)

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

#### 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 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.

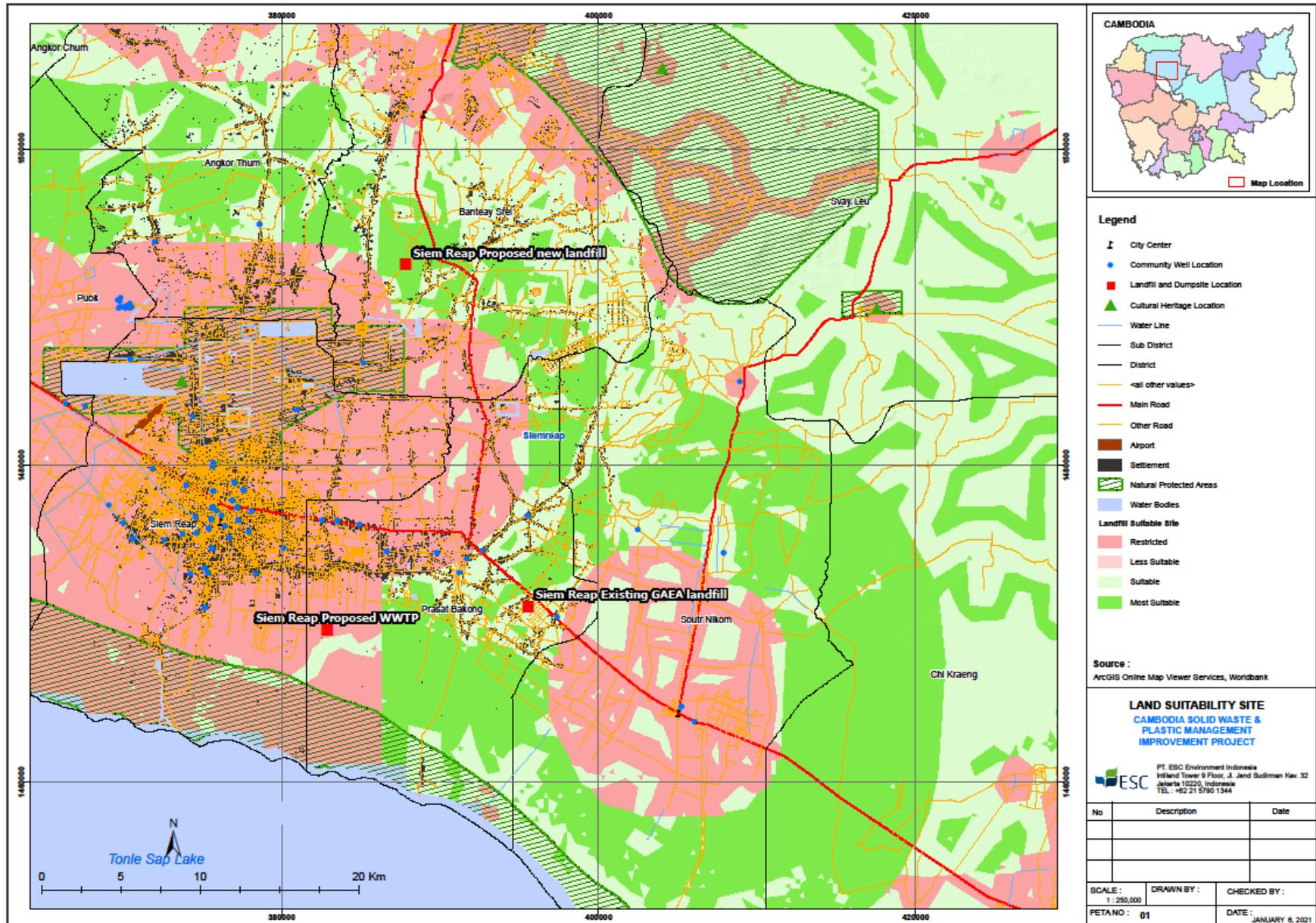
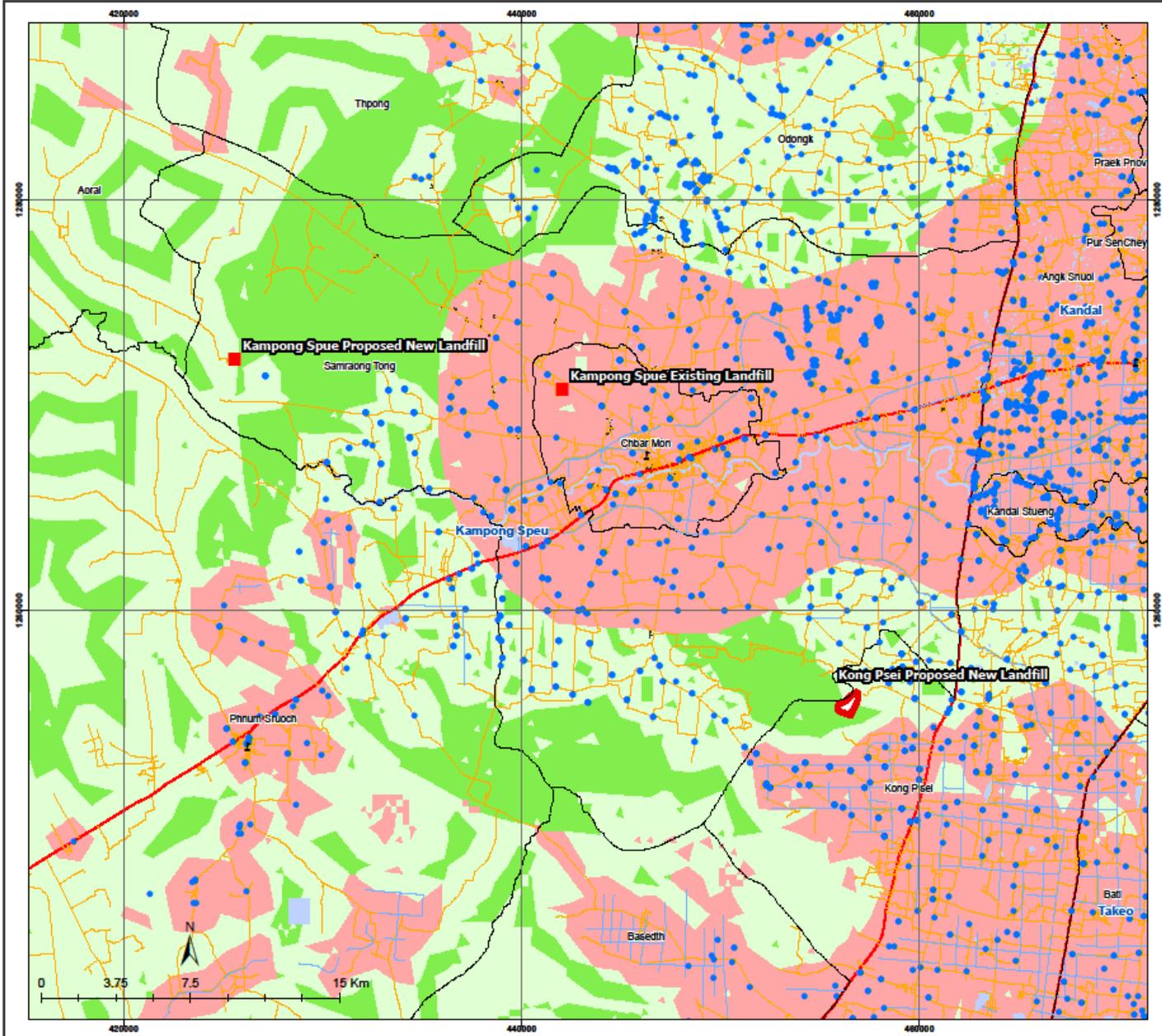


Figure 4.2-1: Site Suitability Map of Siem Reap



- Legend**
- City Center
  - Community Well Location
  - Landfill and Dumpsite Location
  - Cultural Heritage Location
  - Water Line
  - Sub District
  - District
  - <all other values>
  - Main Road
  - Other Road
  - Railway
  - Airport
  - Settlement
  - Natural Protected Areas
  - Water Bodies
- Landfill suitable site**
- Restricted
  - Less Suitable
  - Suitable
  - Most Suitable

Source :  
ArcGIS Online Map Viewer Services, Worldbank

**LAND SUITABILITY SITE**  
CAMBODIA SOLID WASTE & PLASTIC MANAGEMENT IMPROVEMENT PROJECT

PT. EDC Environment Indonesia  
Indraloka Tower 9 Floor, Jl. and Sudirman Kav. 32  
Jakarta 10220, Indonesia  
TEL : +62 21 5190 1344

No	Description	Date

SCALE : 1 : 250,000	DRAWN BY :	CHECKED BY :
PETANO : 01	DATE :	March 4, 2021

Figure 4.2-2: Site Suitability Map of Kampong Speu

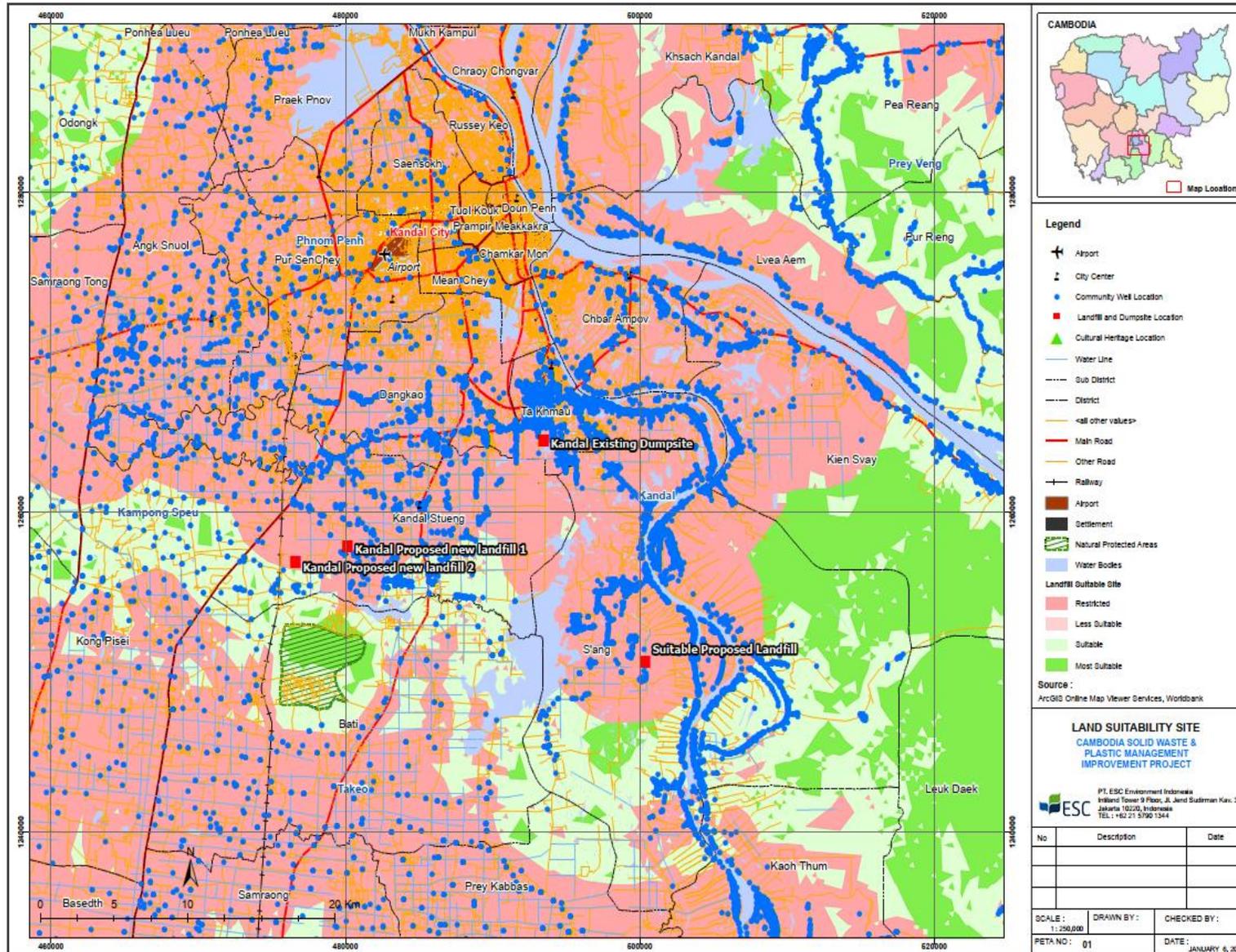


Figure 4.2-3: Site Suitability Map at Kandal

## 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) and related risks, impacts and mitigation measures 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"> <li>Existing site already zoned for landfill use and clayey soil material available.</li> <li>Additional area available</li> <li>Rehabilitation of the current site may yield further space</li> <li>Existing dumpsite will require closing in any case, therefore cost savings can be made through continued use and site extension</li> <li>Good road access and well located from city service area so that waste haul travel time is within 30 minutes</li> <li>Access to water and electricity utilities</li> <li>No flood risk or near environmentally sensitive receptors or cultural heritage sites</li> <li>Not within city expansion area for commercial/residential zones</li> <li>Current pollution will be resolved through rehabilitation</li> <li>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</li> </ul>	<ul style="list-style-type: none"> <li>Communities in relatively close distance (&lt;1.0 km)</li> <li>Part of the community has complained and requested site closure.</li> <li>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</li> </ul>	<ul style="list-style-type: none"> <li>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 ESF<sup>37</sup>.</li> <li>Current environmental and public health issues will be addressed through the Project (leachate treatment; smell; noise; piped clean water supply for communities; etc.)</li> <li>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.</li> <li>Community inhabitants may gain additional income through jobs created at the landfill, material recovery, and composting facility.</li> <li>Cost savings would be made through shared site management systems required for closure and extension (leachate treatment system, gas treatment, access control)</li> <li>A more elaborate comparison between options and preliminary environmental and social impacts is included in the preliminary ESIA</li> </ul>

**(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 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 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

<sup>37</sup> 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.

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.



**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.

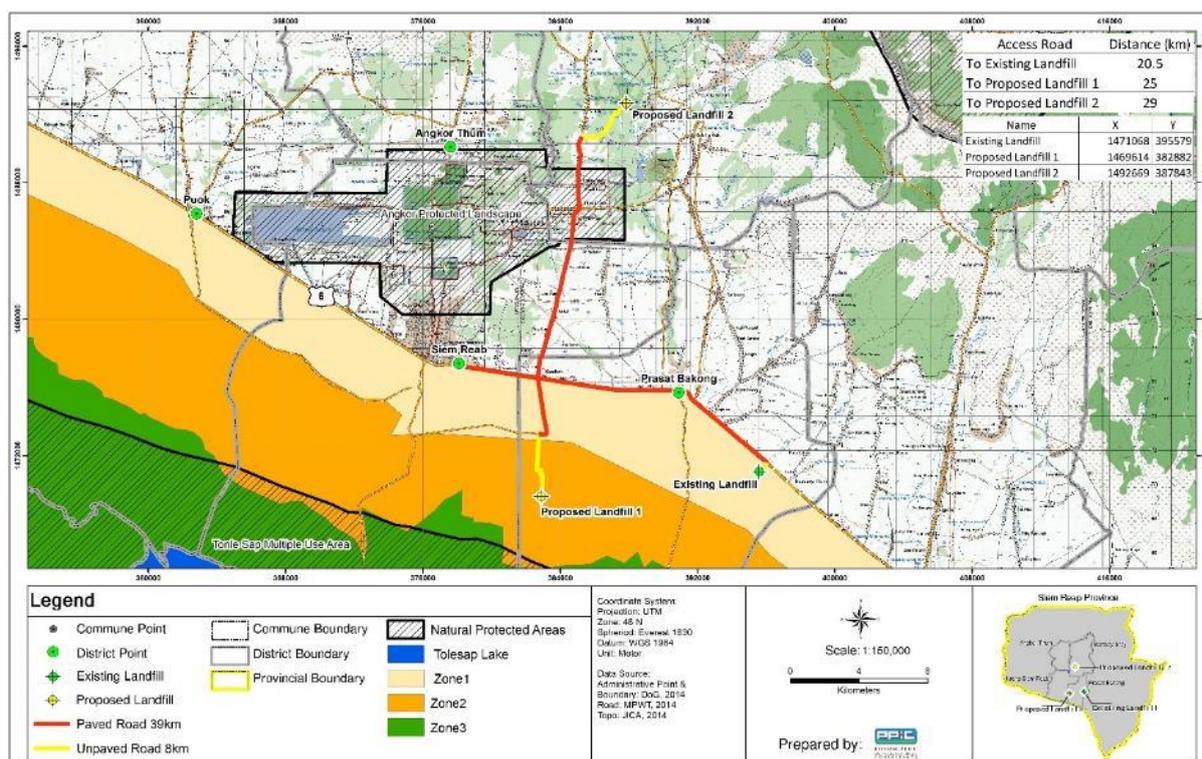


Figure 5: Tonle Sap Biosphere Reserve (TSBR) Zone Map

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"> <li>• 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</li> <li>• Large area (+50Ha) of public land available.</li> <li>• Currently &gt;2 km away from the nearest residential settlement.</li> <li>• The site is flat and appears to be underlain by a clayey soil material.</li> <li>• Planned ring-road construction, site access will be good,</li> <li>• suitable distance (&gt;11 km) from city center.</li> </ul>	<ul style="list-style-type: none"> <li>• High value residential city expansion area to the North,</li> <li>• Tonle Sap UNESCO biodiversity reserve and restricted development zone (South). The Tonle Sap Lake is the largest freshwater lake in Southeast Asia and designated as a Biosphere Reserve by UNESCO in 1997 due to its high biodiversity</li> <li>• The existing site access is in poor condition and passes through dense residential development.</li> <li>• Shallow groundwater and potential flood risk area.</li> <li>• During the wet season, leachate discharge will need to be stored or pumped offsite.</li> <li>• High social costs and risks as current waste-pickers would lose access to recyclables</li> <li>• Community Fishery present</li> </ul>	<ul style="list-style-type: none"> <li>• The potential new site has advantages from being co-located with the proposed new WWTP and for having an extensive area (+50 ha) available.</li> <li>• 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 the Tonle Sap Biosphere Reserve, and due to the impacts on waste pickers and workers at the existing site.</li> </ul>

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

Advantages	Disadvantages	Preliminary Assessment
		integrated into new facilities, provided with access to new site, or other livelihood measures • Further analysis to be based on ongoing site identification process

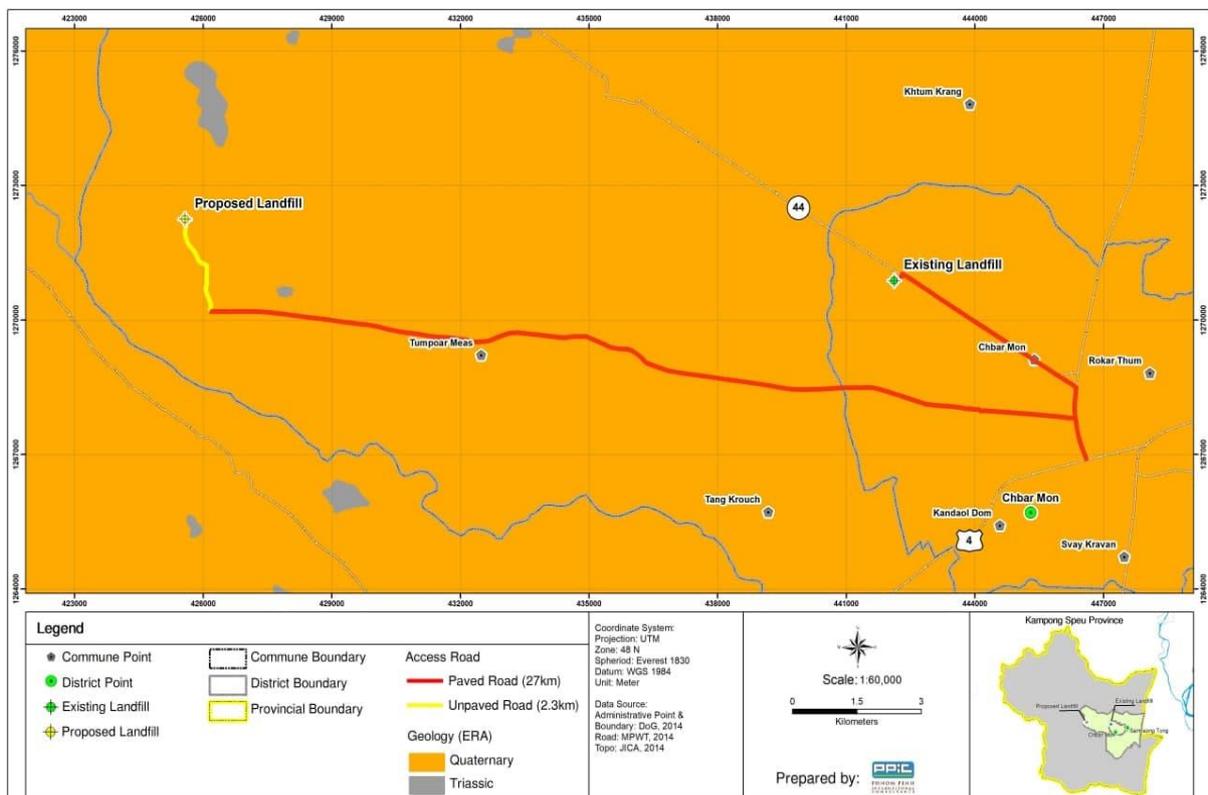
**(2) Closing of Sampov Dumpsite and Alternative Sanitary Landfill Site Option West-Northwest of Chbar Mon City**

**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"> <li>• Reported deep groundwater and low/no flood risk.</li> <li>• The area is relatively remote, with the nearest community &gt;1.0 km away, and away from any future planned urban development.</li> <li>• The provincial government reports that extensive area (as much as reasonably required) is available for the landfill development</li> </ul>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• The area is 24 km from the city centre.</li> <li>• The site boundary and ownership has not been clearly defined</li> <li>• 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.</li> </ul>	<p>Not suitable due to high cost of access road improvement and accessibility.</p> <ul style="list-style-type: none"> <li>• Although the site is suitable for landfill development, the remote location and poor access makes the site not suitable for development.</li> </ul>

### ***(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"> <li>• Reported deep groundwater and low/no flood risk.</li> <li>• The area is relatively remote, with the nearest community &gt;1.0 km away, and away from any future planned urban development.</li> <li>• Extensive area (61 ha) is available for the landfill development.</li> </ul>	<ul style="list-style-type: none"> <li>• The site is located 36 km, by national road, from the main waste service area.</li> <li>• The site is a greenfield site with potential environmentally sensitive receptors including the current spare wood and grassland cover and adjacent lake.</li> <li>• The site overlooked by a cultural heritage site; Buddhist Temple.</li> <li>• 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.</li> </ul>	<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"> <li>• 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.</li> </ul>

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"> <li>• The existing site is already used as a landfill and will require further investment for rehabilitation.</li> <li>• The site has good access to a nearby main (paved) road and city service area.</li> <li>• Additional land around the site is available.</li> <li>• 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.</li> <li>• The site is not reported as prone to flooding and generally not close to environmentally sensitive receptors or cultural heritage sites.</li> <li>• The site (from initial investigations) is underlain with impermeable clays</li> </ul>	<ul style="list-style-type: none"> <li>• Site is less than 1.0 km from residential settlements, which are rapidly expanding and is expected to reach the boundaries of the waste disposal area in the short future; community has complained of being directly impacted.</li> <li>• Site has shallow groundwater.</li> <li>• Current open dump has no environmental controls and will require extensive rehabilitation.</li> <li>• The incinerator has no environmental controls.</li> <li>• Current waste 'cells' have no liner, leachate collection or treatment, leading to potential pollution of groundwater.</li> <li>• 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 measures.</li> </ul>	<p>Conclusion: Closure of existing dumpsite with rehabilitation appears the most suitable option as there is insufficient space for continued use as waste disposal area due to the rapidly expanding community in the direction of the area.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• The current waste-pickers of the site would need to travel to the new landfill site to continue collecting recyclables and require livelihood measures .</li> <li>• 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.</li> </ul>

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 Prekko 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.

