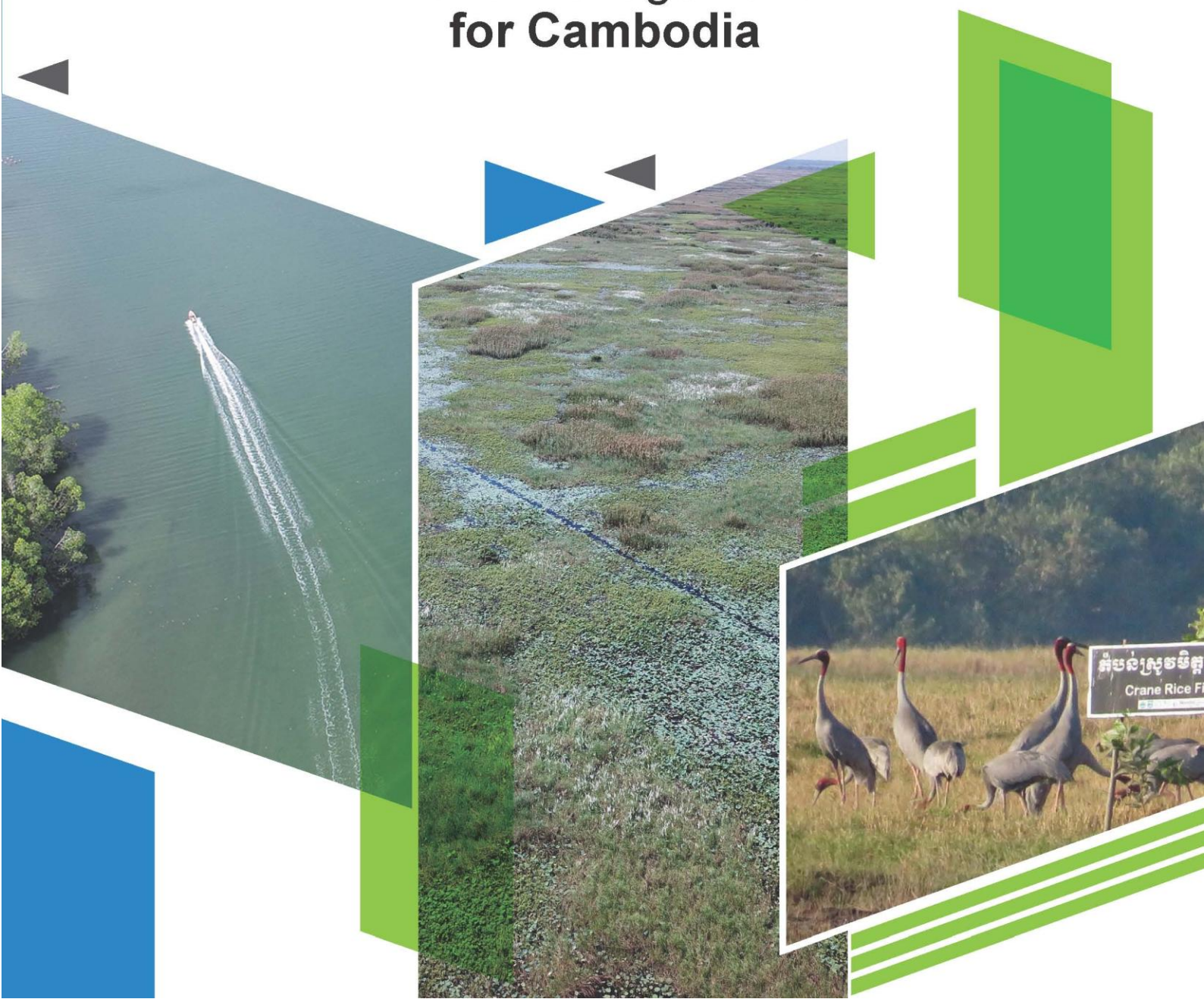




INVESTMENT FRAMEWORK

for Haze-Free Sustainable
Land Management
for Cambodia





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FOREWORD

Over the past decade, Cambodia has strengthened environmental management, fire prevention, and climate governance. Through the combined efforts of the Ministry of Environment, line ministries, sub-national authorities, local communities, and development partners, fire hotspot occurrences have significantly declined. However, seasonal haze remains a challenge across the Greater Mekong Subregion, particularly during prolonged dry periods. Agricultural residue burning, forest and wetland fires, and open waste burning can contribute to domestic and transboundary haze, posing risks to public health, agricultural productivity, ecosystems, and progress toward climate objectives. These challenges underscore the need for sustained national action and strengthened regional cooperation.

Under the visionary leadership of **Samdech Akka Moha Sena Padei Techo HUN SEN, President of the Senate**, and guided by the Pentagonal Strategy Phase I of **Samdech Moha Borvor Thipadei HUN MANET, Prime Minister of the Royal Government of Cambodia**, we place green growth and environmental sustainability at the centre of our national development agenda. Addressing haze is an integral part of this agenda, which helps to protect the health of our people, support the productivity of our farmers, and safeguard our forests, wetlands, and biodiversity.

The Ministry of Environment is therefore pleased to present the Investment Framework for Haze-Free Sustainable Land Management (IF-HFSLM) 2026–2035. The Framework is Cambodia's country-level instrument for operationalising the ASEAN Investment Framework for Haze-Free Sustainable Land Management (AIF-HFSLM) 2023–2030, and for delivering our obligations under the ASEAN Agreement on Transboundary Haze Pollution (AATHP) and Nationally Determined Contributions (NDC) to the Paris Agreement. Its goal is clear: by 2035, Cambodia will significantly reduce land and forest fires, eliminate harmful open burning in priority agricultural and forest landscapes, and strengthen the resilient and inclusive livelihoods.

The Framework treats haze reduction as an investment opportunity rather than a compliance cost. It organises actions around the five objectives of the AIF-HFSLM, identifies 15 project concepts with an indicative value of approximately USD 690 million, and sets out a layered financing architecture that combines public budget, concessional climate finance, blended instruments, commercial lending, as well as carbon and nature finance. Implementation proceeds in three phases, from institutional readiness in 2026, to pilot investment and blended finance through 2027, and then to full integration within national plans and budgets.

The Framework aligns with the Environment and Natural Resources Code, Cambodia's NDC 3.0, the Long-Term Strategy for Carbon Neutrality, the Circular Strategy on Environment 2023–2028, the Cambodia Climate Change Strategic Plan 2024–2033, and the National Protected Area Strategic Management Plan 2017–2031. It applies a landscape-based approach across priority provinces, measures results through a transparent national Monitoring, Reporting and Verification (MRV) system, and integrates gender equality, disability, and social inclusion across every component.

This Framework is the product of a participatory process, developed with support from the UK Mission to ASEAN through the ASEAN-UK Green Transition Fund, with technical facilitation by the Global Environment Centre (GEC) and the Global Green Growth Institute (GGGI), under the coordination of the Ministry of Environment through the General Directorate of Natural Protected Area. It was validated and refined at two stakeholder consultative workshops held on 23 January 2026 and 19 March 2026, which brought together 158 participants from government, development partners, financial institutions, private sector, civil society, and local communities.

Delivering this Framework will require sustained partnership. I call on line ministries, sub-national authorities, the private sector, and local communities to carry out their assigned responsibilities. In addition, I invite the Green Climate Fund, the Global Environment Facility, development finance institutions, bilateral partners, and domestic financial institutions to invest alongside with us. Cambodia will continue to work with ASEAN Member States, the ASEAN Secretariat, and international partners to achieve a haze-free region, and a clean, green, and sustainable Cambodia.

Phnom Penh, 9 October 2026
Minister of Environment

H.E. Dr. EANG Sophalleth

ACKNOWLEDGEMENT

The Investment Framework for Haze-Free Sustainable Land Management (IF-HFSLM) was prepared under the leadership of the Ministry of Environment, through the General Directorate of Natural Protected Areas, as Cambodia's country-level response to the ASEAN Investment Framework for Haze-Free Sustainable Land Management (AIF-HFSLM) 2023-2030.

The Ministry of Environment records its appreciation to the UK Mission to ASEAN for financial support through the ASEAN-UK Green Transition Fund, and to the ASEAN Secretariat for guidance on alignment with the regional framework and with the ASEAN Agreement on Transboundary Haze Pollution (AATHP).

Technical facilitation was provided by the Global Environment Centre (GEC) and the Global Green Growth Institute (GGGI), whose teams supported the analysis, stakeholder consultations, pipeline development, and financing design that underpin this Framework.

The Ministry thanks the National Council for Sustainable Development and the line ministries and agencies that contributed to the analysis and validation, including the Ministry of Agriculture, Forestry and Fisheries (MAFF), the Ministry of Economy and Finance, the Ministry of Mines and Energy, the Ministry of Women's Affairs, the National Committee for Disaster Management, the Council for the Development of Cambodia, the National Bank of Cambodia, and the Securities and Exchange Regulator of Cambodia.

Appreciation is also extended to the provincial administrations of the priority landscapes, in particular Mondulkiri, Ratanakiri, Preah Vihear, Stung Treng, Kratie, Kampong Thom, Battambang, and Siem Reap, together with Pursat and Kampong Chhnang, whose officials provided field-level insight on fire patterns, land use, and enforcement capacity.

The Framework benefited from the participation of development partners and financial institutions, including the Green Climate Fund, the Global Environment Facility, the Asian Development Bank, the World Bank, the International Fund for Agricultural Development, Agence Française de Développement, GIZ, the United Nations Development Programme, the Credit Guarantee Corporation of Cambodia, and domestic commercial banks.

Finally, the Ministry thanks the 158 participants of the two stakeholder consultative workshops held on 23 January 2026 and 19 March 2026, drawn from government, development partners, financial institutions, private sector, civil society, as well as Indigenous Peoples and Local Community representatives. Their contributions shaped the priorities, the project pipeline, and the inclusion commitments set out in this Framework.

INVESTMENT FRAMEWORK

for Haze-Free Sustainable Land Management

IF-HFSLM | Kingdom of Cambodia | 2026–2035

A National Investment and Implementation Platform Supporting Cambodia’s Clean, Green, and Sustainable Development Pathway

158 Stakeholders Consulted (1st Workshop: 68 – 23 Jan 2026; 2nd Workshop: 90 – 19 Mar 2026)	15 Priority Project Concepts	USD 690M Indicative Pipeline Value	2030 ASEAN Haze-Free Target Year (Proposed realigned to 2035)
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List of Abbreviations

AATHP	ASEAN Agreement on Transboundary Haze Pollution
ADB	Asian Development Bank
AFD	Agence Française de Développement
AIF-HFSLM	ASEAN Investment Framework for Haze-Free Sustainable Land Management
ASMC	ASEAN Specialised Meteorological Centre
AWD	Alternate Wetting and Drying
BAU	Business-as-Usual
CGCC	Credit Guarantee Corporation of Cambodia
CLT	Communal Land Title
CSE	Circular Strategy on Environment
EWS	Early Warning System
FDG	Focus Group Discussion
FOLU	Forestry and Other Land Use
FPIC	Free, Prior and Informed Consent
GCF	Green Climate Fund
GEF	Global Environment Facility
GEDSI	Gender Equality, Disability and Social Inclusion
HFSLM	Haze-Free Sustainable Land Management
IF	Investment Framework
IPLC	Indigenous Peoples and Local Communities
LTS4CN	Long-Term Strategy for Carbon Neutrality
MAFF	Ministry of Agriculture, Forestry and Fisheries
MoE	Ministry of Environment
MRV	Monitoring, Reporting and Verification
NDC	Nationally Determined Contribution
PM2.5	Fine particulate matter of 2.5 micrometres or smaller
QIP	Qualified Investment Project
REDD+	Reducing Emissions from Deforestation and Forest Degradation in Developing Countries, with additional forest-related activities that protect the climate
RGC	Royal Government of Cambodia
SME	Small and Medium Enterprise
UNDP	United Nations Development Programme
VCM	Voluntary Carbon Market

Executive Summary

Cambodia has made significant progress over the past decade in strengthening environmental management, fire prevention, and climate governance, contributing to a general decline in fire hotspot occurrences through the efforts of the Ministry of Environment (MoE), relevant institutions, sub-national authorities, local communities, and development partners. However, seasonal haze, informal agricultural residue burning, illegal forest and wetland fires, informal open waste burning, and transboundary smoke pollution continue to pose environmental, public health, and climate-related challenges in certain landscapes, in particular during periods of prolonged drought and climate variability.

In response, and in line with the ASEAN Investment Framework for Haze-Free Sustainable Land Management (AIF-HFSLM) 2023–2030, the country-level Investment Framework for Haze-Free Sustainable Land Management (IF-HFSLM) establishes Cambodia's pathway for mobilising public and private finance to reduce open burning, strengthen sustainable land management (SLM), reduce haze pollution, mobilise climate finance, and support a Clean, Green, and Sustainable Cambodia.

Throughout this document, “**investment**” covers both commercially viable ventures that generate direct financial returns and enabling public financing measures, including capacity building, Monitoring, Reporting, and Verification (MRV) systems, institutional strengthening, and policy reform, whose returns are primarily environmental, social, or institutional. The framework, therefore, draws a clear line between bankable investment concepts and enabling measures that require grant, concessional, or public financing support.

The AIF-HFSLM serves as Cambodia's country-level instrument for operationalising the ASEAN mandate on haze-free sustainable land management (HFSLM)². The country-level IF-HFSLM was developed through a participatory and consultative process supported by the UK Mission to ASEAN through the ASEAN-UK Green Transition Fund, with technical facilitation from the Global Environment Centre (GEC) and the Global Green Growth Institute (GGGI), in collaboration with MoE through the General Directorate of Natural Protected Area (GDNPA).

The framework was subsequently presented, validated, and refined at two Stakeholders Consultative Workshops, held on 23 January 2026 and 19 March 2026 at the Hyatt Regency Hotel, Phnom Penh. The workshops brought together 158 participants from government, development partners, financial institutions, private sector, civil society, and community representatives, with approximately 57% male and 43% female participation.

To strengthen investment relevance and implementation effectiveness, the IF-HFSLM adopts a landscape-based and evidence-driven approach integrating hotspot monitoring, agricultural residue management, forest and wetland fire prevention, ecosystem restoration, public health protection, and climate finance. Priority interventions are differentiated according to landscape type, including no-burn rice straw management in intensive lowland rice systems; community-based fire prevention and restoration in forest-edge protected areas; hydrological restoration and fire prevention in Tonle Sap floodplain wetlands; and improved waste collection and enforcement in peri-urban areas. Investments prioritise interventions that are technically feasible, financially realistic, socially

inclusive, environmentally sustainable, and measurable through a transparent national MRV system aligned with Cambodia's environmental and climate objectives.

~8M t	55%	59.1%	USD 690M
Rice straw generated annually in Cambodia	Conditional GHG reduction target by 2035 (NDC 3.0)	NDC reductions from FOLU sector	Indicative project pipeline (15 concepts)

ES.1 The Haze Problem

At the First Stakeholder Consultative Meeting held on 23 January 2026 in Phnom Penh, participants confirmed that Cambodia's haze challenge is both multi-source and seasonal in nature.³ Agricultural residue burning, primarily rice straw, remains the dominant domestic driver. Cambodia's flat lowland topography and dry-season climatic conditions accelerate fire spread. In intensive rice production provinces (Table ES-1), farmers must work within a harvest-to-replanting window of just four to five days. Under these conditions, burning remains the fastest land-clearing option available to them. Other significant sources include forest-edge fires in the northeastern provinces, municipal waste burning in peri-urban areas, and domestic and transboundary smoke drifting across the Mekong sub-region.