TA proposed under Component 1 and Component 2 does not include preparation of future infrastructure investments (besides the infrastructure investments financed under Component 3 of the Project and subject to their own extensive ES due diligence). It focuses on TA support to capacity building activities, support for policies and regulations, information systems and communications and outreach with minimum or low social or environmental risks and impacts.

Where the TA under C1 and C2 supports solid waste and plastics policies and regulations which may lead to downstream activities –such as promoting plastic waste recycling, composting, reduction of plastic packaging, and promotion of alternative products – the impacts of such activities are generally positive, and E&S risks associated with them preliminary indicated as low to moderate based on the ESF risk classification.

The TORs for the TA activities will be developed by the Client in the first and second year of Project Implementation, but E&S risks screening has been undertaken and summarized in “risks and impact table’ referenced below.

Component 1	Down-stream risks	Potential impacts with regard to different ESSS	Mitigation measures
Activities related to strengthening regulations and implementing agency’s capacity for planning, management and monitoring of private sector waste companies as well as development of design guidelines (Type 3)	Low	Positive environmental impacts for resource efficiency (ESS3) and community health and safety (ESS4) and environmental impact (ESS1)	Potential adverse environmental and social risks, if any, will be considered integrally as a part of their preparation.
Policy development and implementation related to public awareness, education, outreach, citizen engagement and cleanup (Type 3)	Low	Positive environmental impacts for resource efficiency (ESS3), community health and safety (ESS4) and environmental impact (ESS1)	Potential adverse environmental and social impacts and risks, if any, will be considered integrally as a part of their preparation.
Policy, standards or guidelines development related to plastics, including recycling and Extended Producer Responsibility (EPR) and deposit-refund systems (Type 2)	Moderate	Positive environmental impacts for resource efficiency (ESS3), community health and safety (ESS4) and environmental impact (ESS1); assessment of potential downstream impacts for waste pickers (ESS1)	Analysis of integration of informal waste collectors in the formal recycling / EPR/deposit refund schemes with proper occupational, health and safety measures and opportunities for vulnerable and disadvantaged groups as part of the TA and stakeholder consultations and engagement.
Policy development and database establishment for national waste information system for planning and management of waste (Type 3)	Low	Positive environmental impacts for resource efficiency (ESS3) and community health and safety (ESS4)	No specific mitigation measures required
Policy development and guidelines related to cost calculation of waste , (household) waste fees and landfill gate fees and reporting (Type 2)	Moderate	Possible negative downstream impacts on households in case of increase of tariffs ; social impacts (ESS1), positive environmental impacts (ESS1)	Affordability analysis will be undertaken as part of the policy analysis and guidelines development, including stakeholder consultations and engagement.
<b>Component 2</b>			
Operational municipal SWM management support and municipal strengthening (Type 3)	Low	Positive environmental impacts for resource efficiency (ESS3) and environmental impacts (ESS1) and community health and safety (ESS4)	No specific mitigation measures required
Enhancing economic opportunities and support for poor and vulnerable groups, specifically child waste pickers. (Type 3)	Low	Positive impacts for community health and safety (ESS4), resource efficiency (ESS3) and social impacts (ESS1).	These activities are the mitigation measures to enhance economic opportunities and support for vulnerable groups for the investments in landfills and

			community recovery facilities under Component 3
Transaction Advisory support to participating municipalities in waste companies monitoring and tariff model (Type 2 and 3)	Moderate	Positive impacts for community health and safety (ESS4), resource efficiency (ESS3) and environmental impacts (ESS1), Possible negative downstream impacts on households in case of increase of tariffs; social impacts (ESS1), positive impacts for labor and working conditions (ESS2).	Potential adverse environmental and social impacts and risks, if any, will be considered integrally as a part of their preparation, specifically affordability analysis and accompanying stakeholder consultations and engagement

For the preliminary considered moderate risks, these will be further assessed during project implementation specifically for the TA activities focused on policies and regulations. This includes ensuring ToRs/scope for TA support will include adequate assessment of environmental and social implications in a manner consistent with the ESSs and will be subject to review by the World Bank to ensure that relevant ESSs are mainstreamed into the project activities. This extends to aspects of ESS1 for inclusion of vulnerable groups and aspects of ESS10 for effective and inclusive stakeholder engagements, where appropriate and relevant.

#### 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; landfill site development; leachate treatment and disposal, access to landfill sites. No collection system with prior segregation sorting or plastic recycling technologies are envisioned under the project.

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	High (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) Specific attention will be paid to woman and children waste-pickers and their families/guardians to develop measures to avoid disruptions of waste-based livelihoods and additional support measures on the basis of social baseline studies for each of the applicable sub-project.
- (3) 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.

- (4) 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.)
- (5) 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 and in compliance with ESS5: 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).
- (6) 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 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 ESIA 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. The avoiding disruptions to waste-based livelihoods measures for adult waste pickers through continued access to waste resources and additional support measures for the child waste pickers will be included in the detailed ESIA and ESMPs.

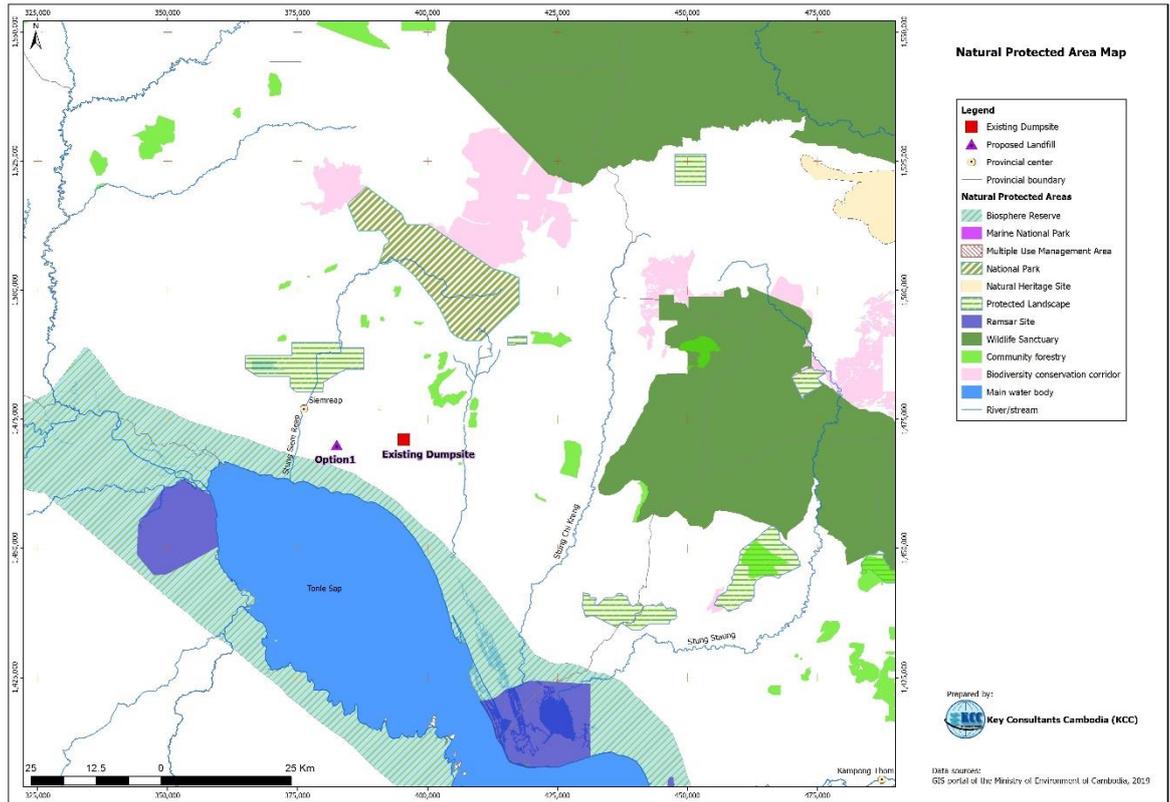
Based on the accurate project description and environmental and social status information, environmental and social assessment shall assess potential environmental and social risks and impacts, analyze alternative plans to the project, and determine methods to improve project screening, site selection, 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.

Environmentally sensitive receptors in the project area will be identified during detailed ESIA. Preliminary, these will include: Biosphere Reserve; National Park; Natural Heritage Site; Protected Landscape; Ramsar site; Wildlife Sanctuary; Community Forest; Biodiversity Corridor; Water bodies, community facilities such as fishery ponds, level and use of groundwater, wetlands. Receptors may also include Cultural Heritage Areas under the Protection of APSARA Authority.

The final identification and analysis of key sensitive receptors will be done within the scope of respective site-specific ESIA.



**Figure 7: Potential environmentally sensitive receptors for Siem Reap, for other provinces to add once suitable site locations are identified**

### 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.

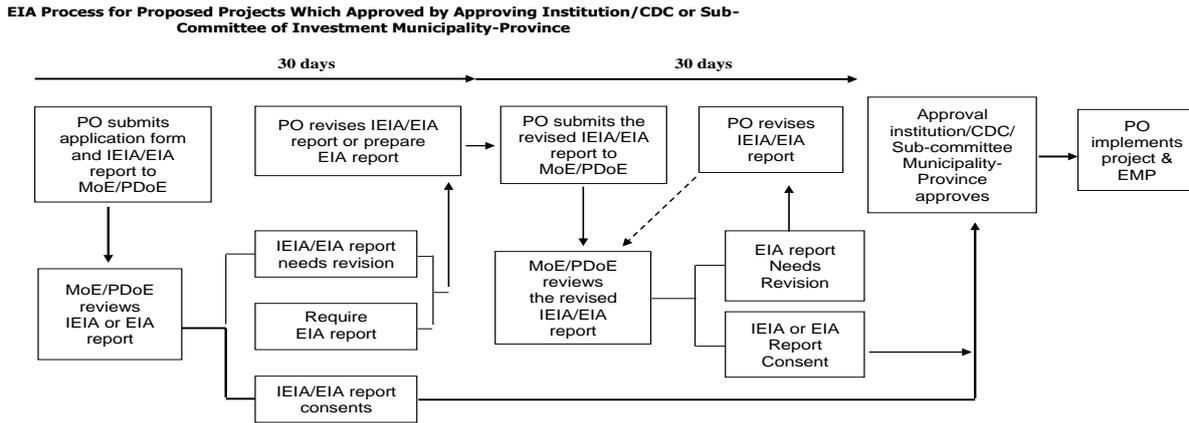


Figure 2.3-1 IEIA/EIA process for the proposed project approved by Approving Institution/Cambodia Development Council.

**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, DRPs 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 DRPs 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, DRPs and IPPs. Upon completion of the public consultations, CMU-3 will furnish to the Bank consulted draft ESIA/ESMPs and, when required, DRPs 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/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 Detailed Resettlement Plan, including livelihood restoration measures 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 Detailed Resettlement 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).

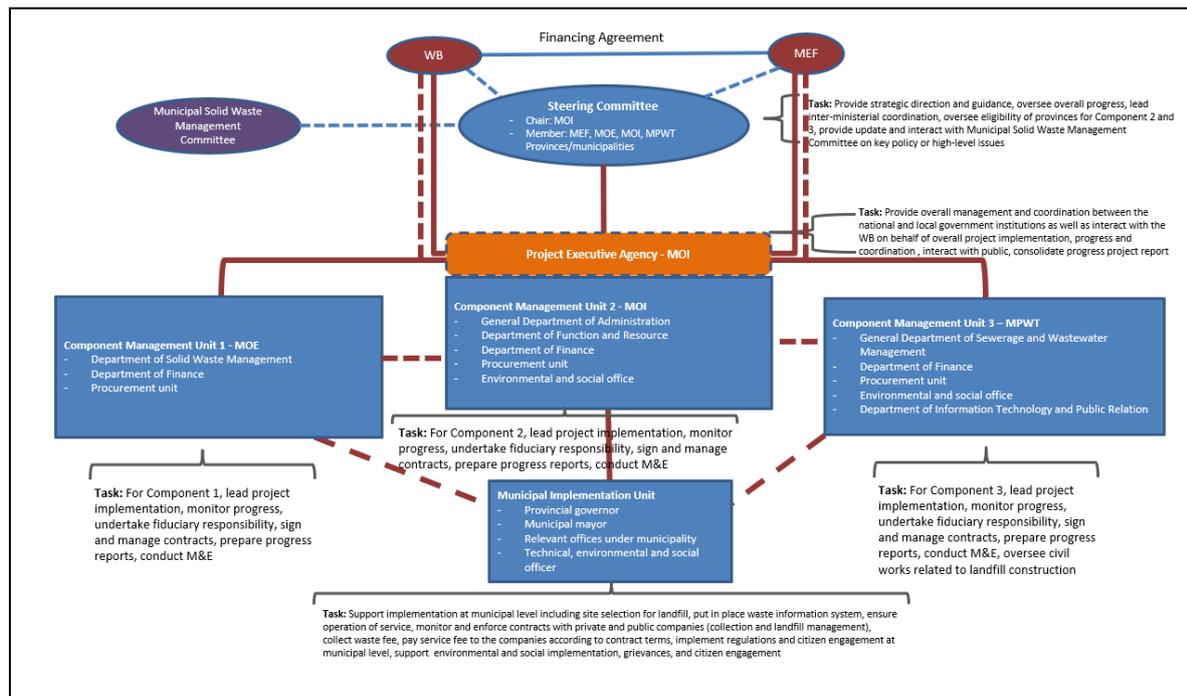
## 6 IMPLEMENTATION ARRANGEMENT AND STRENGTHENING OF INSTITUTION AND TRAINING PLANS

### 6.1 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.



## 6.2 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 Projects<sup>38</sup> 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.

<sup>38</sup> 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 measures (in close coordination with GDR) and subsequent resettlement and livelihood restoration.
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	
<b>E&amp;S Risk of the Subproject</b>							
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?							If yes, a cultural heritage plan is to be prepared as part of the site specific ESIA
10. Do the public or non-governmental organizations around the subproject express strong opposition to the construction of the project?							If yes, then special consideration to be provided to the opposition as part of the stakeholder consultations and engagement
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.
<b>Environmental and Social Assessment of Existing Facilities Related to the Project</b>							
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, then approval status to be listed
<b>Overall environmental and social risks:</b> (The overall level of E&S risk is determined by the highest risk rating of the issues above.)							<b>Documents required:</b>

## 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 <sup>39</sup> , 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 <sup>40</sup> , 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 <sup>41</sup> , 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

<sup>39</sup> As per the definition of the SOP-LAR

<sup>40</sup> 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.

<sup>41</sup> 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
<b>Transport Related</b>		
1	Waste haul distance/time	Site accessible should be within 30 minutes travel time, otherwise lager 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)
<b>Nature Conditions</b>		
4	Topography	<ul style="list-style-type: none"> <li>• Gentle topography, use cell/bund method</li> <li>• Leachate collection layer at 2% gradient</li> </ul>
5	Groundwater	<ul style="list-style-type: none"> <li>• 10-year seasonal high groundwater &gt;1.5m below base</li> <li>• &gt;1m of low permeable soil above GWT or use plastic liner</li> </ul>
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"> <li>• Daily cover can be alternative and/or reused materials</li> <li>• Assume 1 cu.m. cover soil for every 6 cu.m. waste</li> </ul>
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”
<b>Land Use</b>		
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
<b>Public Acceptability, Social Impacts and Safety</b>		
15	Residential	No residential development within 250 m
16	Visual	<ul style="list-style-type: none"> <li>• Landfill not visible from residential areas &lt;1 km away</li> <li>• Landscaping, bund screen, curved road may be required</li> </ul>
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.
<b>Safety</b>		
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"> <li>• Underlying underground mines not adversely affected</li> <li>• No underlying minable resources</li> </ul>
21	Airports	No siting within 3 km of a turbojet airport and 1.6 km of piston-type airport
<b>Environmental</b>		
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.



**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:

<b>Table of Content</b>	
<b>List of Tables/Figures</b>	
<b>List of Acronyms and Abbreviations</b>	
<b>A. Executive Summary</b>	Concisely discusses significant findings and recommended actions.
<b>B. Legal and Institutional Framework</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Compares the Borrower's existing environmental and social framework and the ESSs and identifies the gaps between them.</li> <li>Identifies and assesses the environmental and social requirements of any co-financiers.</li> </ul>
<b>C. Project Description</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Through consideration of the details of the project, indicates the need for any plan to meet the requirements of ESS1 through 10.</li> <li>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.</li> </ul>
<b>D. Baseline Data</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions.</li> <li>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.</li> <li>Takes into account current and proposed development activities within the project area but not directly connected to the project.</li> </ul>
<b>E. Environmental and Social Risks and Impacts</b>	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.
<b>F. Mitigation Measures</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Identifies differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable.</li> <li>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.</li> <li>Specifies issues that do not require further attention, providing the basis for this determination.</li> </ul>

<b>G. Analysis of Alternatives</b>	<ul style="list-style-type: none"> <li>• 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;</li> <li>• 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.</li> <li>• For each of the alternatives, quantifies the environmental and social impacts to the extent possible, and attaches economic values where feasible.</li> </ul>
<b>H. Design Measures</b>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>
<b>I. Implementation Arrangements and capacity assessments and needs</b>	<ul style="list-style-type: none"> <li>• Sets out the basis for specific implementation arrangements for the sub-project implementation and the specific capacity assessments and needs</li> </ul>
<b>References</b>	Set out the written materials, both published and unpublished, that have been used.
<b>Appendices</b>	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:

<b>A. Mitigation</b>	<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"> <li>Identifies and summarizes all anticipated adverse environmental and social impacts (including those involving indigenous people or involuntary resettlement);</li> <li>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;</li> <li>Estimates any potential environmental and social impacts of these measures; and</li> <li>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).</li> </ol>
<b>B. Monitoring</b>	<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"> <li>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,</li> <li>b. detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions;</li> <li>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.</li> </ul>
<b>C. Capacity Development and Training</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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).</li> <li>• 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.</li> </ul>
<b>D. Implementation Schedule and Cost Estimates</b>	<p>For all three aspects (mitigation, monitoring, and capacity development), the ESMP provides</p> <ul style="list-style-type: none"> <li>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;</li> <li>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.</li> </ul>
<b>E. Stakeholder engagement and consultations</b>	<p>Following the Stakeholder Engagement Plan conduct stakeholder engagements and public consultations to:</p> <ul style="list-style-type: none"> <li>• Establish a systematic approach -during Projects' preparation and implementation - to stakeholder engagement (including identifying stakeholders and building and maintaining constructive dialogue) as well as a grievance that is inclusive and accessible.</li> <li>• Assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and environmental and social performance</li> <li>• Promote and provides means for an effective and inclusive engagement with potentially project-affected persons (PPAPs) or groups throughout the project life cycle; and</li> <li>• Ensure that appropriate information on project environmental and social risks and impacts as well as mitigation measures are disclosed to stakeholders and consulted in a timely, accessible, understandable, and appropriate manner and format and develop a strategy for stakeholder participation and monitoring.</li> </ul>
<b>F. Integration of ESMP with the Project</b>	<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><b><u>Environmental Conditions for Waste Management Facilities</u></b>            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><b><u>Community Health and Safety</u></b>            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><b><u>Noise Management</u></b></p> <ul style="list-style-type: none"> <li>• Construction of a buffer zone,</li> <li>• Road quality maintenance</li> <li>• Use of equipment with low-noise emission levels,</li> <li>• Use of sound-insulating materials, acoustic screens and silencing equipment,</li> <li>• Enclose inherently noisy equipment in a fixed structure, and</li> <li>• Inclusion of noise considerations in the design process.</li> </ul> <p><b><u>Emission Management</u></b></p> <ul style="list-style-type: none"> <li>• Inclusion of landfill gas collection system and its use if practical,</li> <li>• Use of gas blowers, and</li> <li>• Installation and regular sampling of boreholes</li> </ul>
Landfill Operations	<p><b><u>Labor Management Occupational Safety</u></b>            Occupational Safety Procedures for the landfill operation must include provisions related to:</p> <ul style="list-style-type: none"> <li>• Accidents and injuries, including those involving trucks and moving equipment, unstable disposal site surfaces, and fires and explosions,</li> <li>• Chemical exposure, including exposure to chemical burns, and</li> <li>• Exposure to pathogens and vectors that can be health hazards.</li> </ul> <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><b><u>Community Health and Safety</u></b>            The following impacts likely to occur during the operation phase must be looked into:</p> <ul style="list-style-type: none"> <li>• <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</li> <li>• <i>Physical, chemical, and biological hazards</i>: access to facilities, especially for areas that hold toxic waste, must be restricted and implement security procedures.</li> <li>• <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.</li> <li>• <i>Noise</i>: measures to management noise should be taken to void causing nuisance to the adjacent areas.,</li> <li>• <i>Dust and odors</i>: Buffer areas must be included in the design, especially between processing areas and potential receptors, especially residences, hospitals and</li> </ul>

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"> <li>• <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, livelihood impacts of these must be avoided, especially without provision of any alternatives.</li> </ul> <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)**

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 6.2-1: Generic Mitigating Measures for Potential Project Impacts**

Component	Potential Impacts	Generic Mitigating Measures <sup>42</sup>
<b>Pre-Construction Phase</b>		
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"> <li>- Conduct detailed site suitability analysis that is being undertaken to select a suitable site</li> <li>- 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</li> <li>- Conduct site-specific ESIA for the landfill and waste treatment facilities sub-projects</li> </ul>
Demography	Physical and economic displacement  Vulnerable and disadvantaged groups	<ul style="list-style-type: none"> <li>- Inventory of project affected households, groups, and businesses in line with the RPF</li> <li>- Conduct of consultations with project-affected groups and other relevant stakeholders</li> <li>- Develop and implement a resettlement plan in line with the Resettlement Plan Framework</li> <li>- Specific attention will be paid to woman and children waste-pickers and their families/guardians to develop suitable measures in line with ESF and additional support measures, such as support for registration and application for available social programs, school enrollment and materials, skill training and possibly a childcare facility on the basis of social baseline studies for each of the applicable sub-projects</li> </ul>
<b>Construction Phase</b>		
Civil works activities	Mobilization and demobilization of equipment, materials and personnel	<ul style="list-style-type: none"> <li>- A transportation management plan should be developed and implemented</li> <li>- Spraying of water on the streets and roads when mobilization is performed during a particular hot day at least twice a day</li> <li>- Implement stakeholder engagement plan that includes consultation and dissemination of information regarding the mobilization and demobilization</li> <li>- Establish Grievance Redress Mechanism</li> </ul>
Natural landscape	Clearing of vegetation	<ul style="list-style-type: none"> <li>- Minimize clearing as much as possible</li> <li>-</li> </ul>
	Cutting of trees	<ul style="list-style-type: none"> <li>- Secure the necessary permits</li> <li>-</li> <li>- Conduct tree inventory</li> <li>- Replace cut trees</li> </ul>
Air quality	Dust generated from construction activities	<ul style="list-style-type: none"> <li>- Stabilize the exposed surfaces</li> <li>- Minimize activities that suspend dust particles</li> <li>- Water spraying for heavily transport areas and in urban communities</li> <li>- Apply water to the areas to be excavated as well as the loading and unloading areas and unpaved roads</li> <li>- Develop a wheel wash at the entrance to public roads or exit of the landfill construction site</li> <li>- Implement speed controls on-site</li> </ul>

<sup>42</sup> To be specified and costed as part of site-specific ESIA.