Table ES-1. Cambodia Haze Sources and Priority Hotspot Provinces (FGD 1, 23 January 2026)

Haze Source	Primary Driver	Investment Need	Priority Provinces	Season
Rice straw burning	Short harvest-replant window; no mechanisation	Mechanisation + residue market	Prey Veng, Takeo, Battambang, Siem Reap	Nov – Apr
Maize / cassava residues	Land clearing; no residue markets; limited residue utilisation	Residue collection, no-burn land preparation, biomass utilisation, and farmer cooperative residue aggregation systems	Kampong Cham, upland provinces	Feb – Apr
Forest-edge fires	Land clearing; hunting; drought stress; institutional and enforcement capacity constraints	Patrol + restoration	Mondulkiri, Ratanakiri, Preah Vihear, Kratie	Jan – May
Floodplain / wetland fires	Declining seasonal water levels; drying; hydrological change	Restoration	Tonle Sap Basin; Kampong Thom	Dec – Apr
Municipal waste burning	Absent waste collection services; infrastructure gap	Waste management	Peri-urban areas nationwide	Year-round

ES.2 HFSLM Definition

For the purposes of Cambodia's IF, HFSLM is proposed to include practical and investable terms or elements as follows:

- No-burn land preparation and residue management, enabled by mechanisation and residue utilisation markets;
- Improved land management practices reducing fire risk while strengthening soil, water, and productivity outcomes;
- Forest and protected area fire prevention and restoration, including early warning, rapid response, and community patrol; and
- Governance and finance systems steering capital away from harmful burning toward verified no-burn outcomes.

HFSLM should not be interpreted solely as residue utilisation or biomass commercialisation. The framework adopts a landscape-based hierarchy that prioritises soil health, ecosystem integrity, climate mitigation, public health protection, and sustainable livelihoods. Agricultural residues should first support soil fertility and sustainable agricultural systems before diversion to commercial value chains.

ES.3a Government Commitments to Unlock Investment

The Royal Government's commitments to unlock private investment for haze-free sustainable land management are summarised in Table ES-2. They include sovereign green and sustainability bonds issued through the MEF pipeline; the Green Finance Taxonomy issued by the National Bank of Cambodia (NBC)/ Securities and Exchange Regulator of Cambodia (SERC); the Cambodia Sustainable Bond Accelerator (CSBA) programme; and Cambodia's Nationally Determined Contribution (NDC) 3.0 commitments aligned to the 2035 target.

Achieving HFSLM in Cambodia requires coordinated policy reform, investment facilitation, institutional strengthening, and long-term public financing commitments. The following phased commitments outline the enabling environment required to mobilise climate finance and private investment (See also Table ES-5).

Table ES-2. Cambodia IF-HFSLM Three-Phase Implementation and Investment Architecture (FGD 3, 23 January 2026)

SHORT-TERM Now - Q2 Jan – Sep 2026	MEDIUM-TERM + 5–36 Months July 2026 – Dec 2027	LONG-TERM 3–5 Years 2026–2035
Deliverables ✓ Adopt IF for Cambodia – third quarter of 2026 ✓ Designate National HFSLM Focal Point ✓ Establish an inter-agency coordination task force ✓ Submit 1–3 GCF/GEF concept notes ✓ Map and integrate existing monitoring systems	Deliverables ✓ Launch circular bioeconomy pilots ✓ Operationalise blended finance facility ✓ Activate Early Warning System (EWS) in Tier 1 provinces ✓ Green Finance Taxonomy completed by National Bank of Cambodia / Securities and Exchange Regulator of Cambodia (NBC/SERC) ✓ National Carbon Registry operational	Deliverables ✓ HFSLM integrated in national sector plans and budgets ✓ Scale to USD 690M+ pipeline ✓ MRV institutionalised in climate finance reporting ✓ National Investor Roundtable permanent platform

What Becomes Investable	What Becomes Investable	What Becomes Investable
- Flagship concepts at pre-feasibility stage - Investment-grade policy environment confirmed	- USD 30–50M mobilised - First MRV annual report published - Guarantee facility active for Small and Medium Enterprise (SME) lending	2035 Nationally Determined Contribution (NDC) 3.0 target on track - Sustained private capital flowing - NDC Forests and Other Land Use (FOLU) targets measurably met

Note: “Tier 1 provinces” refers to the eight provinces classified as High or Very High fire risk in Table 1.1: Monduliri, Ratanakiri, Preah Vihear, Stung Treng, Kratie, Kampong Thom, Battambang, and Banteay Meanchey.

ES.3b Private Sector Investment Pipeline

Several areas within the HFSLM agenda offer commercially viable returns that can attract private sector participation (Table ES-3). Rice straw collection and processing, covering compost, mushroom substrate, and building materials, can generate positive returns within two to three cropping cycles once linked to offtake agreements. Biochar production offers a dual revenue stream: carbon credits estimated at USD 30–80 per tonne CO₂e under Article 6, alongside soil amendment value for farmers. Meanwhile, biomass energy facilities in industrial corridors present bankable revenue streams with payback periods of five to seven years. However, not all proposed value chains are currently investment-ready. Several opportunities remain at pilot or pre-feasibility stages and require further technical validation, market assessment, feedstock analysis, safeguard assessment, and policy support before large-scale commercial investment can occur. In addition, agricultural residue management should prioritise soil fertility, nutrient recycling, and sustainable agricultural productivity before diversion to industrial value chains. Investment readiness varies significantly across sectors, technologies, and geographic contexts. Realising these opportunities, however, depends on enabling policy and regulatory reforms. These include clear carbon credit ownership rules under Cambodia’s Article 6 Operations Manual, risk-sharing instruments such as Credit Guarantee Corporation of Cambodia (CGCC) and Green Climate Fund (GCF) first-loss capital, and streamlined licensing for biomass and residue processing enterprises.

Table ES-3. Private Sector Investment Pipeline – Cambodia HFSLM

Pipeline Component	Status	Potential Funding Sources	Likely Executing Partners
Zero-Burning Circular Economy Fund for Agricultural Residues	Pipeline development	Green bonds; MDBs; carbon finance; commercial banks	MAFF, MoE, provinces, SMEs
Rice straw residue management (priority: in-field incorporation with decomposition agents such as Trichoderma to enrich soils; secondary value-chain pathways for collected residue include compost, mushroom substrate, animal feed, building materials, and rice straw paper or compostable packaging under offtake agreements; open burning is excluded from all pathways) and compostable packaging enterprises	Pipeline	Private sector; green bonds; MDBs	MAFF + industry actors