Component	Potential Impacts	Generic Mitigating Measures <sup>42</sup>
		<ul style="list-style-type: none"> <li>- Regular water spraying to those dusty static construction areas</li> <li>- Maintain enough loading capacity of lorries and barges to avoid spillage</li> <li>- Cover soil stockpiles with erosion control blankets</li> <li>- Use hoarding to avoid wind-blown dust</li> <li>- Apply good construction practices</li> </ul>
Noise	Construction noise during the development stages	<ul style="list-style-type: none"> <li>- Avoiding evening or night-time construction work as far as possible;</li> <li>- Installation of noise fencing at critical/sensitive site boundaries (construction of screening mounds to shield subsequent building and construction activities)</li> <li>- Maintain the site roads in good condition to reduce noise and vibration from vehicle's movement</li> <li>- Proper scheduling of vehicle movement to avoid accumulated noise</li> <li>- Apply good construction practices</li> </ul>
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"> <li>- Application of cover for the waste at existing dumpsite for both options.</li> <li>- Installation of landfill gas treatment system</li> <li>- Leachate treatment system</li> <li>- Use of odour counter actant and/or masking sprays in case odor is a chronic problem</li> </ul>
Soil integrity		<ul style="list-style-type: none"> <li>- Use excavated soil in the landfill operations: usage as daily cover of waste, and usage in establishing side embankments for containing the waste</li> <li>▪ Use excavated soil for coverage for closing of adjacent old cells (re-cultivation layers of the final cover)</li> <li>- 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</li> </ul>
Soil erosion		<ul style="list-style-type: none"> <li>- Installing erosion matting over the stockpiles if further surface compaction and/or seeding fails</li> <li>- Protect the stockpiles from flooding and run-off by placing berms or equivalent around the outside where necessary</li> <li>- Protection of most susceptible soil surfaces</li> <li>- Protection of drainage channels</li> </ul>
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"> <li>- Storage of topsoil in stockpiles</li> <li>- Storage locations that prevent the stockpiles being compacted by vehicle movements or contaminated</li> <li>- Segregation from subsoil stockpiles</li> <li>- No storage where there is a potential for flooding</li> <li>- No storage close to streams, subject to local topography</li> </ul>
Biodiversity and habitat	Biodiversity decreased due to loss of habitat	<ul style="list-style-type: none"> <li>- Limit the construction area according to the planned detailed engineering design</li> <li>- Adequate site selection through thorough site assessment process</li> <li>- Limit the construction area according to the planned detailed engineering design</li> </ul>

Component	Potential Impacts	Generic Mitigating Measures <sup>42</sup>
		<ul style="list-style-type: none"> <li>- leachate collection and treatment system</li> <li>- installation of lining systems</li> <li>- zoning outside of vital habitats and ecosystems</li> <li>- monitoring of species presence and pollution</li> <li>- flood protection measures</li> </ul>
Water resources	Contamination of water resources by suspended solids during site construction activities	<ul style="list-style-type: none"> <li>- Minimizing land disturbance</li> <li>- Isolation of areas to be excavated from surface water run-on through the use of bunds;</li> <li>- Use of temporary silt fences, silt traps and sedimentation ponds at the downstream end of excavation works;</li> <li>- Covering of stockpiles and peripheral embankments to reduce the potential for erosion and sediment entrainment; and</li> <li>- Re-seeding of bare areas promptly upon completion of earthmoving</li> <li>- Proper handling of waste to avoid spillage</li> </ul>
Water quality	Risk of surface water and groundwater quality from construction activities	<ul style="list-style-type: none"> <li>- Minimize land disturbance</li> <li>- Manage run-off and sediment exiting to disturbed areas</li> <li>- Manage drainage within the disturbed areas</li> <li>- Manage ground cover</li> <li>- Good construction quality assurance procedures and protocol during installation of the basal, lateral and top containment engineering systems</li> <li>- Leachate treatment</li> </ul>
Traffic	Traffic congestion	<ul style="list-style-type: none"> <li>- Evaluation of the transport route should be studied to mitigate any impacts on traffic and transportation</li> <li>- A traffic management plan should be developed and implement to ensure minimal traffic disruption</li> <li>- 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</li> <li>- Apply speed limit in urban communities/areas, especially schools and hospitals</li> </ul>
Employment opportunity	Increase income of the community that will be hired in the construction at the landfill site	<ul style="list-style-type: none"> <li>- Positive impact</li> <li>- Ensure good labor and working conditions</li> <li>- Priority hiring to be given to locals</li> <li>- Local sourcing of supplies and materials whenever possible</li> </ul>
	Potential conflict between migrant labor and local community including crime, disputes, cultural and disease	<ul style="list-style-type: none"> <li>- Local induction to migrant labor should be organized and be implemented</li> <li>- Health and safety protocols to all workers must be implemented</li> <li>- Establishment and dissemination of grievance mechanism to affected communities</li> <li>- Consultation/Updating of the project activities with the representatives of the community</li> </ul>
Public services and utilities	Competition for basic services (i.e., health, housing)	<ul style="list-style-type: none"> <li>- Sustained coordination between project proponent and local authorities</li> </ul>
	Resource competition (i.e., water, food)	<ul style="list-style-type: none"> <li>- Integration of project activities in local plans and programs</li> </ul>
	Spread of infectious diseases	

Component	Potential Impacts	Generic Mitigating Measures <sup>42</sup>
Community health and safety	Increase in respiratory diseases	<ul style="list-style-type: none"> <li>- Strengthen local health system</li> <li>- Strictly implement appropriate measures that address the incidence of respiratory diseases</li> </ul>
	Vehicular accidents	<ul style="list-style-type: none"> <li>- Develop and implement traffic management plan</li> <li>- Coordinate project activities with local authorities</li> <li>- Post appropriate signage and information on vehicular traffic</li> </ul>
	Air pollution (dust and odor)	<ul style="list-style-type: none"> <li>- Implement appropriate measures that control dust, odor, and noise</li> <li>- Limit noise-generating activities to daytime only</li> <li>- Coordinate project activities with surrounding communities</li> </ul>
	Noise pollution	
Occupational health and safety	Workplace accidents	<ul style="list-style-type: none"> <li>- Keep record of workplace accidents</li> <li>- Regular conduct of toolbox meetings</li> <li>- Provision of appropriate PPEs</li> <li>- Encourage sanitary practices among workers</li> <li>- Conduct of regular health check-ups among workers</li> <li>- Provision of appropriate health facilities for workers</li> </ul>
	Spread of infectious diseases	
Heritage and culture	Chance and accidental finds	<ul style="list-style-type: none"> <li>- Develop and implement a chance find procedure</li> <li>- Rehabilitation, if needed</li> </ul>
	Disturbance to existing heritage/cultural sites	
Operation Phase		
Mobilization and demobilization of filling materials	Negative perception and/or social tension	<ul style="list-style-type: none"> <li>- A transportation management plan should be developed and be implemented that includes usage of material cover during material transportation</li> <li>- Regular spraying of water on the streets when mobilization is performed during a particular hot day at least twice a day</li> <li>- Implement stakeholder engagement plan that includes consultation and dissemination of information regarding the mobilization and demobilization</li> <li>- Establish Grievance Redress Mechanism</li> </ul>
Visual impact	Visual impact	<ul style="list-style-type: none"> <li>- Ensure proper covering of the vehicle during waste transport</li> <li>- Provide vehicle wheels washing bay at the exit of the landfill</li> <li>- Schedule waste transportation hours avoiding heavy traffic and peak hours</li> </ul>
Litter	Litter	<ul style="list-style-type: none"> <li>- Proper covering of the vehicle during waste transport</li> </ul>
Occupational Health and Safety	Dust generation from hauling trucks, placement of waste, cover, capping and restoration of materials	<ul style="list-style-type: none"> <li>- Deposition of waste in small well-defined cells, protected by windbreaks</li> <li>- Establishing frequent waste collection schedules</li> <li>- Optimize waste collection routes to minimize distance travelled and overall fuel use and emission</li> </ul>
	Gas emission	<ul style="list-style-type: none"> <li>- Design a landfill gas collection system and operate</li> </ul>
	Emission of bio-aerosols such as CH <sub>4</sub> H <sub>2</sub> S	<ul style="list-style-type: none"> <li>- Design a landfill gas collection system and operate</li> </ul>
	Ambient air quality decrease due to the generation of CO <sub>2</sub>	<ul style="list-style-type: none"> <li>- Design a landfill gas collection system and operate</li> </ul>
Noise Quality	Noise from site operations and waste haulage traffic	<ul style="list-style-type: none"> <li>- <i>Use of mobile noise barriers as necessary</i></li> </ul>

Component	Potential Impacts	Generic Mitigating Measures <sup>42</sup>
	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	<ul style="list-style-type: none"> <li>- Use of modern, well-maintained mobile plant fitted with noise suppressors</li> <li>- Utilize the vehicle that has pass the emission test</li> </ul>
Odor quality	Odors at landfill sites are generated from the decomposition of waste and are greatest during the movement and placement of waste at the composting yard and landfill.	<ul style="list-style-type: none"> <li>- Diversion of organic wastes to the composting yard where odor suppressors (i.e., phosphate rock, is mixed with the organic wastes);</li> <li>- Provision of tarpaulin covers on windrows and on matured compost;</li> <li>- Acceptance only of conforming wastes for disposal</li> <li>- Prompt (immediate) compaction following deposition;</li> <li>- Application of daily cover, at least 100mm thick, to all exposed surfaces of waste</li> <li>- Collection and venting or flaring of landfill gas to reduce odor impacts; and</li> <li>- Use of odor counter-actant and/or masking sprays – however, these are not recommended unless odor becomes a chronic problem</li> </ul>
	Odor from leachate in the treatment ponds and during leachate treatment may be significant if not properly controlled.	
Water Quality	Risk of surface water and groundwater pollution from breach of site containment measures	<ul style="list-style-type: none"> <li>- 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</li> <li>- Prevent run-on of precipitation into the active area of the landfill</li> <li>- Capping system and internal berms and drains during cellular filling to minimize the quantity of leachate generated</li> <li>- 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</li> <li>- 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</li> <li>- 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</li> <li>- 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</li> <li>- If required and appropriate, instigate remedial engineering works to isolate the area where a breach in the lining system has occurred</li> <li>- Maintain the effectiveness of the leachate treatment plant</li> </ul>
	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	
Aquatic biota	Disturbance of aquatic biota due to contamination of the	<ul style="list-style-type: none"> <li>- Regular maintenance of the leachate treatment plant and ensure the compliance with the quality standard</li> </ul>

Component	Potential Impacts	Generic Mitigating Measures <sup>42</sup>
	water body from intreated leachate	- Regular monitoring of effluent quality to ensure that the leachate treatment plant operates well
Demography	Influx of workers and individuals seeking economic opportunities	- Proper consultation and dissemination of information to local communities on employment option, alternatives and timing
Occupational health and safety	Workplace accidents Spread of infectious diseases	<ul style="list-style-type: none"> <li>- Provision of appropriate PPEs such as protective clothing, gloves, respiratory face masks and slip resistant shoes and hard soled safety shoes</li> <li>- Provide training regarding to the use of PPE and other related occupational health and safety related issues</li> <li>- Conduct monitoring on waste pickers occupational health and safety issues</li> <li>- Regular conduct of toolbox meetings</li> <li>- Encourage sanitary practices among workers</li> <li>- Conduct of regular health check-ups among workers</li> <li>- Provision of appropriate health facilities for workers</li> <li>- Conduct socialization regarding occupational health and safety matter to all waste pickers</li> <li>- Provide safety signages at the landfill site</li> <li>- Provide barricading in the landfill facilities</li> <li>- Provide/encourage waste pickers to have regular medical check-up</li> </ul>
Community health and safety	Increase of water borne diseases due to contamination on untreated leachate in the water bodies	- Regular maintenance of the leachate treatment plant and ensure the compliance with the quality standard
	Hazardous waste	- Collect hazardous waste and dispose by the sub-contracted licensed hazardous waste collector
Traffic and transportation	Increased traffic in the area and surrounding (especially dump trucks), congestion and site access disruption	- Implement traffic management plan
<b>Closure and After-use Phase</b>		
Occupational health and safety	Occupational health and safety during cell capping works	- Use of PPE among workers
Water quality	Due to leachate generation	- Treat the leachate channeling to the leachate treatment plant prior to discharging to water bodies
Air quality	Landfill gas emission	- Design a landfill gas collection system and operate
Landslide	Due to unstable waste pile	<ul style="list-style-type: none"> <li>- Follow the design criteria in the landfilling method</li> <li>- Conduct soil cover compaction</li> </ul>
Work termination and decreased local economy	Closure of landfill for waste pickers and waste collector, work termination	- Proper information dissemination about the closure of the landfill to the affected communities. This should be done prior to the closure.
Visual impact	Positive impact due to changes of landscape	- Provision of soil layer as part of permanent capping layers for greenery
Biodiversity	Biodiversity enhancement from revegetation at landfill area	- Cover components should be consistent with post closure use and local climatic condition
Water quantity	Decreasing run-off	- Impermeable layers should be the final capping as membrane to prevent infiltration into the landfill.

Component	Potential Impacts	Generic Mitigating Measures <sup>42</sup>
		- <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
<b>26 January 2021</b> Siem Reap Provincial Hall	Representatives from the following offices: <ul style="list-style-type: none"> <li>• Provincial authority</li> <li>• Provincial administration</li> <li>• Department of Energy and Mines</li> <li>• Department of Environment</li> <li>• Siem Reap City Hall</li> </ul>	<ul style="list-style-type: none"> <li>• 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</li> </ul>
<b>26 January 2021</b> 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"> <li>• Interview with waste-pickers <ul style="list-style-type: none"> <li>o 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.</li> <li>o Discussion on their daily activities, livelihood and their average income.</li> </ul> </li> <li>• Conducted drone assessment of the project site and its surrounding areas</li> <li>• Site observation <ul style="list-style-type: none"> <li>o Geography</li> <li>o People, including waste-pickers</li> <li>o Water consumption</li> <li>o Power connection</li> <li>o Biodiversity</li> <li>o Ecosystems</li> <li>o Road condition</li> <li>o General environment</li> <li>o Operation of existing dumpsite</li> <li>o Culture and protected area</li> <li>o Surrounding Environment</li> </ul> </li> </ul>

<b>27 February 2021</b> Trapeang Thom Commune	Commune chief of Trapeang Thom Commune	Gathered data on the following: <ul style="list-style-type: none"> <li>• Total number of the waste-pickers at the existing dumpsite</li> <li>• All contacts of village chiefs from his commune (Trapeang Thom)</li> <li>• Future plan for the development in his area</li> <li>• Information related to the existing dumpsite</li> <li>• His view on the existing dumpsite</li> <li>• Information related to waste-pickers and GAEA</li> <li>• Demonstrations staged by the waste-pickers</li> <li>• Vulnerable people with the certificate of being the poor citizen.             <ul style="list-style-type: none"> <li>o More than 70% of waste pickers classified as poor are assisted financially through the Livelihood Enhancement and Association of the Poor (LEAP) Project.</li> </ul> </li> </ul>
<b>27 February 2021</b> Anlong Pir dumpsite	<ul style="list-style-type: none"> <li>• Waste-pickers (day/night shifts)</li> <li>• Junkshop owner</li> </ul>	<ul style="list-style-type: none"> <li>• Work routine of waste-pickers</li> <li>• Operation of junk shop near the dumpsite</li> </ul>
<b>28 February 2021</b> Anlong Pir Village	Village chief of Anlong Pir	Gathered data on the following: <ul style="list-style-type: none"> <li>• Information related to the existing dumpsite</li> <li>• Living standard of waste-pickers from his village</li> <li>• Over 90 % of the waste-pickers have been loaned from MFIs</li> <li>• Complaints from the villagers against the dumpsite management such as smell, leachate, flies and the surroundings</li> <li>• Information related to GAEA and CINTRI</li> </ul>
	CINTRI representative for Siem Reap	<ul style="list-style-type: none"> <li>• CINTRI operation in Siem Reap</li> <li>• Its future plan</li> </ul>
<b>28 February 2021</b> CINTRI dumpsite, Anlong Pir Village	Waste-pickers	<ul style="list-style-type: none"> <li>• Work routine of waste-pickers</li> <li>• Information on CINTRI and GAEA</li> </ul>
<b>28 February 2021</b> Nearby villages from Anlong Pir and Phnom Dey dumpsites	<ul style="list-style-type: none"> <li>• Waste-pickers</li> <li>• Villagers</li> </ul>	<ul style="list-style-type: none"> <li>• Work routine of waste-picker residents and how they engage with middlemen.</li> <li>• Their daily/monthly income</li> <li>• Family members involved in waste-picking job</li> </ul>
<b>17 April 2021</b> 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"> <li>• Current situation of the dumpsite</li> <li>• Programs targeted for the waste-pickers (children, education, community integration)</li> <li>• Plans related to solid waste management</li> <li>• Views/opinions regarding the possible sub project</li> <li>• Quality of environment in the area</li> <li>• Effect of the dumpsite in the surrounding area</li> </ul>
<b>18-19 April 2021</b> Focus Group Discussions (Siem Reap)	Anlong Pir and Phnom Dei Villages, Trapeang Thom Commune <ul style="list-style-type: none"> <li>• Waste-pickers</li> </ul>	<ul style="list-style-type: none"> <li>• Situation of waste-pickers             <ul style="list-style-type: none"> <li>o Types of waste collected</li> </ul> </li> <li>• Situation of junkshop owners</li> <li>• Situation of workers in waste-related businesses</li> <li>• Situation of farmers, fisherfolks, and women's group</li> </ul>

	<ul style="list-style-type: none"><li>• Workers in waste-related businesses,</li><li>• Owners of waste-related business</li></ul> Tropheang Teom Village, Kandek Commune <ul style="list-style-type: none"><li>• Farmers and fisherfolks</li><li>• Women's group</li></ul>	
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## 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
  - *Rice planting*: Leachate leaks might affect paddy fields
  - *Water quality*: Will be polluted and cause bad smell and less fish in the reservoir
  - *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
  - Livestock feeding, rice planting, construction workers, factory workers, etc.
- Insights on the assistance needed by participants were recorded
  - 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)*



## 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"> <li>• <b>Dumpsite entrance pathway:</b> 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.</li> <li>• <b>Waste odor during wet season:</b> 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</li> </ul>	All Participants



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"> <li>• <b>Water pollution:</b> 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.</li> <li>• <b>Air pollution:</b> 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.</li> <li>• <b>Waste management capacity at dumpsite:</b> 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.</li> </ul>	
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



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></p> <p><b>1. Anlong Pir village</b> It did not affect people living in the village for environmental aspect, they could cultivate and do fishing, etc.</p> <p><b>2. Phnom Dei village</b> 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></p> <p><b>1. Anlong Pir village</b> 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.</p> <p><b>2. Phnom Dei village</b> 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>



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	
2	Meol Sokongkea	F	N/A	Commune chief	Kandaek	
3	Khaom Luos	M	N/A	Village chief	Trapeang Toeum	
4	Lios Pheum	M	N/A	Village chief	Phnom Dei	
5	Chhim Ley	M	N/A	Village chief	Anlong Pir	
6	Chhum Ya	M	N/A	Village chief	Roka Kambot	
7	Chuch So	M	N/A	Village chief	La Vea	
8	Saem Ly	M	N/A	Village chief	Soung	

### D. Attendance Sheet

**THE ATTENDANCE LIST OF THE FOCUS GROUP DISCUSSION**

Name of meeting : .....

Date : 17-04-2021

Location : គោរពឃុំត្រពាំងតូម

Total Participants : 8 (Male= 7 Female= 1)

No.	Name	Gender	Position	Organization	Contact Number	Signature
1	ស៊ុយស៊ីហា	ប្រុស	នាយកឃុំ	គោរពឃុំត្រពាំងតូម		[Signature]
2	ម៉េលសុកងក្លា	ស្រី	នាយកឃុំ	កង្កែក		[Signature]
3	ខាមលួស	ប្រុស	នាយកភូមិ	ត្រពាំងតូម		[Signature]
4	លីយ៉ាផ្លែឈូក	ប្រុស	នាយកភូមិ	ភ្នំពេជ្រ		[Signature]
5	ឌីមលេ	ប្រុស	នាយកភូមិ	អង្គរវត្ត		[Signature]
6	ឌីមយ៉ា	ប្រុស	នាយកភូមិ	រតនាគមន៍		[Signature]
7	ឌីមសូ	ប្រុស	នាយកភូមិ	លាវ៉ា		[Signature]
8	ស៊ីមលី	ប្រុស	នាយកភូមិ	ស្វែង		[Signature]



## 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.



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



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



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.



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"> <li>• 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.</li> <li>• The water quality will be extremely polluted causing bad smell, and less amount of fish in the reservoir</li> <li>• Reducing the amount of water inside the 78 dam resevoirs due to the need of water for rice paddy irrigation, fishing and drinking water for animals.</li> </ul>

The summary of the responses of all the participants of this FGD are in the table below.

Key Questions	Responses
<b>On the Environment</b>	
<b>Land</b>	
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.
<b>Water</b>	
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.
<b>Air and Noise</b>	
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.
<b>People</b>	



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.
<b>On the Landfill Site Alternatives</b>	
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"> <li>• Not yet aware of the form and technique of making a sanitary landfill</li> <li>• Requested to build the sanitary landfill that will not affect the health of the people and its surroundings.</li> <li>• Do not know/do not have experience and techniques to understand the landfill.</li> </ul>



### Annexes

#### FGD Result (Group 1)

<b>Name of Village:</b>	Anlong Pir	<b>Village code:</b>	.....
<b>Name of Commune:</b>	Tropeang Thom		
<b>District:</b>	Prasat Bakong		
<b>Province:</b>	Siem Reap		
<b>Date of Interview:</b>	18 April 2021		
<b>Name of Interviewer:</b>	Mr. Chhun Bunmeng		
<b>Note taker:</b>	Mrs. Kun Chantrea		
<b>Facilitator:</b>	Ms. Chhun Sokhom		
<b>Title of FGD:</b>	Waste pickers – Children: 14 years old and below; boys and girls		
<b>Place of Interview:</b>	Rest hall near dumpsite in Anlong Pir Village		
<b>Date:</b>	18 April 2021		
<b>Starting time:</b>	8:30 am		
<b>Completion time:</b>	10:00 am		

#### Participants' Profile

	Name	Sex	Age	Highest Level of Education Attained	No. of Family Members
1	[redacted] Sokneang	Female	13	Grade 5	5
2	[redacted] Bora ( <i>farmer</i> )	Male	13	Grade 4	6
3	[redacted] Hun	Male	10	Grade 3	6
4	[redacted] Sreylai	Female	14	Grade 6	6
5	[redacted] Vanndet	Male	13	Grade 4	4
6	[redacted] n Seyha	Male	10	Grade 1	4
7	[redacted] 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



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( Carton, 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
<b>Organic waste (for livestock feeding) for 20 litres of volume</b>	<b>Yes/No</b>	<b>Bucket</b>	<b>0.75</b>	

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.



#### FGD Result (Group 2)

<b>Name of Village:</b>	Anlong Pir	<b>Village code:</b>	.....
<b>Name of Commune:</b>	Trapeang Thom		
<b>District:</b>	Prasat Bakong		
<b>Province:</b>	Siem Reap		
<b>Date of Interview:</b>	18 April 2021		
<b>Name of Interviewer:</b>	Mr. Chhun Bunmeng		
<b>Note taker:</b>	Mrs. Kun Chantrea		
<b>Facilitator:</b>	Ms. Chhun Sokhom		
<b>Title of FGD:</b>	Waste pickers – Youth: 15-20 years old; male and female		
<b>Place of Interview:</b>	Rest hall near dumpsite in Anlong Pir Village		
<b>Date:</b>	18 April 2021		
<b>Starting time:</b>	10:20 AM		
<b>Completion time:</b>	11:40 AM		

#### Participants' Profile

	Name	Sex	Age	Highest Level of Education Attained	No. of Family Members
1	<input type="checkbox"/> Sreyvy	Female	16	Grade 6	5
2	<input type="checkbox"/> Brem	Male	15	Grade 7	6
3	<input type="checkbox"/> Sokha	Male	19	Grade 9	5
4	<input type="checkbox"/> Sophorn	Male	15	Grade 9	6
5	<input type="checkbox"/> 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.



**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( Carton, 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
<b>Organic waste (for livestock feeding) for 20 litres of volume</b>	<b>Yes/No</b>	<b>Bucket</b>	<b>0.75</b>	

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.



### FGD Result (Group 3)

<b>Name of Village:</b>	Anlong Pir	<b>Village code:</b>	.....
<b>Name of Commune:</b>	Trapeang Thom		
<b>District:</b>	Prasat Bakong		
<b>Province:</b>	Siem Reap		
<b>Date of Interview:</b>	18 April 2021		
<b>Name of Interviewer:</b>	Mr. Chhun Bunmeng		
<b>Note taker:</b>	Mrs. Kun Chantrea		
<b>Facilitator:</b>	Ms. Chhun Sokhom		
<b>Title of FGD:</b>	Waste pickers – Women: 20 years old and above		
<b>Place of Interview:</b>	Rest hall near dumpsite in Anlong Pir Village		
<b>Date:</b>	18 April 2021		
<b>Starting time:</b>	13:30 pm		
<b>Completion time:</b>	15:00pm		

### Participants Profile

	Name	Sex	Age	No. of Family Members
1	Savoeun	Female	42	8
2	Lis	Female	37	4
3	MaLai	Female	36	4
4	avoeun	Female	40	-
5	v Sar	Female	28	-
6	v Sang	Female	37	-
7	Srey	Female	33	-
8	m 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
<b>Organic waste (for livestock feeding) for 20 litres of volume</b>	<b>Yes/No</b>	<b>Bucket</b>	<b>0.75</b>	

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.



#### FGD Result (Group 4)

<b>Name of Village:</b>	Anlong Pir	<b>Village code:</b>	.....
<b>Name of Commune:</b>	Trapeang Thom		
<b>District:</b>	Prasat Bakong		
<b>Province:</b>	Siem Reap		

<b>Date of Interview:</b>	18 April 2021
<b>Name of Interviewer:</b>	Mr. Chhun Bunmeng
<b>Note taker:</b>	Mrs. Kun Chantrea
<b>Facilitator:</b>	Ms. Chhun Sokhom

<b>Title of FGD:</b>	Waste pickers – Men: 20 years old and above
<b>Place of Interview:</b>	<i>Rest hall near dumpsite in Anlong Pir Village</i>
<b>Date:</b>	18 April 2021
<b>Starting time:</b>	15:30 pm
<b>Completion time:</b>	17:00 pm

#### Participants Profile

	Name	Sex	Age	No. of Family Members
1	Phouen	Male	73	8
2	oth	Male	50	3
3	n Norn	Male	53	5
4	n Kosal	Male	-	4
5	g Han	Male	-	5
6	m Vun	Male	-	4
7	m Von	Male	-	5
8	Hot	Male	-	4
9	Ra	Male	-	6
10	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



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
<b>Organic waste (for livestock feeding) for 20 litres of volume</b>	<b>Yes/No</b>	<b>Bucket</b>	<b>0.75</b>	

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.



#### FGD Result (Group 5)

<b>Name of Village:</b>	Anlong Pir	<b>Village code:</b>	.....
<b>Name of Commune:</b>	Trapeang Thom		
<b>District:</b>	Prasat Bakong		
<b>Province:</b>	Siem Reap		
<b>Date of Interview:</b>	18 April 2021		
<b>Name of Interviewer:</b>	Mr. Chhun Bunmeng		
<b>Note taker:</b>	Mrs. Kun Chantrea		
<b>Facilitator:</b>	Ms. Chhun Sokhom		
<b>Title of FGD:</b>	Waste pickers – Other vulnerable groups: elderly, PWDs		
<b>Place of Interview:</b>	Rest hall near dumpsite in Anlong Pir Village		
<b>Date:</b>	19 April 2021		
<b>Starting time:</b>	15:30 pm		
<b>Completion time:</b>	17:00 pm		

#### Participants' Profile

	Name	Sex	Age	No. of Family Members
1	Sat	Female	73	5
2	Chan	Female	-	-
3	oeum	Female	-	-
4	Sao	Female	-	-
5	g Yom	Female	-	-
6	orm	Female	-	-
7	cy	Female	-	-
8	oun Chun	Female	-	-
9	oeung Yong	Female	-	-
10	h 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.



**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.



#### FGD Result (Group 6)

<b>Name of Village:</b>	Anlong Pir	<b>Village code:</b>	.....
<b>Name of Commune:</b>	Trapeang Thom		
<b>District:</b>	Prasat Bakong		
<b>Province:</b>	Siem Reap		
<b>Date of Interview:</b>	19 April 2021		
<b>Name of Interviewer:</b>	Mr. Chhun Bunmeng		
<b>Note taker:</b>	Mrs. Kun Chantrea		
<b>Facilitator:</b>	Ms. Chhun Sokhom		
<b>Title of FGD:</b>	For owners of businesses around the dumpsite that are related to waste collection		
<b>Place of Interview:</b>	At their house in Anlong Pir Village		
<b>Date:</b>	19 April 2021		
<b>Starting time:</b>	9:00 am		
<b>Completion time:</b>	10:00 am		

#### Participants' Profile

	Name	Sex	Age	No. of Family Members
1	Keut	Male	58	5
2	n Sina	Male	37	4

#### Participants' Response

**1. 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.

**2. 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.



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.



**FGD Result (Group 7)**

<b>Name of Village:</b>	Anlong Pir	<b>Village code:</b>	.....
<b>Name of Commune:</b>	Trapeang Thom		
<b>District:</b>	Prasat Bakong		
<b>Province:</b>	Siem Reap		
<b>Date of Interview:</b>	19 April 2021		
<b>Name of Interviewer:</b>	Mr. Chhun Bunmeng		
<b>Note taker:</b>	Mrs. Kun Chantrea		
<b>Facilitator:</b>	Ms. Chhun Sokhom		
<b>Title of FGD:</b>	For workers in businesses around the dumpsite		
<b>Place of Interview:</b>	Rest hall near dumpsite in Anlong Pir Village		
<b>Date:</b>	19 April 2021		
<b>Starting time:</b>	7:30 am		
<b>Completion time:</b>	9:00 am		

**Participants' Profile**

	Name	Sex	Age	Highest Level of Education Attained	No. of Family Members
1	<input type="checkbox"/> Rithy	Male	14	Grade 4	8
2	<input type="checkbox"/>	Female	20	Grade 11	8

**Participants' Response**

1. **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.
2. **How many years have you been working there?**
  - Started work for around half a month
  - Started work for around one month
3. **Terms of employment:**
  - a. **How are you paid?**  
With monthly payment.
  - b. **How much are you paid?**  
The salary is between 50 US dollars (20,000 Riel) to 125 US dollars (500,00 Riels).



**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.



**FGD Result (Group 8 and 9)**

<b>Name of Village:</b>	Anlong Pir	<b>Village code:</b>	.....
<b>Name of Commune:</b>	Trapeang Thom		
<b>District:</b>	Prasat Bakong		
<b>Province:</b>	Siem Reap		

<b>Date of Interview:</b>	19 April 2021
<b>Name of Interviewer:</b>	Mr. Chhun Bunmeng
<b>Note taker:</b>	Mrs. Kun Chantrea
<b>Facilitator:</b>	Ms. Chhun Sokhom

<b>Title of FGD 8:</b>	Farmers and fisherfolk from the immediate surrounding community
<b>Place of Interview:</b>	Tropheang Teom Village, Kandek Commune
<b>Date:</b>	19 April 2021
<b>Starting time:</b>	2:00 pm
<b>Completion time:</b>	3:15 pm

<b>Title of FGD 9:</b>	Women's group from the immediate surrounding community
<b>Place of Interview:</b>	Tropeang Teom Village, Kandek Commune
<b>Date:</b>	19/04/2021
<b>Starting time:</b>	3:30 pm
<b>Completion time:</b>	4:50 pm

**Participants' Profile**

	Name	Sex	Age	No. of Family Members
1	ng Sim	Male	50	6
2	un	Male	39	3
3	Phat	Male	59	8
4	m Lous	Male	63	3
5	Chan	Male	50	3
6	Piseth	Male	41	4
7	m Lai	Male	40	4
8	Yun	Male	50	4
9	Vichhun	Male	35	3
10	Nuon	Male	36	3
11	un Kea	Male	37	4
12	Sam An	Male	40	5



**Participants' Profile for FGD 9**

	Name	Sex	Age	No. of Family Members
1	m Reuy	Female	-	-
2	ng Ny	Female	-	-
3	Vuon	Female	-	-
4	uon Reung	Female	-	-
5	g Pum	Female	-	-
6	m Vann	Female	-	-
7	Mao	Female	-	-
8	ng Mai	Female	-	-
9	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 resevoir 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



- 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.



**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,

# Public Consultation Meeting and Stakeholder Engagement Report

## I. Brief Overview of the Proposed Cambodia Solid Waste and Plastic Management Improvement Project

The World Bank (WB) and the Royal Government of Cambodia (RGC) are working to prepare the proposed Cambodia Solid Waste and Plastic Management Improvement Project (CSWPMIP) with the objective of improving the solid waste, plastic management, and capacity in selected municipalities in Cambodia. The Project will finance solid waste management investments in (regional) landfills, other solid waste infrastructure, cost-effective treatment/recycling, regulations, and capacity building at national and local levels together with supporting the improvement of the performance of private sector.

The project will be implemented over a six-year period. Participating municipalities preliminarily identified for solid waste infrastructure financing under the Project are the following: (a) Siem Reap Town in Siem Reap province, (b) Chbar Mon Town in Kampong Speu province, and (c) Ta Khmao Town in Kandal province.

A pre-feasibility study is being undertaken to inform the Project preparation as well as the preparation of an Environmental and Social Management Framework (ESMF) with Resettlement Policy Framework (RPF), and Indigenous Peoples Planning Framework (IPPF), a Preliminary Environmental and Social Impact Assessment (ESIA) for Siem Reap and a Stakeholder Engagement Plan (SEP). These include a detailed assessment of site suitability for landfill and waste treatment and material recovery facilities (MRF) for recyclables and composting facilities.

## II. Description of the Public Consultation Meetings and Stakeholder Engagements

As part of the process to develop a Stakeholder Engagement Plan (SEP) for the Project, the Ministry of Interior (MOI), together with the Ministry of Public Works and Transport (MPWT) and the Ministry of Environment (MOE), have proposed to organize public consultation and stakeholder engagement activities in Siem Reap, Kampong Speu and Kandal with the possible project-affected communities.

The main objective of the public consultations and stakeholder engagements is to inform and discuss with different groups of stakeholders on the project design, specifically:

- a) objective, components and activities as well as eligibility criteria;
- b) infrastructure investments in solid waste disposal and recycling, composting;
- c) site suitability process for landfill investments and site options;
- d) Potential risks and impacts and foreseen mitigation measures and accompanying documents to be disclosed and consulted;
- e) stakeholder engagement process with interested and potentially project affected stakeholder; and,
- f) grievance mechanism and preferred ways of stakeholder engagement and

communication.

### III. Schedule

In coordination with the MOI and the local authorities, the public consultations and stakeholder engagements were held at the provincial hall (with provincial authority, district/municipality, communes, villages, and relevant line departments) and at the locations of the Trapeang Thom commune office near the current dumpsite (Landfill Site Option 1) and at Trapeang Tim village, Kandaek commune (Landfill Site Option 2) in Siem Reap from November 29 to December 1, 2021.

As for Kampong Speu, the public consultation and the stakeholder engagements were held in the morning on December 7, 2021 at Sovannkiri Pagoda participated by representatives from MOI, Chbar Mon Municipality, Sangkat, villages, waste-pickers and the residents living near the existing dumpsite. In the afternoon, the team conducted the site visit to the new landfill site option led by a deputy governor of Kampong Speu. Similar public consultation and stakeholder engagements were also held at Preah Puth Andet Pagoda in Kandal province on December 9, 2021

Registration and inquiry on COVID-19 with body temperature checking, alcohol spraying were conducted on the participants and compliance with preventive health and safety measures, including social/physical distancing was ensured throughout all sessions.

A summary of the schedule and venues of the public consultations and stakeholder engagements can be found in Error! Reference source not found..

**Table 2: Summary of Public Consultation and Stakeholder Engagement Schedules**

Province	Sessions	Type of Meeting (No. of Participants)	Schedule	Venue
<b>Siem Reap and national</b>	1. Meeting with government municipal, Bakong district, Kandaek, Trapeang Thom communes and village chiefs and line departments DPWT, DOE, and DOH.	Physical (33) Online (>20)	November 29, 2021 8:30 – 11:30 AM	Siem Reap Provincial Hall
	2. Kandaek Commune Chief, Trapeang Tim village chief, residents and community at proposed WWTP site	Physical (33)	November 29, 2021 2:00 – 5:00 PM	Kandaek Commune
	3. Trapeang Thom commune chief, 6 village chiefs, line departments, DPWT and DOE, waste-pickers and neighboring communities	Physical (38)	November 30, 2021 8:00 – 11:30 AM	Trapeang Thom Commune
	4. Vulnerable groups, children at the existing dumpsite, 6 village chiefs	Physical (39)	November 30, 2021 2:30 – 4:30 PM	
	5. Sub-National Level (provincial, municipal, district Levels), line departments, DPWT, DOE, and DOH waste-pickers, neighboring communities, GAEA, CINTRI) joined with business, tourism sector, residents, NGOs, any other interested stakeholders	Hybrid: Physical (33) Online (>20)	December 1, 2021 8:30 – 11:30 AM	Siem Reap Provincial Hall
<b>Kampong Speu</b>	1. Sangkat Chbar Mon Chief, Sampov village chief, residents, community at	Physical (80)	December 7, 2021 8:00 – 11:30 AM	Sovannkiri Pagoda

Province	Sessions	Type of Meeting (No. of Participants)	Schedule	Venue
	existing dumpsite, vulnerable groups, children at the existing dumpsite			
	2. Site Visit for Site Option (Vice Governor, MOI, WB, KCC, ESC)	Physical (~10)	December 7, 2021 2:00 – 5:00 PM	New Site Option Location
<b>Kandal</b>	1. Prek Ho commune chief, Prek Ho Keut 1 village chief, residents, community at existing dumpsite, vulnerable groups, children at the existing dumpsite	Physical (53)	December 9, 2021 1:30 – 5:00 PM	Preah Puth Andet Pagoda

#### **IV. Agenda**

The Public Consultations followed the following program and agenda:

- Arrival and Registration
- Singing of the Cambodian National Anthem,
- Opening Remarks
- Welcome Remarks
- Overview of the Project and Brief Result of the Study
- Overview of the Public Consultation and Stakeholders Engagement Workshop and Open Ceremony
- Overview Of Project Objective, Components, Activities, and Applicable Environmental and Social Standards
- Process for Landfill Site Suitability Analysis and Selection and Preliminary Conclusion
- Possible Landfill and Waste Treatment Facilities, Pollution Clean-Up and Management
- Open Forum / Question and Answer
- Closing

After the presentations, the community facilitator led the exchanges and discussions in the open forum with the question and answer (Q&A) session. All issues, concerns, ideas and suggestions of the stakeholders/participants raised during the open forum were captured and documented in the minutes of the public consultation meetings.

# Siem Reap Public Consultations and Stakeholder Engagement

## Minutes of the Meetings

November 29, 2021 | 8:30 – 11:30 AM  
Provincial Hall

Siem Reap

*See photos and attendance list.*

**Welcome Remarks by Siem Reap authority representative, Mr. Sok Thol, Director of Provincial Administration:** Siem Reap is the one of the world's tourism destinations and shared the largest income for the province. There are ongoing projects being undertaken in the province such as:

1. Thirty-eight (38) roads of USD\$150 million financed by the government. It has now reached 90% of civil work.
2. JICA Smart City Project
3. Auto parking project and battery used-bikes/cars project in Siem Reap
4. CSWPMIP Team: Meeting, data collection, and field visits with the support of Siem Reap authority. Current dumpsite in Anlong Pir Village, Trapeang Thom commune (8-ha land with possible expansion) with approximate 456 households (HHs) equating to about 2,186 possible project-affected persons (PPAPs) and at Trapeang Tim Village, Kandaek Commune (58-ha land) with approximate 210 households equating to about 1,050 PPAPs and another location at Romchek Village, Romchek Commune, Banteay Srei District (50-ha land) which is adjacent to forest community and Apsara Zone. Several discussions were carried out in the past. Siem Reap Governor wanted to rehabilitate the current dumpsite as the new one (Proposed WWTP site in Kandaek commune) is sensitive and in the flood area.

Medical waste is still an area of concern. The support from WB is important to address environmental and social concerns arising from the dumpsite and poor waste management, which was also highlighted in the Smart City Project of Siem Reap.

**Remarks and Opening Ceremony by Mr. Suon Samrith, Deputy Director of Department of Function and Resources, General Department of Administration (GDA), MOI:** The project preparation has started since early 2021. A pre-feasibility study is underway with learning from international experiences in the region. The main focus is on improving of environmental conditions of the current open dumpsite. The three (3) provinces of Siem Reap, Kandal and Kampong Speu are included. The main objectives of the RGC are to:

1. Improve waste management and expand to other target areas
2. Implement waste management policies, and
3. Build the capacity development at national and provincial levels.

The MOI expressed their gratefulness to the Siem Reap authority, relevant sub-national level authority and the WB for possibility to finance the project to improve waste management system in the country.

**Remarks by Katelijn Van den Berg (WB):** This mission aims at consulting with provincial authority, and meeting with commune authority, and all stakeholders. Site suitability assessment is underway to identify positive and negative issues as it is sensitive infrastructure both on environmental and social issues. All stakeholders will be encouraged to express their concerns. Now, the project is at: (i) Preparation of the project by the RGC, (ii) Ongoing feasibility study, siting options by ESC and CEST/KCC consulting firms, and (iii) Parallel environmental and social (E&S) studies by CEST/KCC on potential risks and impacts and measures.