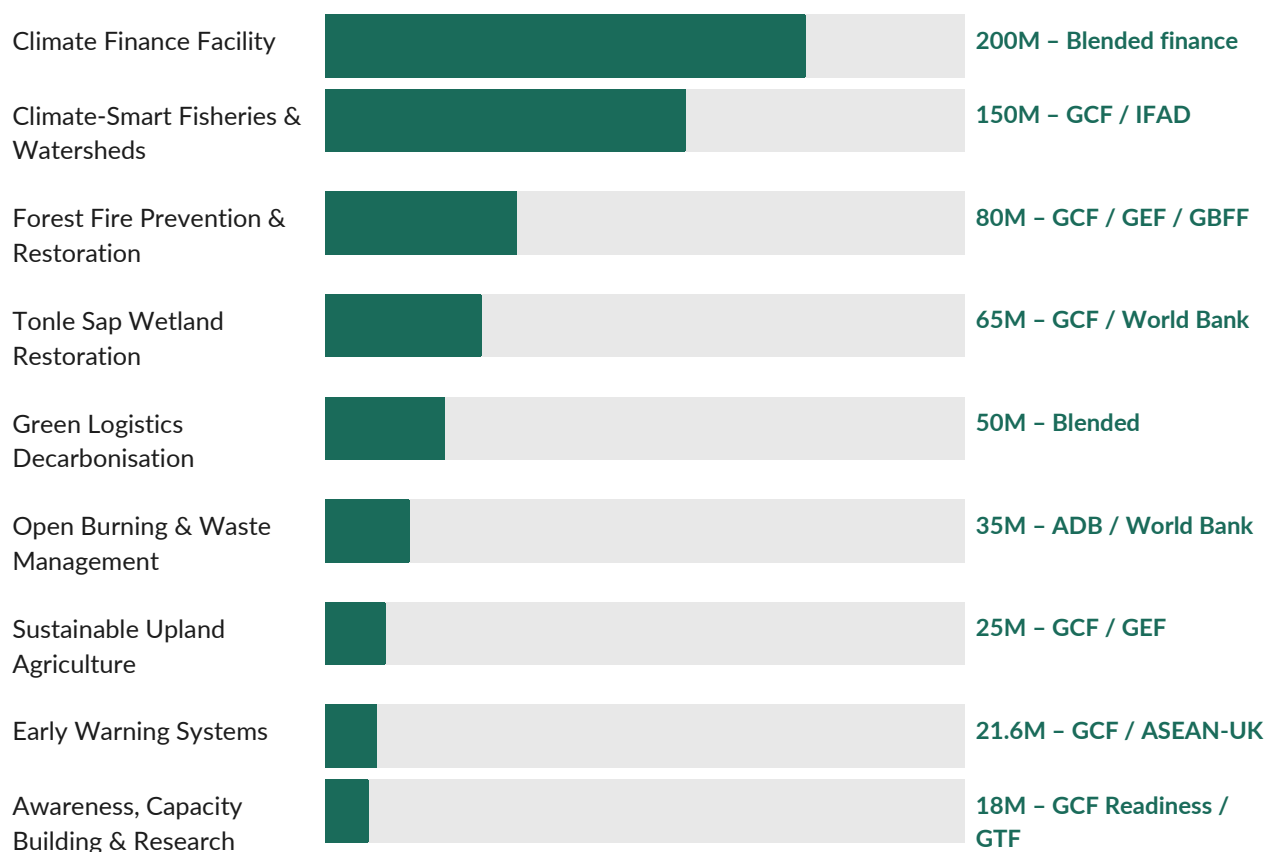
Pipeline Component	Status	Potential Funding Sources	Likely Executing Partners
Biochar and syngas from agricultural residues	Pipeline	Carbon finance; GCF/GEF; private investors	MAFF + energy sector actors
Fire-free commodity supply chains (rice, maize, cassava)	Ongoing / pipeline	IFAD / World Bank + commodity companies	MAFF + cooperatives and aggregators
Fire prevention, early warning, and monitoring systems	Ongoing / pipeline	GCF / GEF; bilateral support	MoE + national monitoring units

Agricultural residue management should prioritize soil fertility, nutrient recycling, and sustainable agricultural productivity before diversion to industrial value chains.

ES.4 Investment Opportunities and Pipeline

Figure ES-1 illustrates the indicative project pipeline by AIF Objective, totalling USD 690 million across 15 project concepts identified through the First (23 January 2026) and Second (19 March 2026) National Consultative Workshops.

The indicative investment pipeline combines enabling public investments, concessional climate finance opportunities, and commercially oriented projects. Not all pipeline components are equally investment-ready; several require feasibility studies, pilot demonstrations, policy reform, and market validation before large-scale financing can be mobilised.



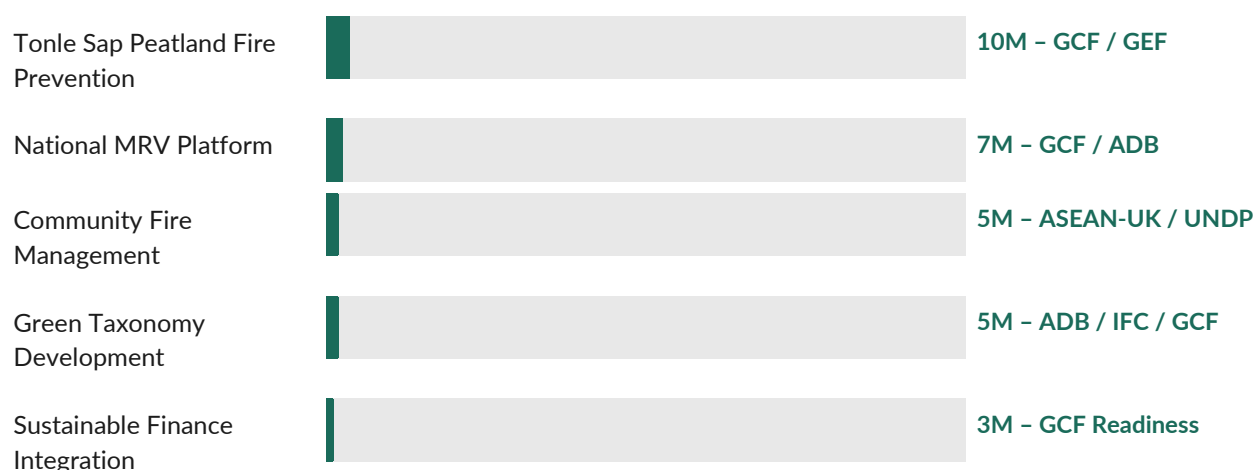


Figure ES-1: Indicative Project Pipeline by Concept (USD Million). Source: GEC & GGGI (2026). Cambodia IF-HFSLM. Source: FGD 3, National Consultative Workshops, 23 January 2026 and 19 March 2026

ES.5 Financing Architecture at a Glance

The IF-HFSLM financing architecture (Table ES-4) comprises three layers: (i) a sovereign concessional layer (GCF, AF, bilateral grants and concessional loans, and sovereign green/sustainability bonds) anchored at MEF; (ii) a blended and de-risked private layer (partial credit guarantees via CGCC, first-loss tranches, results-based payments, and private green bonds via CSX); and (iii) a grant-based readiness and preparation layer (GCF Readiness, ASEAN-UK GTF, and bilateral TA).

The financing architecture combines public finance, concessional climate finance, development finance, commercial lending, impact investment, and carbon finance. Different financing instruments are appropriate for different project types depending on their commercial viability, public-good characteristics, and implementation stage.

Table ES-4. HFSLM Financing Architecture – Cambodia IF

Financing Layer	Source	Instruments	Stage
Catalytic / de-risk	Government (RGC)	Subsidies, tax relief, guarantee fee support	Early
Concessional climate	GCF, GEF, IFAD	Grants, concessional loans, results-based payments	Early-mid
Development finance	ADB, World Bank, AFD, GIZ (MDBs and bilateral donors listed together as development finance providers; bilateral donors such as AFD and GIZ provide grants and TA, while MDBs provide concessional loans, first-loss capital, and guarantees)	Concessional loans, first-loss capital, guarantees	Mid-stage
Commercial bank debt	ACLEDA, Phillip Bank, NBC-aligned	Credit lines, supply-chain finance, equipment loans	Mid-mature

Financing Layer	Source	Instruments	Stage
Private / impact equity	ESG funds, impact investors	Circular bioeconomy equity, restoration fund investment	Mature
Carbon / nature finance	VCM, Article 6, GBFF	Carbon credits, biodiversity credits, REDD+	Performance stage

ES.6 Action Plan Overview

The implementation of the IF-HFSLM will require a phased and coordinated approach that balances policy readiness, institutional strengthening, pilot investments, and long-term financing mobilization. The proposed action plan provides an indicative sequencing framework to guide short-, medium-, and long-term implementation priorities, while supporting progressive scaling of haze-free sustainable land management interventions across Cambodia (Table ES-5). The sequencing also reflects the need to strengthen enabling systems, including policy coordination, MRV platforms, blended finance mechanisms, and investment readiness, before large-scale implementation and private sector mobilization can be fully achieved.