**Virtual Presentation by Nigel Landon (ESC), consultant firm on the plan and results of the pre-feasibility studies:** Virtual presentation of the plan which is split into three sections: (1) the project objectives; components and activities, (2) landfill site suitability assessment and selection process, and (3) possible landfill and waste treatment and recycling facilities (ref. PTT material developed by the team).

**Presentation by Yim Mongtoeun (KCC):** The project's ESF relevant standards (all except ESS 9) and ESF instruments being prepared (ESMF, RPF, IPPF, LMP, and preliminary ESIA).

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### Questions (Concerns) and Answer

*Facilitated by Mr. Pum Thol, Community Facilitator*

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- 1. So Platong (Bakong District Governor):** He agreed and expressed happiness with the result of preliminary study for improving on existing dumpsite because sanitary landfill can reduce impacts and risks as much as possible. He also mentioned that storage (packaging), transport, and landfill management are key for solid waste management (SWM). Improving the current dumpsite would result in (1) reducing impacts and (2) rehabilitating and improving physical facilities. Bakong District will join hands with all stakeholders to realize the project.
- 2. Nhet Bol (MOE):** Open dumpsite and sanitary landfill are different. The ADB and WB are supporting the CSWPMIP. Once the project is confirmed for the implementation, capacity and budget are needed for district/municipal administration. Without supporting budget for operation, the management of sanitary landfill may fail. He expressed concern on the management of the sanitary landfill's sustainability especially the budget for operation. If not available, the planned sanitary landfill will become an open dumpsite which is a waste of money.
- 3. Sok Thol (Director of Siem Reap Provincial Administration):** SWM has common problems regarding to the development especially in developing countries. One of the problems is budget which is the cause of the failure.
- 4. Kim San (Provincial Official):** When are the CH<sub>4</sub> and Compost received and how will this be shared to users?

*Katelijn Van den Berg (WB) responded that the municipality will establish, with the support of the Project, fee collection to pay for the private collection firm. There are a lot of the requirements for the collection contract, including performance indicators. Technical assistance support will provide GIS-*

*based maps for easy waste and fee collection, and planning. Regarding the question from Kim San on CH4 and Compost, based on the public consultations conducted at the local level, it will depend on how much interest or requirement there is (both energy and compost). However, CH4 and Compost should be prioritized to the nearby community and more benefits from recyclables.*

- 5. Siem Reap Authority:** In 2035, incoming tourists will increase up to 10 million. Waste management is a core agenda of the Siem Reap province. There are gaps in capacity and financial transfer to districts/sub-national administrations. They confirmed their support to the project.
- 6. Commune authority on the current dumpsite:** There is both concern and happiness to have a better to have sanitation system. He is happy with the project, if the management system is good – if it reduces pollution, and is well-managed. He mentioned that people always complain about the existing dumpsite so when they hear about the future rehabilitation of the dumpsite, they are happy with the project.

The MOI advised all local authorities to disseminate message to PPAPs and villagers about the project and willingness of the government to support the project.

**November 29, 2021 | 2:00 – 5:00 PM Trapeang Tim Village, Kandaek Commune, Bakong District**

*See photos and attendance list in ANNEX B.*

**Commune Chief:** The Commune Chief opened the consultation. She informed that they now throw garbage at Trapeang Thom commune, but it is not well-managed and the amount of garbage is increasing. With support of the WB, this project is now coming to fruition.

**Mr. Suon Samrith (Deputy Director of Department of Function and Resources, GDA-MOI):** With the WB (potential) financing, we have been preparing the project and are here to collaborate on the project today. As a cultural heritage designated-province, we chose a project for solid and plastic waste improvement. Today, we arrive at this project's preparation stage. We need to understand your interest, impression, recommendation, concerns and challenges. For project efficiency, we need to hear your voices/expressions.

**Mr. Chhim Seiha's presentation:** Today's participation is very important. We are in the process of selecting a site. However, no decision has been made on the location yet. We aim to support the management of solid and plastic waste in five (5) provinces. This consultation is important in the process of identifying a site. Three (3) sites are being introduced in Siem Reap, in which the new one (nearby WWTP site) is less favorable, as it is close to the Tonle Sap Biosphere Reserve (TSBR). The existing one in Anlong Pir village appears to be feasible with existing roads where people can continue to work at the same site.

**15-min Tea Break:** Before the break, one of the participants suggests that the explanation should be clearer and more concise as it is confusing. In answering the question, KCC mentioned that the project will make a sanitary landfill that can prevent groundwater pollution, lead to reduced odors, and make the site more hygienic, etc. KCC also clarified that the site has not been selected

yet. The current site is less favorable. All concerns expressed in the consultation will be taken into consideration.

During discussions there was an initial question about the size of the landfill. KCC answered that the size should be bigger than 10 ha, to enable to make the landfill size feasible and that should last for more than 10 years. The nine (9) standards relevant to the project were then presented.

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#### Question (Concern) and Answer

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**1. Why is only one village invited to this meeting and no other villages out of the 10 villages of the Commune (Kandaek)?**

*KCC responded that only one village (community) is invited to discuss the potential siting because the community is living/working close to the potential site for rehabilitation. KCC also indicates that the project aims at developing a sanitary landfill. The project has not come to a conclusion for site selection yet. However, three (3) sites were introduced by the Siem Reap authority as potential sites for further study.*

**2. Concerns regarding the size of the land requirement for the landfill. They also indicated that they do not want to have any landfill in the village because the construction of the facilities would limit our access to water for dry-season rice cultivation. It may also hamper the environment. The community is less concerned about the environmental impacts, because from the presentation, they feel they can trust the engineering solutions and E&S safeguarding measures presented. The rice fields are dependent on an abundant water resources, thanks to the 78 dikes built to retain the water for dry season uses.**

*KCC repeated, in response to the community, that we have not decided on the site yet. Once the site is selected, it will be built to meet sanitary conditions. The concerns about the lack of water for rice field are well taken into consideration by the project team, in the meantime.*

Mr. Suon Samrith (MOI) concluded the consultation by thanking everyone for their feedback and informed the participants that the preparation of this project will go through rounds of consultations and in-depth studies. He indicated that the process of project preparation is rigorous and requires careful thought, considering all factors. As for the project, the study team will try their best to minimize the impacts on the people which is why the people were asked what they think the advantages and disadvantage of this project could be. A good point from the discussion today was that the participants provided positive feedback on the project which will improve sanitation at the landfill.

**November 30, 2021 | 8:00 – 11:30 AM  
Bakong District**

**Trapeang Thom Commune, Prasat**

*See photos and attendance list in ANNEX C.*

The emcee introduced the purpose of the consultations and key speakers from the authority (Trapeang Thom Commune chief), the MOI (Mr. Suon Samrith), and Provincial Department of Environment (PDOE). The key message of the first part of the session is the presentation of the

main objective of the CSWPMIP. The speakers encouraged participants, primarily waste-pickers and PPAPs living in and surrounding the current dumpsite, to raise their concerns and expectations from the proposed project.

**Mr. Suon Samrith (MOI):** I come here to attend this consultation, just to understand your concern. We make the dumpsite better, improve sanitation. This is the target province for the sanitary landfill and it will help improve the sanitation for you and your children. We would like to understand the impacts on you and we thank you for your concerns, to avoid and minimize the impacts on your livelihood.

**MOE Representative:** What are the impacts of sanitation on your livelihood and the quality of air, water etc.? This project is being introduced to lessen the impacts on your livelihood. There are three (3) site options here. As an example (photo), this site always has flies and fire and creates bad smelling water from your well. This project wants to obtain your feedback to improve the project design. For example, if the site is enlarged, it may impact your livelihoods. Your feedback to contribute to this meeting will help us manage the risks and impacts.

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#### Question (Concerns) and Answer

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1. **Ms Yath, waste-picker from Anlong Pir village:** She suggested to provide medicines and PPE for waste-pickers.

*Katelijan Van den Berg (WB) responds that as part of the project, there will be PPE, health check and health benefits for waste-pickers.*

2. **Ms Sokleang, waste-picker from Anlong Pir village:** She suggested to improve access road to the current dumpsite. The current access road from NR6 to the site is difficult for trucks and WPs to move waste and recycling materials.

*CSWPMIP team member replied that the road rehabilitation is part of the rehabilitation of the dumpsite.*

3. **Ms Sa Um, from Phnom Dei village:** She raised a concern on the leakage of leachate which might pollute underground water (wells). She also raised concern about the bad smell from the discharge of waste.

*CSWPMIP team member responded that the design of the landfill will address this matter, including clean water. There will be possibility for supplying pipe water.*

4. **Ms Sorn, from Phnom Dei village:** Can we all have access to waste-picking as we are do now? She also requested for drilled well.

*CSWPMIP team member replied that the project will not remove access to waste-picking, except for kids below age that is prescribed by the Cambodian labor law. They would be provided avoiding disruptions to waste-based livelihoods. Again, some health care considerations and preventions will be considered for all waste-pickers, including PPE.*

Mr. Suon Samrith (MOI) concluded thanking WB, authority and relevant stakeholders for attending the consultations. Both WB and MOI representatives assured that all comments will be taken into consideration and will be incorporated into the design. The project ensures no harm to livelihoods of the waste-pickers.

**November 30, 2021 | 1:30 – 5:00 PM**  
**District**

**Trapeang Thom Commune, Prasat Bakong**

*See photos and attendance list in ANNEX D.*

The session was dedicated to gather feedback from vulnerable groups and children. The facilitator explained the positive and negative impacts caused by the current dumpsite and the rehabilitation works which would be financed by the project. All children (at secondary level from Anlong Pir village) and handicapped participants were encouraged to express their understanding on health impacts, social and environmental consequences from the current dumpsite and the benefits from improving the facilities. Most of the children and handicapped women understood the consequences and expressed strong support to the project.

Among the participants, six (6) children are directly working in the current dumpsite. They were asked to stand upfront of the meeting stage and tell their story involving waste-picking activities. All of them are of age 14 and below. They said they have volunteered to work in the field (some of them to join their mothers) and earn for their families. The children expressed that they are not happy and not willing to continue picking waste. When they were informed that they were not allowed to work in the field, most of them expressed happiness and said that they wanted to spend more time in school.

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#### **Question (Concern) and Answer**

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**A handicapped woman** requested to improve the current dumpsite as presented by ESC consultant.

**Ms Phalla, teacher from the Anlong Pir School**, said that she does not know how waste-picking and poor sanitation has impacted the kids' health. She expressed that she strongly supports the project to improve the current dumpsite as sometimes they can smell the dumpsite in school.

Mr. Suon Samrith (MOI) applauded kids courage in speaking up and showing their knowledge, comprehension and concerns.

**December 1, 2021 | 8:30 – 11:30 AM**  
**Hall**

**Siem Reap Provincial**

*See photos and attendance list in ANNEX E.*

**Remarks by representative from the provincial hall:** The authority welcomed and thanked the WB for making effort to help the province to address waste management issues. Plastic waste is a big concern due to rapid increasing of uses of plastic for packaging and in daily life. The same for the battery waste. The provincial administration committed to supporting this project and ready to work with all stakeholders.

**Remarks and opening ceremony by Mr. Suon Samrith (MOI):** Highlighted the components of the projects, the needs for improving SWM in Cambodia, and strong commitment made by the Royal Government of Cambodia to support the project through MOI as key counterpart.

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### Question (Concern) and Answer

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**1. Meng Kry (Deputy Governor of Siem Reap Municipality):** Garbage is a term, easy to say but implementation and operation is difficult (collect and manage). The challenges are with people in the Kandaek commune (Bakong District). The current open dumpsite is causing a problem. But for this project with the proposed sanitary landfill, people will support if it is well managed according to the plan. People who are living around the current dumpsite used to eat their meals inside a mosquito net because of flies from the dumpsite. Local community needs to disseminate further information about health issues and the plan for sanitary landfill. At the provincial level, there will be a unit and M&E system to be established, and the contract arrangement with private companies. Technical support is needed in this area. For waste management, what can be done? The current land is 8 hectares and only 2 hectares are reserved. Is that sufficient? Currently, average waste generated is around 350 tons to 500 tons per day as a result of influx of tourists. What will be done with the capacity of the site and how long it will be filled up? If the government plans to buy additional land that is okay. He mentioned about the contract, and recommended to buy or reserve some spare land by the working team at provincial level as the land price in future will be very high and think ahead of amount of waste can be disposed depending on the life span of landfill.

*Mr. Suon Samrith (MOI) adds that **the** 113 Sub-decree allows municipal and district governors to manage garbage, but its implementation is inconsistent. The contract is for 10 years according to the sub-decree. But in reality, in some locations this is for 30 to 50 years, as the contracts were entered before 113 sub-decree. So, there will be a solid waste committee at MOI. Our inter-ministerial committee (MEF, MOE, and MOI) created a contract template for all districts/municipalities.*

*Katelijan Van den Berg (WB) responded that Project will provide technical support to the municipal waste management unit to work with the private sector. The support to the municipality will include the performance indicators, transport and landfilling system (to collect fees and use the revenue to pay the contractors). Cost recovery is important and must assess how much costs are recovered from fee collection from households. This is to achieve a better environment would require a better financial health. The municipality is conducting inventory on the different types of dwellings etc. to allow a fee collection system to work.*

**2. Representative from Provincial Hall:** There should be environmental and health mechanism to reduce impacts on environment and to ensure health of people is well safeguarded. All authorities are here today the local authorities need to plan well in advance for potential impacts to land. Since the land-use plan for Siem Reap city is being prepared, securing/expansion of landfill size should be part of the local land-use plan. Furthermore, there

is a ring road project there, so the price of land there will be increased. The authorities should secure the land as soon as possible. There are people who support and do not support the project so the provincial authorities need to plan mechanism to deal with it. Garbage is thrown there. There should be local incentives (i.e., infrastructure investment to meet the need of local people). This is to identify the sub-projects to support local community.

*Katelijan Van den Berg (WB) responded that the land needs to be bigger than 2 hectares to secure landfill that can live longer than 10 years, and this financing will need to be part of the Project financing. It is important to minimize and reduce the amount of waste. As mentioned, the waste will increase, waste management is important. The first and second components are to raise awareness (recycling etc.) for reducing the amount of waste. There will be different opinions among communities that is why community consultation is important for site selection process. Community input is important as a part of site selection process.*

3. **Trapeang Thom Commune Chief:** My vision for a long time is to turn the current dumpsite into a sanitary landfill, and it has been 13 years. As the Provincial authorities said, we need to find a way to secure additional land, due to a planned expansion. The current dumpsite area is not classified in APSARA area, so it can be more developed than the city now. The land price is increasing (from 5 to 7, to 10 now USD\$15 per sq.m.). In the past, when there were demonstrations from local villagers, the province let MOI to resettle it. My request is to ensure that the ministries work closely with the waste-collecting companies.
4. **Provincial Department of Environment:** We are happy with the proposed project. At the same time Smart City Project also contains a component related to waste collection. We request that the system under the proposed project is well connected to the Smart City Project. How about neighboring districts, shall the capacity development extended to them to ensure that they can benefit from the project in the same manner? For plastic waste, plastic materials are to be exported, there should be support provided to them (local) to be active (particularly since its export has been closed until now due to COVID-19 pandemic).
5. **A female villager:** Requested the companies to stop children from entering the dumpsite to collect recyclable materials. They have to go to school at this age.
6. **Village chief:** For this project, I am happy because people complained about water, garbage coming to their home and rice fields. I am happy to see this project coming soon.
7. **GAEA Representative:** We own the landfill in Bakong district. How much land is needed and where? When will this be functioned for GAEA to operate? Will the company pay for use of the landfill? And how the company will be collecting the fees?

*Mr. Suon Samrith (MOI) responded that waste management is under the authorities of district and province, so this will be supported by MOI's working group with WB.*

8. **Siem Reap Vice Governor:** We encourage local authorities to disseminate information to people. We requested a detailed report for a year and a monthly report of waste collection and

discharge data from GAEA. A way forward, the province will collect the fees, and GAEA will transport garbage.

# Kampong Speu Public Consultations and Stakeholder Engagement

## Minutes of the Meeting

December 7, 2021 | 8:00 – 11:30 AM  
Mon

Sovannkiri Pagoda, Sangkat Chbar

*See photos and attendance list in ANNEX F.*

**Sangkata Chbar Mon Chief:** It is a good opportunity for my people to attend this consultation and hear directly from the WB and CSWPMIP study team. We would like to welcome all delegates and wish the consultation to be fruitful.

**Chbar Mon Municipal Vice Governor:** The consultation focuses on new site for a sanitary landfill. The current dumpsite is managed by the provincial authority and DoE, with several people living and working at the dumpsite. If the project doesn't move the current dumpsite, are you happy? Yes, we are, they replied. If the project improves the current dumpsite, are you happy? Yes, we are, they replied. The project will ensure impacts are mitigated and impacts on livelihoods are compensated. Are you happy? Yes, we are, they replied. We will discuss the project, what to be done and your role in improving SWP management in our villages.

**Mr. Suon Samrith (MOI):** The project aims at improving collection, transport and disposal management. So, your role is to cooperate with the project, especially waste storage. The project will also improve the environmental and social conditions of people working and living at and around the dumpsite. Your inputs are beneficial to improve the project design, which participation is core agenda of the decentralization and deconcentrating policy of the RGC. So please speak up and share your ideas. We will record your ideas and concerns for the sake of the project design. At this stage, we don't know where the new site will be yet. Thus, improvement of the current one is necessary. I thank you all for joining the discussion and thank all provincial and local authority and the WB for spending time and resources with us today.

*Emcee: Can you read the slides? One of the participants: I am illiterate.*

KCC presented the project activities and components, landfill siting options, landfill selection, recovery facilities, landfill investment; results of pre-feasibility studies and the ESF instruments.

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### Question (Concern) and Answer

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1. **Mrs. Pheth, 59 years old:** expressed waste storage, packaging, and health issues from dumpsite.
2. **Mr. Sorn, 77 years old, from Khpong village:** Recycling of waste, waste storage, composting, methane gas (CH<sub>4</sub>) can be extracted for cooking. Improvement of the current dumpsite will be improving the environmental conditions and public health. I am happy with the plan for the improvement of the dumpsite.
3. **Ms. Nhoeun:** Improve the current dumpsite can improve the living conditions of people.

4. **Mrs. Sreyneang, migrated from another province and lives in Kampong Speu:** No further comments, but happy if the current dumpsite is improved. People will benefit from the project, but I don't know what the specific benefits are.
5. **Mr. Phoeun, 76 years old, Vice chief of Khpong village:** I support the plan for improving the current dumpsite. Three villages (including pagoda) surrounding the dumpsite are severely affected by the pollution, especially on people's health. People noticed the increasing of flies from the dumpsite, smoke and odor.
6. **Mrs. Kuntheary, 57 years old:** I support the plan for improving the site although some negative impacts to people.
7. **Mr. Makara, 28 years old, waste-picker:** The presentation is very clear because waste-pickers will be safer while collecting waste. I am happy and will support the improvement of the dumpsite. He suggested to have PPE when the project is implemented.
8. **Mr. Ly, 66 years old, village chief of Tamol village:** Landfill will be fenced and covered properly. If the project improves the current dumpsite to a sanitary landfill, will all WPs be having the chance to work there? How do we separate waste? Waste transport was poorly covered, waste dropping on the roads. I would like to request the waste collection company to improve the transport system, especially avoiding waste dropping on the roads.
9. **Ms. Ly, 69 years old,** one of the villagers suggested that waste-pickers do not allow kids to pick waste. They should go to school.
10. **A female villager:** I am old and taking care of grandchildren. When I go to landfill, how can I look after them if the project will not allow kids to enter the landfill? After school, they join me to landfill. But they did not do waste-picking.
11. **Mr. Nat, Sampov village chief, one of the villages surrounding the current dumpsite:** We can smell from the dumpsite although we are 2km away. I support the plan to improve the environmental conditions.
12. **Mr. Sok, a handicapped villager:** I suggest waste collection company to keep and cover waste properly to avoid waste dropped and scattered on the roads.

The Chbar Mon Municipality Vice Governor thanked MOI for supporting the consultation and expressed gladness that the project selected Chbar Mon to be part of the CSWPMIP. He also said that once the project is decided, he and the Sangkat authority will strongly support as waste-sorting, recycling, and dumpsite improvement will benefit their villages.

Suon Samrith (MOI) informed that they will be back for more consultations to see how the consultation results will fit in the project design.

# Kandal Public Consultations and Stakeholder Engagement

## Minutes of the Meeting

December 9, 2021 | 1:30 – 5:00 PM  
Prek Ho

Preah Puth Andet Pagoda, Sangkat

*See photos and attendance list in ANNEX H.*

**Emcee:** The involvement of the authority (Sangkat Prek Ho chief, Prek Ho Keut 1 village chief, etc.) is essential and the representatives of the villagers and the community in the vicinity of the existing dumpsite and waste-pickers as well.

Representatives from the MOI (Mr. Suon Samrith), and the Ta Khmao Municipality (Mr. Lay Samrith, Vice City Governor) were the speakers for the session. The key message of the presentation is the project's objective to improve solid waste and plastic management in Kandal and to rehabilitate the current dumpsite with infrastructure such as material recovery, composting and waste treatment facilities. Speakers encouraged participants, primarily waste-pickers and people living at and around the current dumpsite, to express their concerns and expectations of the proposed project.

**Ta Khmao Municipality Vice Governor:** The consultation is for a sanitary landfill. The current dumpsite is managed by the provincial authority. In the city of Ta Khmao, there are two (2) garbage collection companies – CINTRI and Po Seng Tara. CINTRI obtained their license to continue from Khim Sunny Company and is currently in a 28-year contract from January 1, 2012 to December 31, 2039. The collection and transportation by CINTRI company is carried out in seven (7) Sangkats of Ta Khmao City. As for the Po Seng Tara company, they collect garbage in Sangkat Roka Khpos and Sangkat Sitbo. However, in Sangkat Koh Anlong Chen, there is no garbage collection service. Ta Khmao has a population of over 100,000 and only has 2 hectares of dumpsite, which is too small to accommodate the current amount of garbage. The amount of garbage increases from 116 tons per day in 2018, 150 tons per day in 2019, to 279 tons per day in 2021. The increase of waste in Ta Khmao City is a concern for the future and the current dumpsite is too small to handle such amount of waste in the future. The provincial administration should consider finding another location to serve as a sanitary landfill.

**Mr. Suon Samrith (MOI):** We have come here to attend the public consultation to understand your concerns and expectations regarding the proposed project. We invite you to share your comments, concerns and questions. We will record yours in the interest of project design. The project will also improve the existing dumpsite on the environmental and social conditions of the people working and living at and around the existing dumpsite, the project will not allow children under the age of 14 to work at the landfill if the current dumpsite is rehabilitated. The project has also thought about how to get these children to school. Currently, we are studying the location of a new landfill that is larger than the current one, but we have not yet decided on where the location will be. However, the environmental and social improvement of the current dumpsite is necessary.

**Mr. Chhim Seyha (PPIC):** A presentation on project activities and components, landfill location options, landfill selection, and recovery facilities was given. No decision has been made on the location to support solid and plastic waste management in Kandal province yet. The existing one might be rehabilitated and it is a place for material recovery, composting and waste treatment facilities, while waste-pickers can continue to work at the same site.

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### Question (Answer) and Concern

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- 1. Mr Samrot, resident of Prek Ho Lech:** He lives close to the dumpsite but is not a waste-picker while he does sometimes goes to dumpsite to collect garbage. He is in favor of a new sanitary landfill project, but he is afraid that he will not be able to collect the garbage anymore because the new landfill could be far from his home. He proposed a project to help him and other villagers to collect garbage more easily and in a more hygienic and safer way if the current dumpsite is rehabilitated.
- 2. Sok Raksmeay (Deputy Chief of Sangkat Prek Ho):** When will the implementation of this project start? Because the project has been delayed for a long time or it is still under consideration? People living around the dumpsite are very concerned about the access road to the dumpsite, the lack of sanitation, the stench and the flies that endanger their health. The access road is damaged every year and people often block the road so that the authorities find a solution for them.

*Katelijan Van den Berg (WB) responded that the study for the project is still in progress. Due to the COVID-19 pandemic, progress on the study has been delayed. The problem with the project is that the current dumpsite is so small that cannot accommodate the current volume of waste. Choosing a new location is difficult due to the rapid growth of the city, urban expansion, and especially in the flooded area, so relocation has not yet been determined.*

- 3. Ms Isal, a dumpsite employee:** She is disabled as a result of a traffic accident on the way to the dumpsite, she is concerned about losing her job if the dumpsite is moved. She cannot travel far from her home, as she cannot travel to the new landfill, which can be very far from her home

*Katelijan Van den Berg (WB) responded that a site for a new location for the proposed sanitary landfill must be found, as the current dumpsite is only 2 hectares in size, will not be able to meet the demand. However, the current site could be rehabilitated and used for material recovery, composting and recycling which can reduce the amount of waste and the non-recyclable waste will be dumped at a new site. Different criteria for the identification of the site are taken into account and the rehabilitation of existing dumpsite is more likely to improve the environmental and social conditions.*

- 4. Ms Mart, resident of Prek Ho Lech village:** She has been working at the dumpsite for six years. She said that the transportation of waste is not well covered, with waste falling on the road. She requested the waste collection company to improve the transportation system, especially by preventing waste from falling on the roads. The current dumpsite is unsanitary, with flies and odors. She enjoys working at the current dumpsite and earning money to help her children for their study. She is happy if the current dumpsite is improved/rehabilitated.

*Yin Somean (WB) responded that environmental remediation at the dumpsite is also part of the project. The whole area will be covered with soil to prevent plastic waste from flying away, as well as odors and flies. The collection of waste in the city, its transportation to the landfill and the improvement of the access roads are parts of the project.*

- 5. Mr Him, villager of Prek Ho Keut:** The access road to the dump is very damaged. We request the project to rebuild the access road to avoid any accidents. Many workers and school children are using this road. She requested the project to help the children living near the dumpsite and who do not have enough money to go to school.

*Mr. Chhim Seiha (PPIC) responded that the project has also considered the rehabilitation of the access road, with budget allocated for the construction of the access road. He assured that the project has considered thoroughly the environmental and social impacts, if the project has serious environmental and social impacts, the project will not be implemented then.*

- 6. Thor Sopheap (DOE):** Based on experience, how far away from a residential area should a landfill be built?

*Mr. Chhim Seiha (PPIC) answered that it depends on the standards that have been applied, the distance between the landfill and the residential area should be from 1km to 1.5km. The distance to the residential area and the density would be taken into account when choosing the location of the landfill.*

*Yin Somean (WB) added as an example, the landfill in Indonesia is only 300m from the city center, but does not affect the people living there. The construction of a sanitary landfill depends on the budget. If there is a lot of money, we can build a very hygienic landfill with modern equipment to prevent all environmental and social impacts.*

- 7. Mr. Lay Samrith (Ta Khmao Municipality Vice Governor):** The current dumpsite used to be very far from the city, so people did not want to live near it. But now, houses, buildings including Boreys (blocks of houses) have settled near the dumpsite. I want to thank the World Bank and the study team for visiting the site for proposing a sanitary landfill. Is the site suitable for a landfill? Will there be a strengthening of the national legislative, policy and institutional framework that do not allow people to settle near the landfill? If so, how far from the landfill will that be - 300m? 500m? Or will they be allowed to build their houses nearby? The provincial and municipal governments of Ta Khmao strongly support this project.

*Mr. Suon Samrith (MOI) replied that for the study of the project, we have already considered that the current dumpsite will be prepared as waste recycling and composting facilities with management measures, and the new landfill will have the applied standards of the WB's guideline for managing the landfill in a hygienic way. To make the project effective, we have prepared all stakeholders to participate in its implementation: The MOI will provide planning, consulting services, and contract development with private operators; the MOE will develop and strengthen national legislation, regulations, policies, and guidelines for solid waste and plastic management; the MPWT will develop landfill and landfill infrastructure such as composting, recovery facilities, transfer stations, and will be responsible for cleaning up the existing dumpsite.*

Mr. Suon Samrith (MOI) followed by thanking the authorities, and the stakeholders for their participation in the consultations. Kandal Municipality Vice Governor also thanked MOI for their support in the consultations and expressed happiness that the project has chosen Kandal for the CSWPMIP. He also said that if the project is implemented, the municipality will strongly support it.

**Photo Documentation**

*Photo 1. Open remarks by Mr. Sok Thol, Siem Reap (SR) Provincial Authority representative*



*Photo 2. Participants from MOI, SR authority, all relevant districts, communes, and villages, MOE and PDE, PDPWT, CEST, ESC, KCC.*



*Photo 3. Social distancing in the meeting room.*

*Photo 4. Virtual presentation made by Nigel Landon (ESC)*



*Photo 5. Opening Remarks addressed by Mr. Sok Thol (Siem Reap Authority representative)*

*Photo 6. Overview of the Project and purposes of the consultations and stakeholder engagement made by Mr. Suon Samrith (MoI representative).*



### Registration and Attendance List


  
**ក្រសួងអប់រំ យុវជន និងកីឡា**  
**ជាតិ សាសនា ព្រះមហាក្សត្រ**

**មជ្ឈមណ្ឌល**

គណៈកម្មាធិការជាតិរៀបចំការបោះឆ្នោត  
 ដើម្បីជ្រើសរើសសមាជិកសភាជាតិ  
 ក្រសួងអប់រំ យុវជន និងកីឡា  
 លេខ ១១ ផ្លូវជាតិលេខ ៤ ភូមិបឹងកក់ ខណ្ឌបឹងកក់ រាជធានីភ្នំពេញ

ល.រ N°	ឈ្មោះ Name	ឋានៈ/តំណែង Position	អង្គការ Organization	ហត្ថលេខា Signature	លេខទូរស័ព្ទ Phone Number
១	ស៊ុន ស៊ុន	សមាជិកសភា	គណៈកម្មាធិការជាតិ		
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៣					
៤	ឃី ឃី	មន្ត្រីបច្ចេកទេស	គណៈកម្មាធិការជាតិ		
៥	ស៊ុន ស៊ុន	សមាជិកសភា	គណៈកម្មាធិការជាតិ		
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៩	ស៊ុន ស៊ុន	សមាជិកសភា	គណៈកម្មាធិការជាតិ		
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២៧	ស៊ុន ស៊ុន	សមាជិកសភា	គណៈកម្មាធិការជាតិ		

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៣១	ស៊ុន ស៊ុន	សមាជិកសភា	MPWT		
៣២	ស៊ុន ស៊ុន	សមាជិកសភា	MPWT		
៣៣	ស៊ុន ស៊ុន	សមាជិកសភា	MPWT		
៣៤	ស៊ុន ស៊ុន	សមាជិកសភា	MPWT		
៣៥	ស៊ុន ស៊ុន	សមាជិកសភា	MPWT		
៣៦	ស៊ុន ស៊ុន	សមាជិកសភា	MPWT		
៣៧	ស៊ុន ស៊ុន	សមាជិកសភា	MPWT		
៣៨	ស៊ុន ស៊ុន	សមាជិកសភា	MPWT		



**Photo Documentation**

*Photo 1. Registration and temperature check.*



*Photo 2. Participants from local villages.*



*Photo 3. Each participant received some snacks.*



*Photo 4. Women (and elderly persons) were encouraged to join and raised their concerns.*



*Photo 5. Mr. Suon Samrith (Mol) introduced the project objectives, components and activities.*



*Photo 6. Discussion led by Mr. Phum Thol, a professional community facilitator.*





November 30, 2021 | 8:00 – 11:30 AM  
Bakong District

Trapeang Tim Village, Prasat

Photo Documentation

Photo 1. Registration and COVID-19 measures, including social distancing was carried out.



Photo 2. Majority of the participants were women and around 20% were elderly people.



Photo 3. Opened the Remarks made by Chief of the Trapeang Thom commune.

Photo 4. Presented the Overview of the Project and purposes of the consultations and stakeholder engagement made by Mr. Suon Samrith (Mol representative)



Photo 5. Participants focused on the discussion.

Photo 6. Some women attended with kids during the public consultation meeting.



Photo 7. A participant raising concerns about health issues and smell from the current dumpsite.



Photo 8. Nearly all participants raised hands to show support to the project.



### Registration and Attendance List

THE ATTENDANCE LIST OF THE MEETING

Public Consultation Program of the Project in Siem Reap Province  
Project: Cambodia Solid Waste and Plastic Management Improvement Plan  
(CSWPMIP)

Stakeholder: Waste Picker  
 Date: 30-11-2021  
 Location: Trapeang Thum Commune  
 Total Participants: (Male: \_\_\_\_\_ Female: \_\_\_\_\_)

No	Name	Gender	Position	Organization	Contact Number	Signature
1	ឈ្មោះ	ប្រុស	អ្នករៀន	ស្ថាប័ន		
2	ឈ្មោះ	ស្រី	អ្នករៀន	ស្ថាប័ន		
3	ឈ្មោះ	ស្រី	អ្នករៀន	ស្ថាប័ន		
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7	ឈ្មោះ	ស្រី	អ្នករៀន	ស្ថាប័ន		
8	ឈ្មោះ	ស្រី	អ្នករៀន	ស្ថាប័ន		
9	ឈ្មោះ	ស្រី	អ្នករៀន	ស្ថាប័ន		
10	ឈ្មោះ	ស្រី	អ្នករៀន	ស្ថាប័ន		
11	ឈ្មោះ	ស្រី	អ្នករៀន	ស្ថាប័ន		
12	ឈ្មោះ	ស្រី	អ្នករៀន	ស្ថាប័ន		
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20	ឈ្មោះ	ស្រី	អ្នករៀន	ស្ថាប័ន		

THE ATTENDANCE LIST OF THE MEETING

Public Consultation Program of the Project in Siem Reap Province  
Project: Cambodia Solid Waste and Plastic Management Improvement Plan  
(CSWPMIP)

Stakeholder: Authorities  
 Date: 30-11-2021  
 Location: Trapeang Thum Commune  
 Total Participants: (Male: \_\_\_\_\_ Female: \_\_\_\_\_)

No	Name	Gender	Position	Organization	Contact Number	Signature
1	ឈ្មោះ	ប្រុស	អ្នករៀន	ស្ថាប័ន		
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3	ឈ្មោះ	ស្រី	អ្នករៀន	ស្ថាប័ន		
4	ឈ្មោះ	ស្រី	អ្នករៀន	ស្ថាប័ន		
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**Photo Documentation**

*Photo 1. Arrival and registration of school kids from Anlong Pir village.*



*Photo 2. Kids are concentrating on the consultations*



*Photo3. Overview and Opening remarks by respective agencies and local authority.*



*Photo 4. Presented the Solid waste management by Mr. Chhim Seyha (PPIC).*



*Photo 5. Concluded the consultation and Message from Mr. Suon Samrith (Mol).*



*Photo 6. Two handicap women attended the meeting.*



Photo 7. Kid expressed concern on health issues.



Photo 8. Six kids directly involved in waste-picking at the current dumpsite.



Photo 9. Expression from teacher of secondary school (Trapeang Thom Commune).



Photo 10. Kids join their mothers to earn from waste collection



Photo 11. Communities living around the current dumpsite expressed concerns on health from flies, smoke, smell, and underground water pollution.



Photo 12. Snacks being provided during the consultation.





**Photo Documentation**

*Photo 1. Room arrangement and social distancing.*



*Photo 2. Arrival of stakeholders and start of the session.*



*Photo 3. National anthem.*

*Photo 4. Opening remarks by respective agencies (left to right: MOI, and Siem Reap authority).*



*Photo 5. Representatives from private waste collector (GAEA).*

*Photo 6. Representative from COMPED, environmental sanitation NGO.*



Photo 7. Representative from CINTRI, Siem Reap.



Photo 8. Presentation on siting options, results of pre-feasibility studies and solutions and good practices.



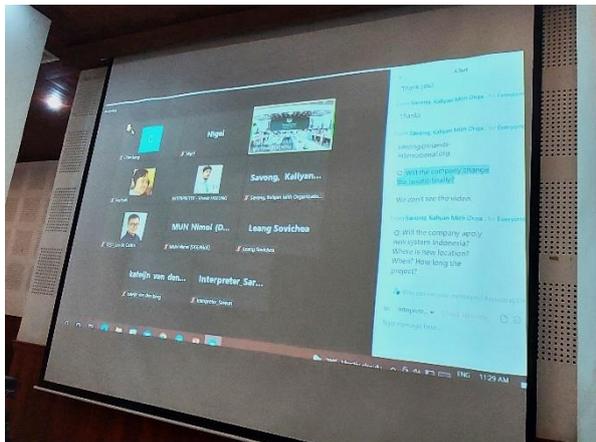
Photo 9. Request from a female villager to GAEA to stop kids from entering dumpsite because they did not go to school.



Photo 10. Support from village chief to the proposed project. Photo 2.



Photo 11. Questions posted via Zoom chat.



## Registration and Attendance List

WEI P30111  
CAMERA

**THE ATTENDANCE LIST OF THE MEETING**

**Public Consultation Program of the Project in Siem Reap Province**  
**Project: Cambodia Solid Waste and Plastic Management Improvement Plan (CSWPMIP)**

Stakeholder: citizen Authorities  
Date: 01-12-2011  
Location: Siem Reap Provincial Hall  
Total Participants: (Male: \_\_\_\_\_ Female: \_\_\_\_\_)

Sl. No	Name	Gender	Position	Organization	Contact Number	Signature
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P30111  
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**Photo Documentation**

*Photo 1. Stand-up for the national anthem.*



*Photo 2. Welcoming remarks by Mr Phat Sophal, the representative from Chbar Mon Municipality.*



*Photo 3. Overview made by Mr. Nov Nith on the project activities, objectives of Public Consultation and Stakeholder Engagement*



*Photo 4. Representative of handicapped people attended the consultation.*



*Photo 5. Elderly villagers who are involved in waste-picking attended the public consultation meeting.*



*Photo 6. Women and kids were encouraged to speak up and be heard.*



*Photo 7. Kids age below 14 participated in the consultation. Some of them involved in waste-picking.*



*Photo 8. COVID-19 preventive measures at the consultation site.*



Photo 9. Village chief raised concerns, suggestions and expressed support.



Photo 10. Villager shared thoughts during the meeting.



Photo 11. She migrated from another province and currently works at the dumpsite.



Photo 12. She said kids should spend more time at school rather than picking waste.



Photo 13. A male waste-picker expressed support to the plan for improving current dumpsite.



Photo 14. Closing remarks by Mr. Nov Nith, representative from MOI.



## Registration and Attendance List

**THE ATTENDANCE LIST OF THE MEETING**

**Public Consultation Program of the Project in Kompong Speu Province**

**Project: Cambodia Solid Waste and Plastic Management Improvement Plan (CSWPMIP)**

Stakeholder : **Authorities**  
 Date : 07-12-2021  
 Location : **Sovann Kiri Pagoda**  
 Total Participants : (Male=..... Female=.....)

ល.រ No	ឈ្មោះ Name	ភេទ Gender	តំណែង Position	អង្គការ Organization	ទូរស័ព្ទ Contact Number	ហត្ថលេខា Signature
1	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
2	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
3	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
4	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
5	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
6	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
7	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
8	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
9	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
10	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
11	Phat Saphal	M	vice governor	Chikernon		[Signature]
12	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
13	ស្រី ឈ័យ	៧	សមាជិក	KCC		[Signature]
14	ស្រី ឈ័យ	៧	សមាជិក	KCC		[Signature]
15	ស្រី ឈ័យ	៧	សមាជិក	KCC		[Signature]
16	ស្រី ឈ័យ	៧	សមាជិក	Government		[Signature]

**THE ATTENDANCE LIST OF THE MEETING**

**Public Consultation Program of the Project in Kompong speu Province**

**Project: Cambodia Solid Waste and Plastic Management Improvement Plan (CSWPMIP)**

Stakeholder : **Children**  
 Date : 07-12-2021  
 Location : **ស្ថិតិភ្នំព្រៃ (Sovann Kiri pagoda)**  
 Total Participants : (Male=..... Female=.....)

ល.រ N1o	ឈ្មោះ Name	ភេទ Gender	តំណែង Position	អង្គការ Organization	ទូរស័ព្ទ Contact Number	ហត្ថលេខា Signature
1	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
2	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
3	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
4	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
5	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
6	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
7	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
8	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
9	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
10	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
12	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
13	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]

**THE ATTENDANCE LIST OF THE MEETING**

**Public Consultation Program of the Project in Kompong Speu Province**

**Project: Cambodia Solid Waste and Plastic Management Improvement Plan (CSWPMIP)**

Stakeholder : **Vulnerable Person**  
 Date : 07-12-2021  
 Location : **Sovann Kiri pagoda**  
 Total Participants : (Male=..... Female=.....)

ល.រ N1o	ឈ្មោះ Name	ភេទ Gender	តំណែង Position	អង្គការ Organization	ទូរស័ព្ទ Contact Number	ហត្ថលេខា Signature
	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]
	ស្រី ឈ័យ	៧	សមាជិក	សមាជិក		[Signature]

THE ATTENDANCE LIST OF THE MEETING

Public Consultation Program of the Project in Kompong Speu Province

Project: Cambodia Solid Waste and Plastic Management Improvement Plan (CSWPMIP)

Stakeholder : Waste Picker  
 Date : 07/12/2021  
 Location : Sovann Kiri pagoda  
 Total Participants : (Male=..... Female=.....)

ល.រ. N10	ឈ្មោះ Name	ភេទ Gender	តំណាង Position	អង្គការ Organization	ទូរស័ព្ទ Contact Number	ហត្ថលេខា Signature
1	យាយ ភិរត	ស	អ្នករៀនសូត្រ	ស៊ីវិល		
2	បាប ភិរត			អ្នករៀន		
3	កោត ភិរត			អ្នករៀន		
4	ស៊ុន ភិរត			អ្នករៀន		
5	អៀង ភិរត			អ្នករៀន		
6	ស៊ុន ភិរត			ស៊ីវិល		
7	កោត ភិរត	♂		ស៊ីវិល		
8	កោត ភិរត	♂		អ្នករៀន		
9	ស៊ុន ភិរត	♂		ស៊ីវិល		
10	ស៊ុន ភិរត	♂		ស៊ីវិល		
11	ស៊ុន ភិរត	♂		អ្នករៀន		
12	ស៊ុន ភិរត	♂		ស៊ីវិល		
13	ស៊ុន ភិរត	♂		ស៊ីវិល		
14	ស៊ុន ភិរត	♂		ស៊ីវិល		
15	ស៊ុន ភិរត	♂		ស៊ីវិល		
16	ស៊ុន ភិរត	♂		ស៊ីវិល		
17	ស៊ុន ភិរត	♂		ស៊ីវិល		
18	ស៊ុន ភិរត	♂		ស៊ីវិល		

THE ATTENDANCE LIST OF THE MEETING

Public Consultation Program of the Project in Kompong Speu Province

Project: Cambodia Solid Waste and Plastic Management Improvement Plan (CSWPMIP)

Stakeholder : Communities  
 Date : 07/12/2021  
 Location : Sovann Kiri pagoda  
 Total Participants : (Male=..... Female=.....)

ល.រ. N10	ឈ្មោះ Name	ភេទ Gender	តំណាង Position	អង្គការ Organization	ទូរស័ព្ទ Contact Number	ហត្ថលេខា Signature
1	ស៊ុន ភិរត	ស	ស៊ីវិល	ស៊ីវិល		
2	ស៊ុន ភិរត	ស	ស៊ីវិល	ស៊ីវិល		
3	ស៊ុន ភិរត	ស	ស៊ីវិល	ស៊ីវិល		
4	ស៊ុន ភិរត	ស	ស៊ីវិល	ស៊ីវិល		
5	ស៊ុន ភិរត	ស	ស៊ីវិល	ស៊ីវិល		
6	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
7	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
8	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
9	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
10	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
11	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
12	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
13	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
14	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
15	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
16	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		

ល.រ. N10	ឈ្មោះ Name	ភេទ Gender	តំណាង Position	អង្គការ Organization	ទូរស័ព្ទ Contact Number	ហត្ថលេខា Signature
1	ស៊ុន ភិរត	ស	ស៊ីវិល	ស៊ីវិល		
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3	ស៊ុន ភិរត	ស	ស៊ីវិល	ស៊ីវិល		
4	ស៊ុន ភិរត	ស	ស៊ីវិល	ស៊ីវិល		
5	ស៊ុន ភិរត	ស	ស៊ីវិល	ស៊ីវិល		
6	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
7	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
8	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
9	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
10	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
11	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
12	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
13	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
14	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
15	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
16	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
17	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		
18	ស៊ុន ភិរត	♂	ស៊ីវិល	ស៊ីវិល		

**Photo Documentation**

*Photo 1. Arrival and registration of stakeholder from Prek Ho village.*



*Photo 2. Opening Remarks by Mr. Suon Samrith, the MOI representative.*



*Photo 3. Questions asked by DoE representative*



*Photo 4. A villager raised concern about road condition of access road and health issue from the current dump site.*



*Photo 5. Question asked by Mr. Lay Samreth, Deputy of Takhmau Municipality*



*Photo 6. A villager raised the concern of losing his job if the current dumpsite is removed.*



Photo 7. A local expressed her support to the plan for improving the current dumpsite.