Table ES-5. IF Action Plan – Investment-Oriented Sequencing

Time Horizon	Key Priority Actions	Target Outcomes
Short-term Now – Q3 (January – September 2026)	Adopt IF-HFSLM for Cambodia; confirm focal point; advance 1–3 GCF/GEF concept notes; align monitoring systems	Investment-grade policy platform; first project pipeline ready
Medium-term + 5–36 months (July 2026 – December 2027)	Launch circular bioeconomy pilots; activate blended facility and guarantees; fire prevention investments; MRV platform	USD 30–50M mobilised; measurable fire reduction in priority provinces
Long-term 3–5 years (2026–2035)	Mainstream in sector plans; scale to full USD 690M pipeline by 2035; institutionalise MRV for climate finance	HFSLM implementation on track for 2035 (NDC 3.0 target year); sustained private investment flowing

Chapter 1. Country Context and Baseline

Cambodia's haze profile reflects the interaction between agricultural intensification, climate variability, ecosystem degradation, and evolving land-use systems. Rapid agricultural expansion, increased dry-season rice cultivation, forest-edge encroachment, and changing hydrological conditions have shaped the frequency and spatial extent of open burning and fire risk across multiple landscapes, although there is a decreasing trend in the number of hotspots over the past decade.

1.1 Hotspots and Drivers

Cambodia's Investment Framework for Haze-Free Sustainable Land Management (IF-HFSLM) relies on consolidated hotspot data from the ASEAN Specialised Meteorological Centre (ASMC, 2025)¹² as the reference dataset (Box 1). Hotspot data is complemented by Fire Danger Rating System (FDRS) outputs from MET Malaysia, which provide observation (current day) and forecast (up to 7 days) of the Fire Weather Index (FWI).

In this framework, "hotspot" refers to satellite-detected thermal anomalies associated with active fire events identified using ASEAN Specialised Meteorological Centre (ASMC) hotspot monitoring datasets derived from the Visible Infrared Imaging Radiometer Suite (VIIRS) observations.

Box 1. Framework Development Approach

The IF-HFSLM was developed through a consultative, evidence-based, and landscape-oriented approach aligned with the ASEAN Investment Framework for Haze-Free Sustainable Land Management (AIF-HFSLM). The framework combines hotspot analysis, policy review, stakeholder consultations, investment screening, and climate-finance assessment to identify priority intervention areas and indicative investment opportunities for Cambodia.

The analytical process utilised multiple data sources, including hotspot datasets from the ASEAN ASMC, FDRS outputs, national land-use and agricultural information, existing policy and strategy documents, and findings from previous studies related to sustainable land management, fire management, climate resilience, and environmental governance. Provincial hotspot patterns, agricultural intensity, ecosystem vulnerability, seasonal fire occurrence, and implementation feasibility were considered in identifying priority landscapes and intervention areas.

The framework was further refined through stakeholder consultations involving representatives from government institutions, development partners, financial institutions, private sector actors, civil society organisations, Indigenous Peoples and Local Communities (IPLCs), academia, and local communities. Investment concepts and financing mechanisms were screened based on policy relevance, technical feasibility, implementation readiness, environmental sustainability, and potential contribution to haze reduction, climate mitigation, ecosystem resilience, and sustainable livelihoods.

The IF-HFSLM is intended as a strategic investment and implementation framework rather than a detailed feasibility study. Several proposed investments and financing concepts will therefore require further technical assessment, safeguard review, market analysis, and project preparation before full-scale implementation.

Cambodia's haze profile follows a seasonal pattern, driven primarily by agricultural burning in lowland rice systems and forest-edge fires in the northeastern provinces. Conditions typically worsen between December and April, reaching their peak in January-February when dry-season fire activity is at its most intense. To illustrate the scale of fire activity, satellite monitoring shows significant

hotspot occurrences across Cambodia. In 2025, a total of 16,766 high-confidence fire hotspots were detected nationwide using NOAA-20 satellite sensors, with higher concentrations observed in northern, northeastern, and Tonle Sap agricultural regions.⁵⁴ Thus, fire hotspot analysis in this framework is based on the ASMC datasets, combined with stakeholder consultations, land-use patterns, and ecosystem vulnerability assessments. Risk classification reflects not only hotspot frequency but also haze-generation potential, population exposure, agricultural intensity, and ecological sensitivity. The classifications are intended to support investment prioritization and planning rather than regulatory categorization.

Table 1.1 summarises the priority provinces and landscapes where fire risk and haze drivers are most significant in Cambodia, based on satellite hotspot observations and stakeholder consultations. Provinces with intensive rice production such as Prey Veng, Takeo, Battambang, and Siem Reap show higher risk levels because rice straw burning is commonly used to quickly clear fields between cropping cycles. At the same time, upland and forest edge provinces, including Mondulkiri, Ratanakiri, and Preah Vihear face elevated fire risks linked to land clearing, hunting related fires, and agricultural expansion near forest areas. Areas around the Tonle Sap floodplain, such as Kampong Thom, also experience seasonal fire risks during dry periods when vegetation becomes more vulnerable. Provinces classified as medium risk, such as Kratie and Kampong Cham, still show fire activity but at a lower concentration, often associated with mixed agriculture and crop residue burning. Overall, the table helps identify priority landscapes for Haze-Free Sustainable Land Management (HFSLM) interventions, where targeted actions such as residue management, early warning systems (EWS), and community fire prevention can reduce fire hotspots and haze impacts.

Table 1.1. Cambodia Fire Hotspot Profile by Province (Stakeholder Assessment, FGD 1, 23 January 2026)

Province / Landscape	Fire Risk Level	Primary Driver	Land Use	HFSLM Priority
Prey Veng	● HIGH	Rice straw burning	Triple-crop paddy	✓ Tier 1
Takeo	● HIGH	Rice straw burning	Double/triple-crop paddy	✓ Tier 1
Battambang	● HIGH	Rice straw + forest edge	Rice + upland crops	✓ Tier 1
Siem Reap	● MEDIUM-HIGH	Agricultural + wetland drying	Rice + floodplain	✓ Tier 1
Kampong Thom	● MEDIUM-HIGH	Floodplain fire risk	Tonle Sap floodplain	✓ Tier 1
Mondulkiri	● HIGH	Land clearing; hunting	Forest edge; upland crops	✓ Tier 1
Ratanakiri	● HIGH	Forest fires; land clearing	Indigenous forest lands	✓ Tier 1

Province / Landscape	Fire Risk Level	Primary Driver	Land Use	HFSLM Priority
Preah Vihear	● MEDIUM-HIGH	Forest fires; encroachment	Protected areas	✓ Tier 1
Kratie	● MEDIUM-HIGH	Forest fires	Mixed forest-agriculture	✓ Tier 2
Kampong Cham	● MEDIUM	Maize/cassava residues	Commercial upland crops	✓ Tier 2

Notes:

1. Fire Risk Level: Based on VIIRS and MODIS hotspot frequency, Fire Weather Index (FWI) observation and 7-day forecast from the ASEAN MET Malaysia Fire Danger Rating System (FDRS), and stakeholder assessment (FGD 1).
2. HFSLM Priority:
 - a. Tier 1 = Highest priority for immediate investment.
 - b. Tier 2 = Secondary priority for medium term preparation.

Provinces with lower hotspot density may still exhibit high haze-generation potential where repeated agricultural burning occurs within densely cultivated and populated landscapes. Conversely, provinces with extensive forest fires may exhibit higher hotspot density but lower direct population exposure. Fire-risk classification therefore reflects a composite assessment rather than hotspot count alone.

The map (Figure 1.1) presents the distribution of high-confidence fire hotspots detected across Cambodia in 2025 using satellite observations.⁵⁴ In total, 16,766 hotspots were recorded, indicating widespread fire activity during the dry season (November–April). Higher fire hotspots concentrated in the northern and northeastern provinces, including Mondulkiri, Ratanakiri, Preah Vihear, and Stung Treng, as well as agricultural landscapes around the Tonle Sap basin. These areas combine forest edges and intensive agricultural production, where seasonal burning practices are more common.