Photo 8. Children brought by mothers to the public consultation meeting.



**Registration and Attendance List**

**THE ATTENDANCE LIST OF THE MEETING**  
**Public Consultation Program of the Project in Kandal Province**  
**Project: Cambodia Solid Waste and Plastic Management Improvement Plan (CSWPMIP)**

Stakeholder : Authorities  
 Date : 09-12-2021  
 Location : Preah Puth Andeth Pagoda  
 Total Participants : (Male=..... Female=.....)

ល.រ No	ឈ្មោះ Name	ភេទ Gender	តំណែង Position	អង្គការ Organization	ទូរស័ព្ទ Contact Number	ហត្ថលេខា Signature
1	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
2	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
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5	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
6	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
7	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
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14	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
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16	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		

**THE ATTENDANCE LIST OF THE MEETING**  
**Public Consultation Program of the Project in Kandal Province**  
**Project: Cambodia Solid Waste and Plastic Management Improvement Plan (CSWPMIP)**

Stakeholder : Waste Picker  
 Date : 09-12-2021  
 Location : Preah Puth Andeth Pagoda  
 Total Participants : (Male=..... Female=.....)

ល.រ N1o	ឈ្មោះ Name	ភេទ Gender	តំណែង Position	អង្គការ Organization	ទូរស័ព្ទ Contact Number	ហត្ថលេខា Signature
1	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
2	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
3	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
4	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
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7	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
8	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
9	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
10	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
11	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
12	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
13	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
14	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
15	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
16	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		

ល.រ No	ឈ្មោះ Name	ភេទ Gender	តំណែង Position	អង្គការ Organization	ទូរស័ព្ទ Contact Number	ហត្ថលេខា Signature
1	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
2	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
3	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
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11	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
12	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
13	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
14	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
15	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
16	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		

**Public Consultation Program of the Project in Kandal Province**  
**Project: Cambodia Solid Waste and Plastic Management Improvement Plan (CSWPMIP)**

Stakeholder : Communities  
 Date : 09-12-2021  
 Location : Preah Puth Andeth Pagoda  
 Total Participants : (Male=..... Female=.....)

ល.រ N1o	ឈ្មោះ Name	ភេទ Gender	តំណែង Position	អង្គការ Organization	ទូរស័ព្ទ Contact Number	ហត្ថលេខា Signature
1	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
2	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
3	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
4	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
5	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
6	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
7	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
8	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
9	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
10	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
11	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
12	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
13	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
14	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
15	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		
16	ឈ្មោះ	ភេទ	តំណែង	អង្គការ		

THE ATTENDANCE LIST OF THE MEETING

**Public Consultation Program of the Project in Kandal Province**  
**Project: Cambodia Solid Waste and Plastic Management Improvement Plan**  
**(CSWPMIP)**

Stakeholder : Children  
 Date : 09-12-2021  
 Location : Preal, Puth Andeth, Preyada  
 Total Participants : (Male=.....Female=.....)

ល.រ.	ឈ្មោះ	ភេទ	តំណាង	អង្គការ	ទូរស័ព្ទ	ហត្ថលេខា
N1o	Name	Gender	Position	Organization	Contact Number	Signature
1	លី វិណ័យ	ស	សមាជិក	វិភាគសង្គម		
2	ហ៊ុន វណ្ណ	ស	—	វិភាគសង្គម		
3	សុខ វណ្ណ	ស	—	វិភាគសង្គម		
4	សុខ វណ្ណ	ស	—	—		
5	សុខ វណ្ណ	ស	—	—		
6	វិណ័យ	ស	—	—		
7	សុខ វណ្ណ	ស	—	វិភាគសង្គម		
8	សុខ វណ្ណ	ស	—	—		
9	សុខ វណ្ណ	ស	—	—		
10	សុខ វណ្ណ	ស	—	វិភាគសង្គម		
11	សុខ វណ្ណ	ស	—	—		
12	សុខ វណ្ណ	ស	—	—		
13	សុខ វណ្ណ	ស	—	—		
14	សុខ វណ្ណ	ស	—	វិភាគសង្គម		

ល.រ.	ឈ្មោះ	ភេទ	តំណាង	អង្គការ	ទូរស័ព្ទ	ហត្ថលេខា
No	Name	Gender	Position	Organization	Contact Number	Signature
1	សុខ វណ្ណ	ស	សមាជិក	វិភាគសង្គម		
2	សុខ វណ្ណ	ស	—	—		
3	សុខ វណ្ណ	ស	—	—		
4	សុខ វណ្ណ	ស	—	វិភាគសង្គម		
5	សុខ វណ្ណ	ស	—	—		
6	សុខ វណ្ណ	ស	—	វិភាគសង្គម		
7	សុខ វណ្ណ	ស	—	—		
8	សុខ វណ្ណ	ស	—	—		
9	សុខ វណ្ណ	ស	—	—		
10	សុខ វណ្ណ	ស	—	—		
11	សុខ វណ្ណ	ស	—	—		
12	សុខ វណ្ណ	ស	—	—		
13	សុខ វណ្ណ	ស	—	—		
14	សុខ វណ្ណ	ស	—	—		
15	សុខ វណ្ណ	ស	—	—		
16	សុខ វណ្ណ	ស	—	—		
17	សុខ វណ្ណ	ស	—	—		
18	សុខ វណ្ណ	ស	—	—		
19	សុខ វណ្ណ	ស	—	—		
20	សុខ វណ្ណ	ស	—	—		

**Sample Public Consultation Announcements**

### ANNOUNCEMENT

**The Proposed Cambodia Solid Waste and Plastic Management Improvement Project Team will conduct the First Public Consultation and Stakeholder Engagement Workshop**

**Morning Session**  
**Venue :** Trapeang Thom Commune Hall  
**Date :** Tuesday, November 30, 2021  
**Time :** 8:30 am to 11:30 am  
**Who :** Trapeang Thom Commune Chief, 6 Village Chiefs (Anlong Pir, Phnom Dei, Soung, Rokar Kamboth, Banteay Russey, Lovea), Waster Pickers and neighboring communities

**Afternoon Session**  
**Venue :** Trapeang Thom Commune Hall  
**Date :** Tuesday, November 30, 2021  
**Time :** 1:30 pm to 5:00 pm  
**Who :** Trapeang Thom Commune Chief, 6 Village Chiefs (Anlong Pir, Phnom Dei, Soung, Rokar Kamboth, Banteay Russey, Lovea), Waster Pickers and neighboring communities, Vulnerable Groups and Children

**Implementing Agencies**

- Ministry of Interior (Moi)
- Ministry of Environment (MoE)
- Ministry of Public Works and Transport (MPWT)
- Siem Reap Provincial Hall
- Siem Reap Municipal Hall

**Contact Persons**

- Mr. Nov Nith (Moi), Tel: 012 960 098
- Mr. Yim Mongtoeun (KCC), Tel: 012 463 788
- Mr. Ung Sophan (Siem Reap's Provincial Officer), Tel: 011 876 393



### សេចក្តីជូនដំណឹង

ក្រុមការណ៍គម្រោងកែលម្អការគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិក និងរៀបចំលើកសិក្ខាសាលា ពិគ្រោះយោបល់សាធារណៈ និងការចូលរួមរបស់ភាគីពាក់ព័ន្ធលើកទីមួយ

**កិច្ចប្រជុំពេលព្រឹក**

**ទីកន្លែង :** សាលារៀនព្រៃព័ន្ធនៃ  
**កាលបរិច្ឆេទ :** ថ្ងៃអង្គារ ទី៣០ ខែវិច្ឆិកា ឆ្នាំ២០២១  
**ពេលវេលា :** ម៉ោង ៨:៣០ព្រឹក ដល់ ១១:៣០ ព្រឹក  
**អ្នកចូលរួម :** មេឃុំព្រៃព័ន្ធនៃ មេភូមិទាំង៦ (ភូមិអន្លូងទឹក ភូមិភ្នំជី ភូមិស្នួល ភូមិរកាភ័បុត ភូមិបន្ទាយឃ្លូង និងភូមិល្វា) អ្នកជំនាញ មេឃុំព័ន្ធនៃ សហគមន៍នៅជិតខាង ក្រុម ងាយរងគ្រោះនិងកុមារ។

**កិច្ចប្រជុំពេលរសៀល**

**ទីកន្លែង :** សាលារៀនព្រៃព័ន្ធនៃ  
**កាលបរិច្ឆេទ :** ថ្ងៃអង្គារ ទី៣០ ខែវិច្ឆិកា ឆ្នាំ២០២១  
**ពេលវេលា :** ម៉ោង ១:៣០ រសៀល ដល់ ៥:០០ ល្ងាច  
**អ្នកចូលរួម :** មេឃុំព្រៃព័ន្ធនៃ មេភូមិទាំង៦ (ភូមិអន្លូងទឹក ភូមិភ្នំជី ភូមិស្នួល ភូមិរកាភ័បុត ភូមិបន្ទាយឃ្លូង និងភូមិល្វា) អ្នកជំនាញ មេឃុំព័ន្ធនៃ សហគមន៍នៅជិតខាង ក្រុមងាយរងគ្រោះ និងកុមារ។

**ភ្នាក់ងារអនុវត្ត**

- ក្រសួងមហាផ្ទៃ (Moi)
- ក្រសួងបរិស្ថាន (MoE)
- ក្រសួងសាធារណការ និងដឹកជញ្ជូន (MPWT)
- សាលាខេត្តសៀមរាប
- សាលាក្រុងសៀមរាប

**លេខទំនាក់ទំនង**

- លោក ខួរ ឌីត (ក្រសួងមហាផ្ទៃ) ទូរស័ព្ទ: ០១២ ៩៦០ ០៩៨
- លោក យឹម ម៉ុងតូឡុន (ក្រុមហ៊ុន KCC) ទូរស័ព្ទ: ០១២ ៤៦៣ ៧៨៨
- លោក ឡុង សោភ័ណ (មន្ត្រីសាលាខេត្តសៀមរាប) ទូរស័ព្ទ: ០១១ ៨៧៦ ៣៩៣



### ANNOUNCEMENT

**The Proposed Cambodia Solid Waste and Plastic Management Improvement Project Team will conduct the Public Consultation and Stakeholder Engagement Meetings in Kandal**

**Venue :** Preah Puth Andet Pagoda (Called Prek Ho Pagoda)  
**Date :** Thursday, December 9, 2021  
**Time :** 1:30 pm to 5:30 pm  
**Who :**

- Chief of Sangkat Prek Ho
- Village Chief of Prek Ho Keut I
- Representatives from Ta Khmao Municipality
- Representatives from villagers and community nearby the existing dumpsite
- Waste Pickers
- Vulnerable Group and Children at the existing dumpsite

**Implementing Agencies**

- Ministry of Interior (Moi)
- Ministry of Environment (MoE)
- Ministry of Public Works and Transport (MPWT)
- Kandal Provincial Hall
- Ta Khmao Municipal Hall

**Contact Persons**

- Mr. Nov Nith (Moi), Tel: 012 960 098
- Mr. Yim Mongtoeun (KCC), Tel: 012 463 788
- Mr. Morn Chamroen (Ta Khmao Municipal's Officer), Tel: 015 999 849



### សេចក្តីជូនដំណឹង

ក្រុមការណ៍គម្រោងលើកកម្ពស់ការគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិកនៅកម្ពុជា និងរៀបចំកិច្ចប្រជុំពិគ្រោះយោបល់សាធារណៈ និងការចូលរួមរបស់ភាគីពាក់ព័ន្ធនៅខេត្តកណ្តាល។

**ទីកន្លែង :** វត្តព្រះពុទ្ធអណ្ណោត ហៅវត្តព្រៃកហូរ  
**កាលបរិច្ឆេទ :** ថ្ងៃព្រហស្បតិ៍ ទី៩ ខែធ្នូ ឆ្នាំ២០២១  
**ពេលវេលា :** ១:៣០ រសៀល ដល់ ៥:៣០ ល្ងាច  
**អ្នកចូលរួម :**

- ចៅសង្កាត់ព្រៃកហូរ
- មេភូមិព្រៃកហូរភីត១
- តំណាងសាលាក្រុងតាខ្មៅ
- តំណាងអ្នកភូមិ និងសហគមន៍ជុំវិញទីលានទុកដាក់សំណល់បច្ចុប្បន្ន
- អ្នកជំនាញ
- ក្រុមងាយរងគ្រោះ និងកុមារមកពីទីលានទុកដាក់សំណល់បច្ចុប្បន្ន

**ភ្នាក់ងារអនុវត្ត**

- ក្រសួងមហាផ្ទៃ (Moi)
- ក្រសួងបរិស្ថាន (MoE)
- ក្រសួងសាធារណការ និងដឹកជញ្ជូន (MPWT)
- សាលាខេត្តកណ្តាល
- សាលាក្រុងតាខ្មៅ

**លេខទំនាក់ទំនង**

- លោក ខួរ ឌីត (ក្រសួងមហាផ្ទៃ) ទូរស័ព្ទលេខ: ០១២ ៩៦០ ០៩៨
- លោក យឹម ម៉ុងតូឡុន (ក្រុមហ៊ុន KCC) ទូរស័ព្ទលេខ: ០១២ ៤៦៣ ៧៨៨
- លោក ម៉ន ចំរើន (មន្ត្រីរដ្ឋបាលក្រុងតាខ្មៅ) ទូរស័ព្ទលេខ: ០១៥ ៩៩៩ ៨៤៩



## ANNOUNCEMENT

**The Proposed Cambodia Solid Waste and Plastic Management Improvement Project Team will conduct the Public Consultation and Stakeholder Engagement Meetings In Kampong Speu**

- Venue :** Sovann Kiry Pagoda (Called Phnom Kampout)  
**Date :** Tuesday, December 7, 2021  
**Time :** 8:00 am to 11:30 am  
**Who :**
- Representative from Chbarmon Municipality
  - Chief of Sangkat Chbarmon
  - Chief of Sampov Village
  - Representatives of villagers and community nearby the existing dumpsite
  - Waste Pickers
  - Vulnerable Group and Children at the existing dumpsite

- Implementing Agencies**
- Ministry of Interior (MoI)
  - Ministry of Environment (MoE)
  - Ministry of Public Works and Transport (MPWT)
  - Kampong Speu Provincial Hall
  - Chbarmon Municipal Hall

- Contact Persons**
- Mr. Nov Nith (MoI), Tel: 012 960 098
  - Mr. Yim Mongtoeun (KCC), Tel: 012 463 788
  - Mr. Vann Nary (Kampong Speu's Municipal Officer), Tel: 016833444



## សេចក្តីជូនដំណឹង

ក្រុមការងារគម្រោងលើកកម្ពស់ការគ្រប់គ្រងសំណល់រឹង និងប្លាស្ទិកនៅកម្ពុជា នឹងរៀបចំកិច្ចប្រជុំពិគ្រោះយោបល់សាធារណៈ និងការចូលរួមពីភាគីពាក់ព័ន្ធ នៅខេត្តកំពង់ស្ពឺ។

- ទីកន្លែង :** វត្តសុវណ្ណគិរី ហោត្តិកំពោត  
**កាលបរិច្ឆេទ :** ថ្ងៃអង្គារ ទី៧ ខែធ្នូ ឆ្នាំ២០២១  
**ពេលវេលា :** ៨:០០ ព្រឹក ដល់ ១១:៣០ ព្រឹក  
**អ្នកចូលរួម :**
- តំណាងពីសាលាក្រុងឡាមន
  - ចៅសង្កាត់ឡាមន
  - ប្រធានភូមិសំពៅ
  - តំណាងអ្នកភូមិ និងសហគមន៍ដែលនៅជិតទីលានទុកដាក់សំណល់បច្ចុប្បន្ន
  - អ្នកជីសង្កេតចាយ
  - ក្រុមងាយរងគ្រោះ និងកុមារមកពីទីលានទុកដាក់សំណល់បច្ចុប្បន្ន

- ភ្នាក់ងារអនុវត្ត**
- ក្រសួងមហាផ្ទៃ (MoI)
  - ក្រសួងបរិស្ថាន (MoE)
  - ក្រសួងសាធារណការ និងដឹកជញ្ជូន (MPWT)
  - សាលាខេត្តកំពង់ស្ពឺ
  - សាលាក្រុងឡាមន

- លេខទំនាក់ទំនង**
- លោក នូវ និត (ក្រសួងមហាផ្ទៃ) ទូរស័ព្ទ: ០១២ ៩៦០ ០៩៨
  - លោក យឹម ម៉ុងតូឡុន (ក្រុមហ៊ុន KCC) ទូរស័ព្ទ: ០១២ ៤៦៣ ៧៨៨
  - លោក វ៉ាន់ នារី (មន្ត្រីសាលាក្រុងកំពង់ស្ពឺ) ទូរស័ព្ទ: ០១៦ ៨៣៣ ៤៤៤



## Program and Agenda of the Public Consultations

### Proposed Cambodia Solid Waste and Plastic Management Improvement Project

#### Siem Reap Public Consultation and Stakeholder Engagement

##### Internal Meeting

Venue: Siem Reap Provincial Hall / Date: 29 November 2021 / Time: 8:30 am to 11:30 am

##### PROGRAM OF ACTIVITY

Time	Topic	In-Charge/Speaker
8:00 am- 8:30 am	<ul style="list-style-type: none"> <li>Arrival and Registration of Participants</li> </ul>	KCC Team
8:30 am- 8:40 am	<ul style="list-style-type: none"> <li>Opening Ceremony and Singing of the Cambodia Anthem</li> </ul>	
8:40 am - 9:00 am	<ul style="list-style-type: none"> <li>Welcome Remarks</li> </ul>	Municipal Governor and Provincial Governor of Siem Reap
9:00 am - 9:10 am	<ul style="list-style-type: none"> <li>Overview of the Public Consultation and Stakeholders Engagement Workshop</li> </ul>	Mol
9:10 am - 9:25 am	<ul style="list-style-type: none"> <li>Overview of Project Objective, Components, Activities, Implementation Arrangements and Applicable Environmental and Social Standards</li> </ul>	Nigel Landon, ESC
9:25 am – 9:40 am	<ul style="list-style-type: none"> <li>Break</li> </ul>	
9:40 am – 09:55 am	<ul style="list-style-type: none"> <li>Process for Landfill Site Suitability Analysis and Selection And Preliminary Conclusion</li> </ul>	Nigel Landon, ESC
09:55 am – 10:15 am	<ul style="list-style-type: none"> <li>Possible Landfill and Waste Treatment Facilities and Pollution Clean-Up and Management</li> </ul>	Nigel Landon, ESC
10:15 am – 10:30am	<ul style="list-style-type: none"> <li>Environmental and Social Studies and Stakeholder Engagement and Consultation Plan</li> </ul>	Dr Yim Mongtoeun, KCC
10:30 am – 11:25 am	<ul style="list-style-type: none"> <li>Open Forum and questions and answers</li> </ul>	Participants
11:25 am – 11:30 am	<ul style="list-style-type: none"> <li>Closing</li> </ul>	Mol

Master of Ceremony: **Yim Mongtoeun, KCC**  
 Moderator/Facilitator: **Phum Tol**

## **The second round of consultation held in Siem Reap from March 2-4 2022**

**March 02 2022: Virtual consultation with nationally and locally, with ministries, provincial authority, municipal/district representatives, and relevant line departments, from 2:00 to 5:00pm.**

The meeting started with an opening remark by the representative of Siem Reap provincial hall (director of Administration, Mr. Sok Thol) who has highlighted the significance and needs for the consultation of the ESF instruments with relevant stakeholders as well as waste pickers at the current dumpsite and the proposed land for landfill. MoI, represented by Mr. Nov Nith, emphasized the project preparation through supports and collaborations provided by MoI, MEF, MoE and MPWT and relevant departments. The first round of consultation has been held in November 2021 with active participations from all stakeholders including waste pickers and communities. The second round of consultation focused on discussing the results of the P-ESIA, ESMF and other ESF documents that were disclosed on national ministries 'website (MoI, and MPWT). Apart from this, RPF has been drafted and reviewed by the GDR of MEF, expectedly to be finalized and endorsed shortly. This document will then be disclosed for the appraisal of the project to take place.

### **Discussions**

Q: Ung Sophean, Director of office of Multi-Sectoral Investment. I am concerned about the proposed rehab. of the current dumpsite which we will be having public consultation tomorrow with PAPs. Yet, this matter has not been decided by the authority. The land will be procured through discussion with landholders. MEF will discuss market price. But we don't know if landholders would accept the offer? My question is whether Bank has discussed with MoI about this matter? Secondly, while amended contracts with the waste companies would be needed for inclusion of performance requirements, we have contracted the current waste collection company on long term basis. How do we resolve this matter?

A: These issues indeed will take some time to resolve and the Project will provide support to the national and local government to support these discussions. Negotiation with landholders is government's intervention and since landfill sites are difficult to find, this is not always possible on public land. But once project is approved, a private firm (advisors) will be hired to support the government for this type of thing. We discussed with MEF and acknowledged the challenges. Detailed site investigations will be carried out in details and this investigation of pollutions should be taken into account when determining land values and to be discussed with MEF.

A: On the second question, my preliminary answer would be that municipality of SR shall continue waste management according to sub-decree 113 and make effort to reform/adjust contract arrangement with the waste collection company. Further discussion shall be made with MoI. The same, managing revenue from waste collection fee. Ownership must built within the municipality including qualified staff to assess service users, collection planning, fixing collection fees, etc. With that capacity, municipality would be able to discuss with and convince waste collection companies for a better service.

Representative of Siem Reap Municipality. My concern is about communities in Anlong II village on potential impacts and the new land for future sanitary landfill. Secondly, I shared the same concerns with Sophean.

A: These issues are high on the agenda and will not be resolved in a few days. It will need further discussion with national ministries and relevant stakeholders. For this purpose, the full detail design and site specific Environmental and Social Impact Assessments will be undertaken and transaction support to municipalities.