This spatial pattern is consistent with the findings from the FGDs held in January 2026, where participants identified several key drivers of haze in Cambodia.³ These include rice straw burning after harvest, land conversion pressure for agriculture, illegal forest fires linked to hunting or forest product collection, and informal community waste burning. Stakeholders also noted that farmers often burn crop residues because the time between rice harvest and the next planting cycle is short, making burning the fastest way to prepare fields. The results suggest that improving residue management, early warning systems, and community-based fire prevention may significantly reduce fire hotspots and haze impacts. In addition, the results highlight the importance of adopting landscape-specific fire management strategies. Effective HFSLM implementation will require differentiated approaches across agricultural lowlands, floodplains, forest-edge zones, indigenous territories, and peri-urban areas, recognizing that drivers, risks, and investment needs differ substantially across landscapes.

Table 1.2 summarises the relative fire risk levels across Cambodian provinces based on stakeholder consultations, hotspot observations, and agricultural land use patterns. Provinces such as Prey Veng, Takeo, Monduliri, and Ratanakiri show very high fire risk due to intensive informal rice straw burning and illegal forest fires linked to land clearing. Battambang, Siem Reap, Kampong Thom, and Preah Vihear are classified as high risk because of a mix of agricultural burning, forest edge fires, and seasonal floodplain drying. Several provinces fall under medium high to medium risk where fires are linked to crop residue burning, forest transition zones, or peri-urban waste burning. Coastal and urban areas including Kampot, Kep, Koh Kong, Preah Sihanouk, and Phnom Penh show relatively low fire risk due to limited agricultural burning and lower hotspot density.

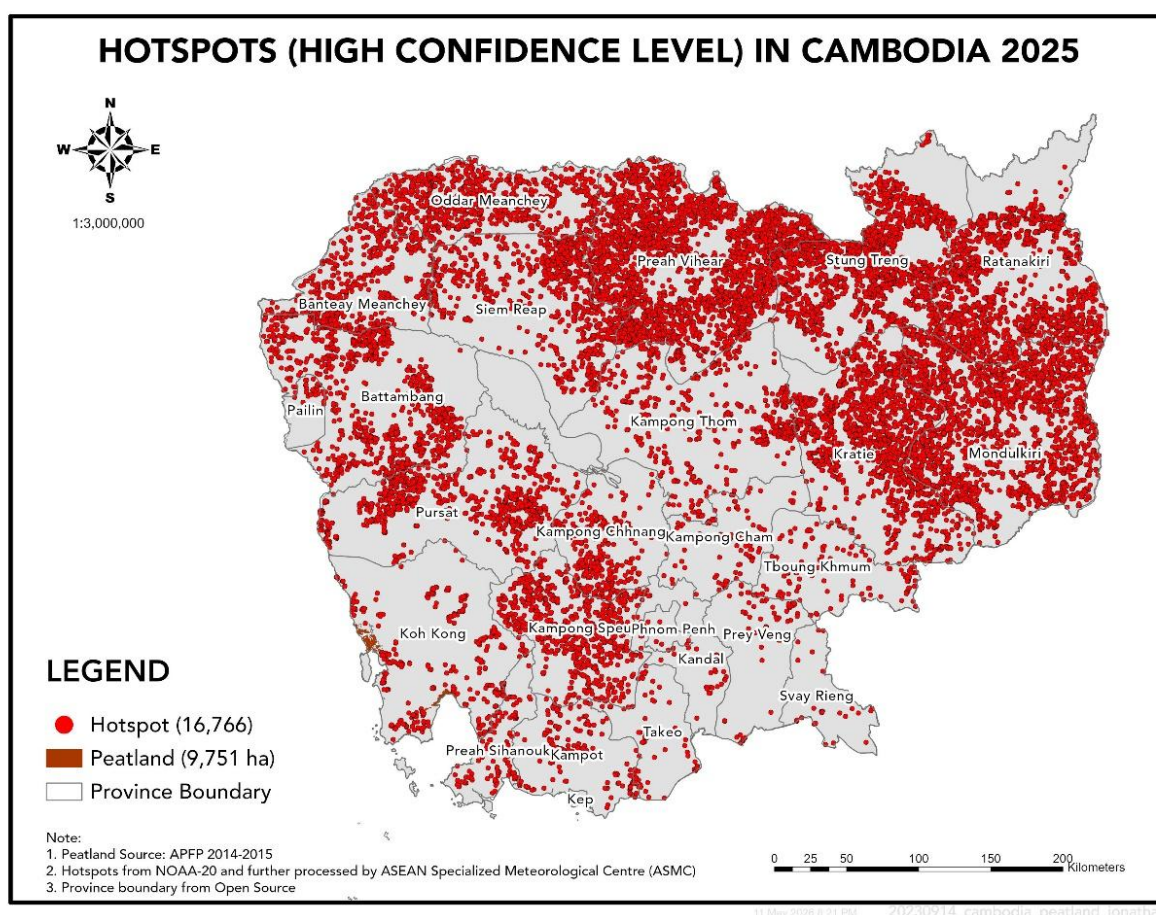


Figure 1.1: Distribution of high-confidence hotspots detected across Cambodia in 2025. Source: ASMC hotspot dataset.

Table 1.2: Relative fire risk levels across Cambodian provinces; Source: Stakeholder consultation FGD 1 (23 January 2026); ASMC hotspot data 2023–24; MAFF agricultural intensity data. Risk ratings are indicative pending official MoE validation with GIS data.

● VERY HIGH	● HIGH	● MED-HIGH	● MEDIUM	● LOW
Prey Veng VERY HIGH <i>Rice straw (triple crop)</i>	Takeo VERY HIGH <i>Rice straw (intensive)</i>	Monduliri VERY HIGH <i>Forest fire (land clearing)</i>	Ratanakiri VERY HIGH <i>Forest fire (IPLC land)</i>	Battambang HIGH <i>Rice straw + forest edge</i>
Siem Reap HIGH <i>Rice + wetland drying</i>	Kampong Thom HIGH <i>Floodplain seasonal fire</i>	Preah Vihear HIGH <i>Protected area encroachment</i>	Banteay Meanchey MED-HIGH <i>Rice straw (border zone)</i>	Kratie MED-HIGH <i>Forest fire (river corridor)</i>

Pursat MED-HIGH <i>Tonle Sap wetland drying</i>	Kampong Cham MEDIUM <i>Maize/cassava residue</i>	Kampong Speu MEDIUM <i>Upland crops residue</i>	Stung Treng MEDIUM <i>Forest transition</i>	Kampong Chhnang MEDIUM <i>Rice straw (lowland)</i>
Kandal MEDIUM <i>Peri-urban waste burning</i>	Svay Rieng MEDIUM <i>Rice straw border</i>	Oddar Meanchey MEDIUM <i>Forest edge (northwest)</i>	Pailin MEDIUM <i>Forest/upland transition</i>	Tboung Khmum MEDIUM <i>Upland crop residue</i>
Kampot LOW <i>Minimal burning</i>	Kep LOW <i>Minimal</i>	Koh Kong LOW <i>Forest edge (low density)</i>	Preah Sihanouk LOW <i>Coastal minimal</i>	Phnom Penh LOW <i>Urban waste (controlled)</i>

Table 1.3a identifies priority provinces for HFSLM investment in Cambodia, grouped into Tier 1 and Tier 2 based on fire risk levels, drivers of burning, and landscape characteristics. Tier 1 provinces, including Prey Veng, Takeo, Mondulkiri, Ratanakiri, Battambang, Kampong Thom, Siem Reap, and Preah Vihear, show the highest fire risks linked to intensive rice straw burning in lowland paddy systems and forest fires in upland and protected landscapes. These areas require targeted investments such as residue management, no-burn supply chains, community fire patrols, and forest restoration. Tier 2 provinces, such as Banteay Meanchey, Kratie, Pursat, Kampong Cham, and Kampong Speu, face moderate fire risks associated with crop residue burning, forest transition zones, and wetland drying. In these provinces, priority actions focus on residue management, early warning systems, regenerative agriculture, and community-based forest management to reduce fire hotspots and haze impacts.

Table 1.3a: Cambodia HFSLM Priority Province Investment Profile – Tiers 1 and 2 (FGD 1; ASMC Data 2023–24)

Province	Tier	Risk	Primary Driver	Landscape	HFSLM Priority Investment
Prey Veng	T1	● VERY HIGH	Rice straw – intensive triple crop	Lowland paddy	Mechanisation + circular economy + compliance supply chain
Takeo	T1	● VERY HIGH	Rice straw – intensive double/triple	Lowland paddy	No-burn supply chains + aggregation hubs
Mondulkiri	T1	● VERY HIGH	Forest fire – land clearing + hunting	Forest edge / IPLC	Community patrol + REDD+ + FPIC enterprise support
Ratanakiri	T1	● VERY HIGH	Forest fire – IPLC land clearing	Indigenous forest	FPIC + community enterprise + CLT acceleration
Battambang	T1	● HIGH	Rice straw + forest edge fires	Rice + Tonle Sap rim	Residue management + floodplain restoration

Province	Tier	Risk	Primary Driver	Landscape	HFSLM Priority Investment
Kampong Thom	T1	● HIGH	Floodplain seasonal fire	Tonle Sap floodplain	Wetland fire prevention + hydrological restoration
Siem Reap	T1	● HIGH	Rice + wetland drying	Tonle Sap Basin rim	Residue management + fire prevention
Preah Vihear	T1	● HIGH	Forest fire – PA encroachment	Protected forest	Early warning + patrol + restoration
Banteay Meanchey	T2	● MED-HIGH	Rice straw – northwest border	Tonle Sap northwest	Residue management + EWS
Kratie	T2	● MED-HIGH	Forest fire – river corridor	Mixed forest-agri	Patrol + restoration + NTFP enterprises
Pursat	T2	● MED-HIGH	Tonle Sap wetland drying	Floodplain/wetland	Wetland restoration + fire prevention
Kampong Cham	T2	● MEDIUM	Maize/cassava residue	Upland commercial	Supply chain compliance + residue management
Kampong Speu	T2	● MEDIUM	Maize residue – upland clearing	Upland transition	Regenerative agriculture + EWS

In addition, understanding the seasonal patterns of major fire types is important for improving fire prevention and haze management in Cambodia (Table 1.3b). Rice straw burning, forest fires, wetland fires, and waste burning occur at different times of the year, depending on agricultural cycles, climatic conditions, and land management practices. This seasonal understanding can support seasonal planning, early warning, awareness campaigns, enforcement, community preparedness, resource allocation, and targeted investment interventions.

Table 1.3b. Indicative Seasonal Fire and Haze Risk Calendar in Cambodia. Risk levels are indicative and based on seasonal hotspot trends, stakeholder consultations, agricultural calendars, climatic conditions, and landscape characteristics rather than quantitative fire occurrence thresholds.

Month	Rice Straw Burning	Forest Fire	Wetland Fire	Waste Burning
November	Medium	Low	Low	Medium
December	High	Medium	Medium	Medium
January	High	High	Medium	Medium
February	Very High	High	High	Medium
March	High	Very High	Very High	Medium
April	Medium	High	High	Medium
May	Low	Medium	Medium	Medium

Agricultural Residue Burning – Primary Domestic Driver

Agricultural residue burning constitutes the largest share of Cambodia's domestic haze generation. The practice is particularly prevalent in provinces with intensive double and triple cropping systems, where the pressure on farmers is greatest.⁴ Each year, Cambodia generates an estimated two to eight million tonnes of rice straw. A critical operational constraint drives burning; in intensive rice provinces, farmers have only four to five days between harvest and replanting. Without mechanised alternatives, burning remains the fastest, cheapest land-clearing option.¹⁰ However, the most effective response is not simply to remove all residues from fields, but to create a balanced residue management system that maintains soil fertility while reducing burning. Straw incorporation, chopping, composting, mulching, and controlled use in local value chains should be prioritized according to soil type, cropping intensity, machinery availability, and market access.

⚡ Key Finding – FGD 1, 23 January 2026

Why farmers burn: The four-to-five-day harvest-replanting window in double and triple-crop rice systems makes burning the default option.

Structural barriers: Limited access to straw balers; weak rural logistics; fragmented landholdings; no residue markets; limited technology transfer and technical know-how; insufficient skills training for farmers and SMEs in alternative residue management.

Scale: Cambodia generates 2–8 million tonnes of rice straw annually. If diverted, this represents a multi-million-dollar circular economy opportunity.

Forest and Protected Area Fires

Forest fires in Cambodia stem from several interconnected causes: land clearing, hunting, non-timber forest product (NTFP) collection, and accidental ignition during the dry season. The northeastern provinces of Monduliri, Ratanakiri, and Preah Vihear experience recurring fire incidents along forest-edge zones. Floodplain forests surrounding the Tonle Sap Lake grow increasingly susceptible to fire when seasonal water levels drop significantly. Climate variability, particularly El Niño conditions, can intensify drought stress and extend the fire season across these vulnerable landscapes.

Transboundary Dimensions

Cambodia occupies a dual position as both a source and a recipient of transboundary smoke in the Mekong sub-region. Regional monitoring by the ASEAN Specialized Meteorological Centre ASMC shows recurring hotspot clusters across Cambodia, Lao PDR, Myanmar, Thailand, and Viet Nam, particularly during the January–December to May–April dry season period. This transboundary dimension strengthens the importance of closely aligning Cambodia's IF-HFSLM with the ASEAN Investment Framework for Haze-Free Sustainable Land Management (AIF-HFSLM).

For more than three decades, ASEAN countries have experienced recurring forest and land fires that generate dense smoke haze affecting both national and cross-border areas. These fires create significant environmental, social, and economic impacts across the region. Figure 1.2 presents the five-year fire hotspot accumulated fire hotspots over 2020–2024 (cumulative count, all confidence levels) density map for 2020 to 2024, highlighting major fire-prone areas in mainland and maritime

Southeast Asia.⁵⁵ This density map was produced based on the concentration of accumulated hotspots with all confidence levels, fall within an area, and not average hotspot data values.

This regional pattern is consistent with findings from the FGDs conducted in Cambodia in January 2026, where stakeholders identified agricultural residue burning, land clearing for farming, forest fires linked to hunting activities, and community waste burning as the main drivers of haze. These findings suggest that Cambodia's fire risk reflects a broader regional pattern where dry season land management and agricultural burning contribute to recurring fire hotspots.²