Director of Administration: on RPF. How do we deal with the communities/villagers living around the current dumpsite of Anlong II.

A: No resettlement would be required for the neighboring communities only for those residing at the open dumpsite itself. Only one man resides temporarily on site, which will be further consulted. Neighboring communities shall continue to live where they are. Environmental pollutions will be reduced through the rehabilitation of the dumpsite.

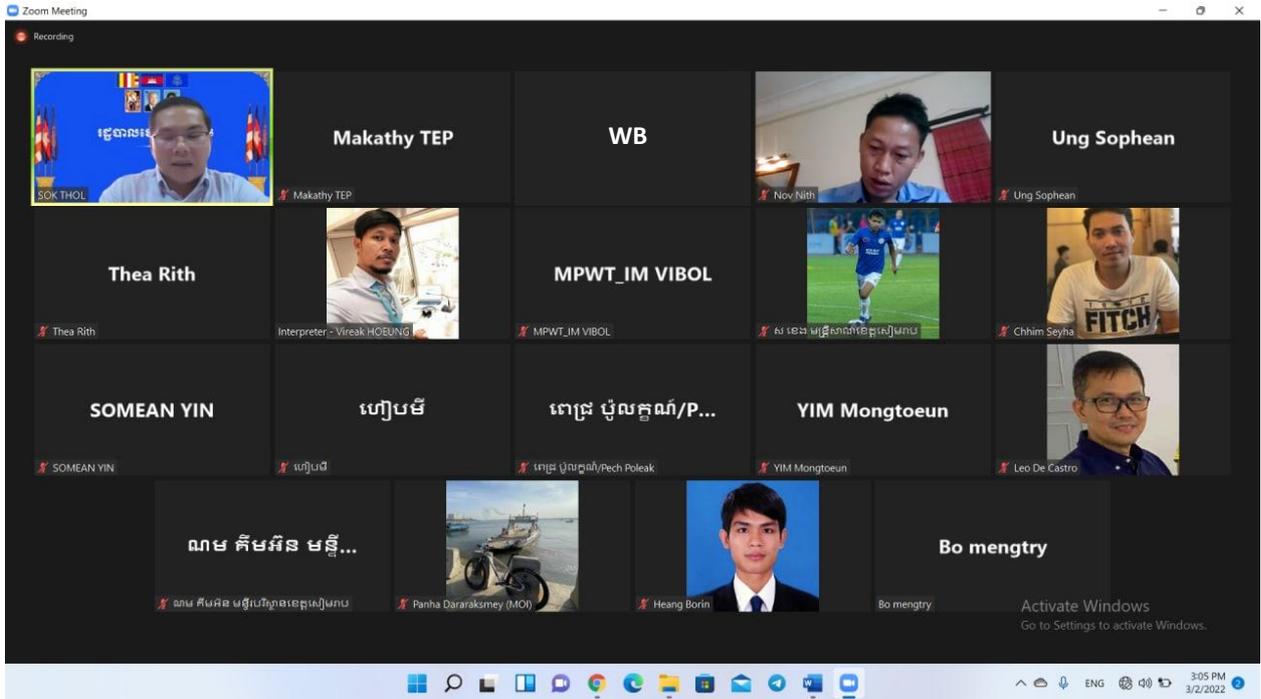
Provincial department of environment: Thanks to all national ministries for the supports to this stage. I strongly support the process to improve environmental conditions at the current dumpsite.

**Wrap up:**

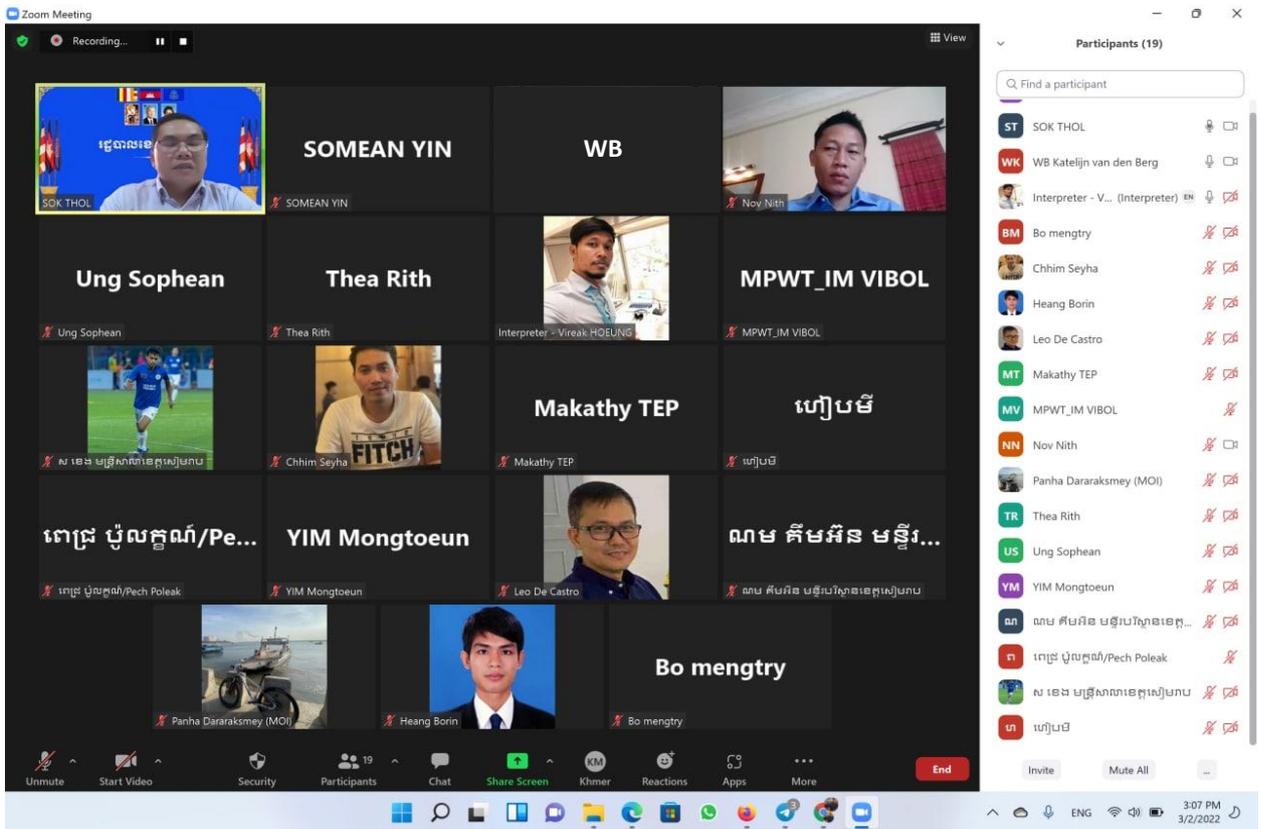
Mr. Nov Nith, MoI: It is not the end of our consultations. I am looking forward to discussion with national ministries, especially to secure funding by the end of May and to have the negotiations to be effective mid this year. If you have any questions, please reach out to the ministries

I thank technical team from the consultants, representatives from national ministries, Siem Reap administration as well as Krong/Srok (municipality/District), and others for taking active role in the consultation. We have technical team from the Bank. We only wait for procuring the land and decision on the proposed land. We shall also be ready in terms of institutional arrangement at municipal level. MOI will continue to work with national ministries to support the project, especially on contract arrangement with waste collection company.

Photos log of the national and provincial level consultation



Top: Opening remarks made by Mr. Sok Thol, Siem Reap province representative and Mr. Nov Nith, the representative from MoI



List of participants

No.	Name	Sex	Position	Organization	Email	Contact Number
1	Mr. Sok Tol	M	Director of Administration	Siem Reap provincial hall		
2	Mr. Ung Sophean	M	Director of Inter-sectoral Office	Siem Reap provincial hall		
3	Mr. Sun Kong	M	Director	DoE		
4	Mr. Norm Kimorn	M	Chief of Environment Protection Office	DoE		
5	Mr. Heap Mey	M	Deputy Director	DPWMT		
6	Mr. Bo Mengtry	M	Deputy Governor	Siem Reap Municipality		
7	Mr. Nuon Puthearith	M	Deputy Governor	Prasat Bakong District		
8	Mr. Pech Poleak	M	Vice Chief of Economic and Social Affairs Office	Siem Reap provincial hall		
9	Mr. Sar Kheng	M	Officer of Economy and Social Affairs office	Siem Reap provincial hall		
10	Mr. Nov Nith	M	Deputy Director of DFR	MoI		
11	Mr. Phanha Dararaksmeay	M	Chief of office of DFR	MOI		
12	Mr. IM Vibol	M	Technical Officer	MPWT		
13	Mr. SALY Chetra	M	Procurement Officer	MPWT		
14	Ms. Katelijn Van den Berg	F	Task Team Leader	World Bank		
15	Mr. Tep Makaty	M	Environment Specialist	World Bank		
16	Ms. Ravan Chieap	F	Project Coordinator	World Bank		
17	Mr. YIN Somean	M	SWM Engineer	World Bank		
18	Mr. HOEUNG Vireak	M	Interpreter	-		
19	Mr. Chhim Seyha	M	Environment Specialist	PPIC		
20	Dr. YIM Mongtoeun	M	S & E Specialist	KCC		
21	Mr. Heang Borin	M	Assistant	KCC		
22	Ms. Phea Marina	F	Assistant	KCC		
23	Mr. Eng Diamant	M	Assistant	KCC		
24	Mr. Leo De Castro	M	ESF Consultant	CEST		

**March03 2022, Public consultation with communities in Trapeang Thom, Prasath Bakong district, Siem Reap, from 8:00 to 11:30am**

**Mr. So Platong, municipal Governor of Siem Reap:** He applauded participations from all levels of stakeholders especially local communities during the 1<sup>st</sup> consultation as well as today meeting. Participations from everyone is key to ensure a good design of the project, aiming at reducing risks and impacts as much as possible.

**Mr. Nov Nith, MoI:** Why are we here this morning? We aim at designing a sustainable project for us all! Is it good to separate all types of waste? Is it dangerous to have all kinds of pointed objects disposed off at dumpsite? We wanted to make sure that you as beneficiaries benefit the most out of it. We also wanted to make sure that kids are not involved in waste picking as they have to go to school. Please have your voices heard! All authorities are here, tell them what you want.

**Chhim Seiha, SEC Consulting:** Seiha presented key findings of the P-ESIA, which also included ESF instruments relevant for the project, LMP and RPF. He applied the same slides as Katelijjn. He summarized key issues, findings and specific measures for managing risk at community level. Noted that around 40% of participants are new commers comparing to the 1<sup>st</sup> round.

**Discussions and comments:**

Mrs. Saram, Trapeang Thom: She noticed an explanation on environmental improvement from the rehabilitation of the dumpsite.

Mrs. Leap: I don't understand what is waste separation? At sources or at dumpsite? A/Seiha: waste separation facilities will be designed at the landfill. So, everyone can still benefit from waste picking.

Ms Pheaktra, Prasath Bakong. I am a student, not waste picker. Soil cover will create waste mountain. How do we manage waste mountain? How do we reduce flies? A/Seiha: we deign cells for waste dumping, say 5 cells. Waste will be covered by layers and compacted. Composting will help reducing waste to landfill, prolonging landfill age. This engineering solution will reduce flies and odor, but not 100%. Alndfill is designed for 20 years. If we manage a new landfill, the age of the present landfill will be lasting longer. It is called sanitary landfill.

Pheaktra (the same person): an environmental improvement through this project, OHS of workers during construction and waste pickers at operation stage, reduce flies,... Negative impacts are dust and noise during construction.

Mrs. Rorn: Too many waste pickers on site. How do we access to waste picking during operation? A/Kateljijn: You can still benefit from the activities. Waste sorted at facilities, so all waste pickers are allowed to pick recycling waste. 50% will be composting.

Mrs. Srey Savouen, village chief of Svay Chek: odors extended to my village now. I am glad that the engineering solutions would reduce odor to the surrounding areas.

Mr. Lop Phoeun, Village chief Phnom Dei village: I understand the presentation such as reducing leachate to water sources and drilled water. My villagers must be happy. I don't have then to resolve farmer conflicts of leachate leakage to their rice paddies.

Mrs. Leap: requested for PPE every 15 days.

Mrs. Pron: If we produce compost, how to we market it? A/Kateljijn: It depends on quality of compost. We need to make sure a cleaner stream of waste separation such as organic ones from harmful wastes. We need to do training for composting and testing of the products.

Mr. Kosal, Lvea village, Trapeang Thom: I am happy with the engineering solutions to improve current environment.

Mr. Veng, Meanchey commune (next door): I am helping village as an elderly people. I am glad with the mitigation measures.

Mrs. Kimleap, Kalyan Mith, local NGO (French International): I am interested in safety plan for kids. There are plenty of waste pickers from everywhere. So, better to protect your kids from harassment. NGO provides PPE and face masks, foods, medicines, and provides education awareness to look after kids. It also helps supporting awareness on making small scale home based-businesses.

Mss. Sovorn, secondary school student (8 grade): I am happy with the design of the project because it helps separate waste, protect the environment, encourage kids to go to school not landfill, the whole village environmental conditions will be improved.

Closing by Nov Nith: We are pleased to receive your comments and suggestions. I believe the project will be approved. I thank everyone for your time.

See below: Photo log and attendant list.



Photo 1. Early morning registration, supported by staff from KCC consulting firm.



Photo 2. Welcome Remarks provided by District Governor of Bakong, Mr. So Batong.



Photo 3. Opening Remarks provided by Mr. Nov Nith, Ministry of Interior Representative.



Photo 4. Mr. Nov Nith delivered very simple and straight forward explanations to the crowd about the project.



Photo 5. Technical explanation of P-ESIA findings and emasures.



Photo 6. Public disclosure of ESF instruments and contact numbers for receiving complaints.



Photo 7. Refreshing before discusion.



Photo 8. Women (and children) paid attention to understand risks and impacts from the project activities.



Photo 9. A young waste picker requested for PPE every 15 days.



Photo 10. An elderly people who live next to the site expressed positive view on the project.



Photo 11. Representaive from local NGO rasied suggestions.

Photo 12. One among male waste pciker said he's happy with the project.

Attendant list (morning session)

**THE ATTENDANCE LIST OF THE MEETING**

**Public Consultation Program of the Project in Siem Reap Province**  
**Project: Cambodia Solid Waste and Plastic Management Improvement Plan (CSWPMIP)**

Stakeholder : Authorities  
 Date : 02-03-2022  
 Location : Virtual Meeting 3.00 - 4.30 pm  
 Total Participants : 25 (Male= Female= )

No	ឈ្មោះ Name	ភេទ Gender	តំណែង Position	អង្គការ Organization	ទូរស័ព្ទ Contact Number	ហត្ថលេខា Signature
1	Mrs Katerlijn vander	F	Env specialist	WB		
2	Sok Thea	M	env specialist	SA Provincial		
3	Nov Nith	M	env specialist	MOI		
4	Ung Sophan	M	Interpiter			
5	Vireak Hasung	M	Interpiter			
6	Im Vibol	M		HPWT		
7	Tej Makethy	M	Env Engineer	WB		
8	Yin Sornan	M	SMT Engineer	WB		
9	Chhion Sogha	M		PPIC		
10	Pich Polack	M	env specialist	env. - ministry		
11	Sar Kheng	M	Adv. Officer	Recruitment staff		
12	Yim Hardeen	M	Consultant	KCC		
13	Threa Rith					
14	Lee De Castro	F		CEST		
15	Bartha Dararakong			MOI		
16	Heang Borin	M	Assistant	KCC		
17	Threa Harne	F	Assistant	KCC		
18	Eng Diamond	M	Assistant	KCC		
19	Chhep Ravan					
20	Sun Kong	M	env specialist	DOE		
21	Saly Chetra	M	Officer	HPWT		
22	Bo Hengtry	M	env specialist	env. ministry		
23	Norm Kimorn	M	env specialist	DOE		

No	ឈ្មោះ Name	ភេទ Gender	តំណែង Position	អង្គការ Organization	ទូរស័ព្ទ Contact Number	ហត្ថលេខា Signature
24	Heap My	M	env specialist	HPWT		
25	Deng Sophorn	M	env specialist	env. ministry		
26	Hun Pranith	F	env specialist	HPWT	02 987541	

**THE ATTENDANCE LIST OF THE MEETING**

**Public Consultation Program of the Project in Siem Reap Province**  
**Project: Cambodia Solid Waste and Plastic Management Improvement Plan (CSWPMIP)**

Stakeholder : Waste Picker  
 Date : 03-03-2022 9:00 AM - 11:30 AM  
 Location : Trapeang Thom Commune  
 Total Participants : (Male= Female= )

No	ឈ្មោះ Name	ភេទ Gender	តំណែង Position	អង្គការ Organization	ទូរស័ព្ទ Contact Number	ហត្ថលេខា Signature
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**THE ATTENDANCE LIST OF THE MEETING**

**Public Consultation Program of the Project in Siem Reap Province**  
**Project: Cambodia Solid Waste and Plastic Management Improvement Plan (CSWPMIP)**

Stakeholder : Authorities WB, KCC  
 Date : 03-03-2022 9.00 AM - 11.30 AM  
 Location : Trapeang Thom Commune  
 Total Participants : (Male= Female= )

No	ឈ្មោះ Name	ភេទ Gender	តំណែង Position	អង្គការ Organization	ទូរស័ព្ទ Contact Number	ហត្ថលេខា Signature
1	Katelin van der Gaag	F	World Bank	env specialist		
2	YIN Sornan	M	World Bank	SWM expert		
3	YIM Mangthum	M	KCC	KCC		
4	NOV NITH	M	Deputy director	MOI		
5	Bantha Dararakong	M	Chief officer	MOI		
6	Keev Kachthum	M	officer	WB		
7	Ban Seangphet	M	Deputy Director	HPWT		
8	Phoa Marina	F	Assistant	KCC		
9	Chhion Sogha	M	Env. Specialist	ESC-PPIC		
10	HOEUNG THOL	M	Interpiter	Proj. team		
11	HEANG BORIN	M	Assistant	KCC		
12	ENG DIAMANT	M	Assistant	KCC		
13	PHUM THOL	M	Consultant	WB		
14						

**THE ATTENDANCE LIST OF THE MEETING**

**Public Consultation Program of the Project in Siem Reap Province**  
**Project: Cambodia Solid Waste and Plastic Management Improvement Plan (CSWPMIP)**

Stakeholder : Authorities  
 Date : 03-03-2022 9:00 AM - 11:30 AM  
 Location : Trapeang Thom Commune  
 Total Participants : (Male= Female= )

No	ឈ្មោះ Name	ភេទ Gender	តំណែង Position	អង្គការ Organization	ទូរស័ព្ទ Contact Number	ហត្ថលេខា Signature
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**March 03 2022, Lvea and Svay Chek villages, Siem Reap from 2:00 to 5:00pm**

Because of similarity of the introduction part, it recorded only the discussion and feedback from the floor.

.....  
.....end of introduction.

**Discussions:**

Deputy chief village, lvear: happy with the project. Construction company shall try to manage dust from civil works.

Mrs. Roeun, Lvear: I am happy. I suggest all driver to slow down avoiding accidents to kids.

Mrs. Sokhai from Svay Chey: glad with the plan for env. improvement. I suggest that the project create more jobs for local communities.

Mrs. pov, svay chey village: I am happy to have the project, reducing odor; improving environment and sanitation; improving awareness on sanitation among children. I wish you all healthy.

Mr. pouch, svay chey village: I suggest that the project pay attention on improving environmental condition, avoiding leachate leaking to rice paddies.

Mr. Chhin , Anlong II village: I suggest that the project priority local villagers to get the job. When the project will start? A: It depends on how fast we prepare the documents. The total project period will be 6 years.

The current dump trucks dropped waste all along the roads and went so fast. How the project deal with it? A: SWM is all about waste collection and separation, transport and dispose off at sanitary landfill. You raised one among three other aspects of SWM. Can you ensure that you will help with waste separation from HH level? If you cannot manage waste storage and separation, waste collection company will not be able to perform well. It is interrelated.

**Closing:**

Mr. Non Nith, MoI: We now meet you all who live around the site. Your contribution is kept confidential. I thank PPIC, KCC, CEST, ESC, MPWT, Siem Reap administration, PD of environment, district and commune authority for all the supports. We expect to have a sanitary landfill which is good for our environment. I wish you healthy!

**Photo log:**



Photo 1. Mr. Nov Nith, Representative from MoI explained the project and encouraged people to raise their voices.



Photo 2. Meeting was set up in a circle form.



Photo 3. Deputy village chief expressed his happiness and suggestions.



Photo 4. She was asked if she get anything out of the explanations.



Photo 5. A mother expressed strong support to the project design.



Photo 6. Informal exchange with authority and MoI after the session (from left to right: district governor, Mr. Nov Nith/MoI).

Attendant list (afternoon session).

THE ATTENDANCE LIST OF THE MEETING

Public Consultation Program of the Project in Siem Reap Province  
 Project: Cambodia Solid Waste and Plastic Management Improvement Plan  
 (CSWPMIP)

Stakeholder : Authority, WB, KCC  
 Date : 03-03-2022 ..... 1.30pm ..... 5.00pm  
 Location : Trapeang Thom Commune.....  
 Total Participants : ..... (Male= ..... Female= .....)

No	Name	Gender	Position	Organization	Contact Number	Signature
1	Ben Seraypiseth	M	Deputy Director	MPWT		
2	ADP My	M	Deputy Director	DPWT		
3	Nov Nith	M	Deputy Director	MoT		
4	Pha Manum	F	Assistant	KCC		
5	Chhlin Seylin	M	Env. Specialist	ESC-PPIC		
6	PHUM-TKOC	M	Facilitator	W/BCG		
7	HEANG Borin	M	Assistant	KCC		
8	YIN Suman	M	SWHEof	W.B		

Public Consultation Program of the Project in Siem Reap Province  
 Project: Cambodia Solid Waste and Plastic Management Improvement Plan  
 (CSWPMIP)

Stakeholder : Communities / Residents nearby existing dumpsite  
 Date : 03-03-2022 ..... 1.30pm ..... 5.00pm  
 Location : Trapeang Thom Commune.....  
 Total Participants : ..... (Male= ..... Female= .....)

No	Name	Gender	Position	Organization	Contact Number	Signature
1	ស៊ុន ស៊ុន	ប				
2	ឃុំ ក្រាំង	ប				
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6	ឃុំ ក្រាំង	ប				
7	ឃុំ ក្រាំង	ប				