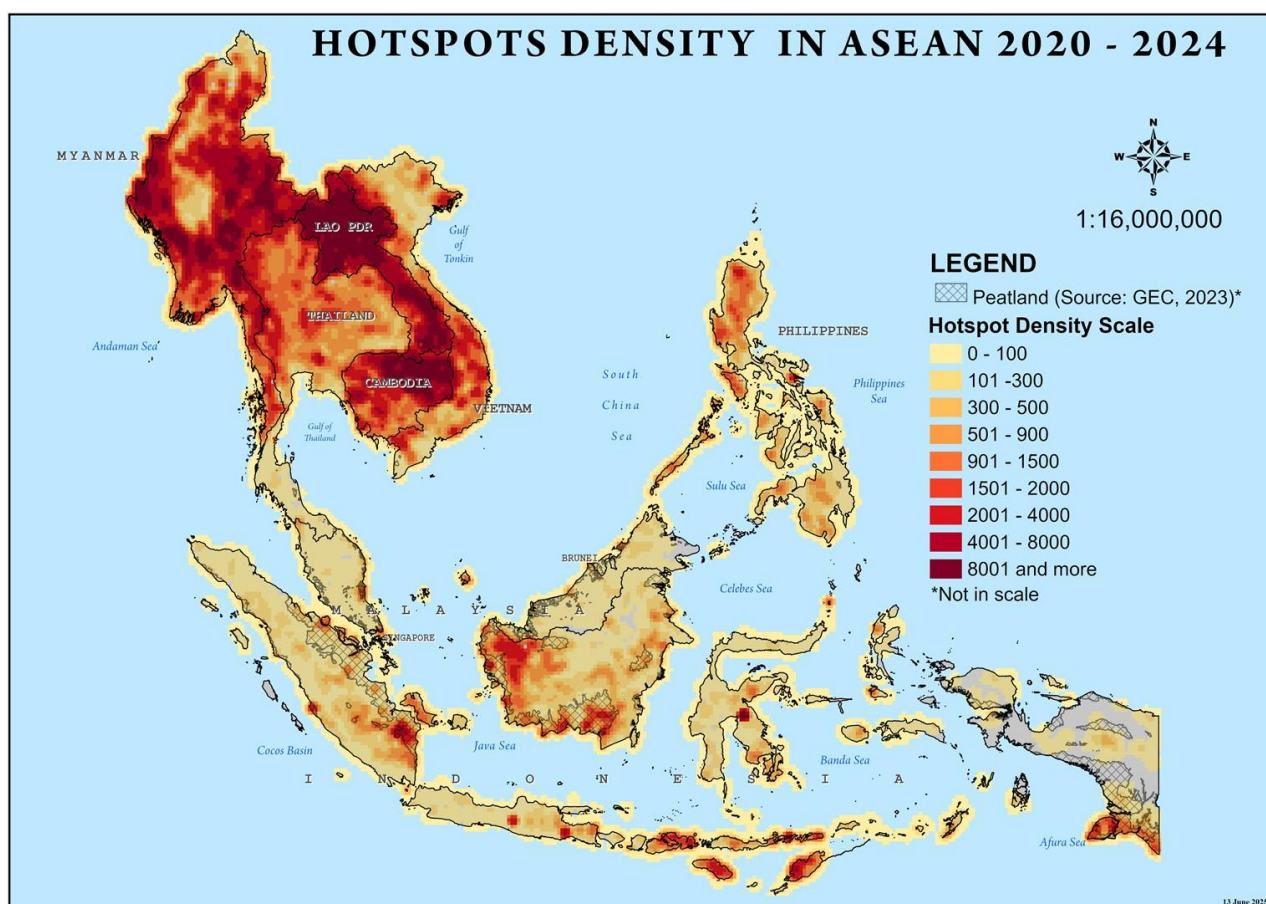


Figure 1.2. Fire hotspot density across ASEAN, 2020–2024. Source: Global Environment Centre (GEC).

The Fire Weather Index (FWI) map from the ASEAN Fire Danger Rating System for 4 February 2026, from the Malaysian Meteorological Department (MET Malaysia) indicates that much of Mainland Southeast Asia was experiencing high to extreme fire danger conditions during the dry season. Cambodia appears largely within the high-risk category, suggesting that vegetation and agricultural landscapes were becoming sufficiently dry for fires to ignite and spread if burning occurs (Figure 1.3).⁵⁶ In contrast, some eastern coastal areas show lower fire danger due to higher humidity and rainfall conditions.

These observations are consistent with the results of the national FGDs, where stakeholders identified agricultural residue burning, land clearing, forest fires related to hunting or resource collection, and community waste burning as the main drivers of haze in Cambodia.³ Participants also noted that burning of rice straw between cropping cycles is common because farmers have limited

time between harvest and the next planting period, which encourages rapid field clearing through burning.³ The FGDs further highlighted that provinces surrounding the Tonle Sap basin and northeastern upland regions such as Mondulakiri, Ratanakiri, Preah Vihear, and Battambang are particularly exposed to fire risks during the dry season.³

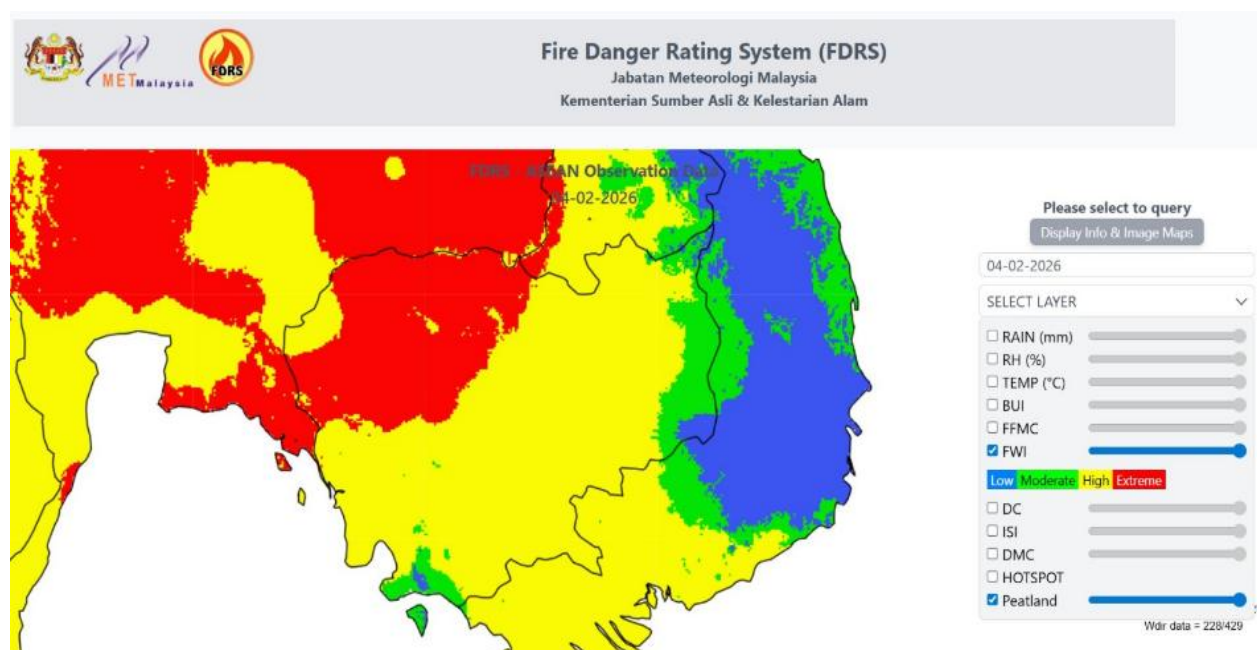


Figure 1.3: FWI across Mainland Southeast Asia, 4 February 2026. Yellow and red indicate high to extreme fire danger. Cambodia shows high risk, consistent with FGD findings on agricultural burning and forest fires as key haze drivers. Source: MET Malaysia; National FGDs, 23 January 2026.

1.1.5 Supplementary Hotspot Analysis: ASMC and FDRS Data Sources

This sub-section supplements the province-level fire-risk classification in Table 1.1 with two additional analytical lenses drawn from regional data sources adopted under the ASEAN Haze-Free Roadmap: (i) the ASEAN Specialised Meteorological Centre (ASMC) consolidated hotspot dataset and (ii) the ASEAN Fire Danger Rating System (FDRS) operated by MET Malaysia.

ASMC consolidated hotspot data. The ASEAN Specialised Meteorological Centre publishes a daily consolidated hotspot dataset, drawing primarily on VIIRS satellite observations consolidated across ASEAN Member States (ASMC, 2025)¹². For Cambodia, the ASMC dataset is the reference source adopted by MoE for IF-HFSLM monitoring purposes. The 2020–2024 cumulative pattern shows hotspot concentration in the eight Tier 1 provinces, with a multi-year decreasing trend, while seasonal hotspot activity remains elevated during peak dry-season months (January–April).

Provincial cumulative hotspot pattern. Cumulative hotspot counts over 2020–2024, drawn from the ASMC dataset, broadly track the qualitative risk classification in Table 1.1, with the higher cumulative concentrations observed in the northeastern forest-edge provinces (Mondulakiri, Ratanakiri, Preah Vihear, Stung Treng) and the Tonle Sap rice belt (Kampong Thom, Battambang, Banteay Meanchey). Two provinces – Takeo and Svay Rieng – record lower cumulative hotspot counts but remain classified as HIGH risk due to high agricultural intensity, high agricultural intensity and concentrated seasonal residue burning, and transboundary haze influence; this nuance is discussed in the footnote to Table 1.1. In addition, annual hotspot counts and cumulative hotspot density patterns are presented for different analytical purposes and should not be interpreted as directly comparable metrics.

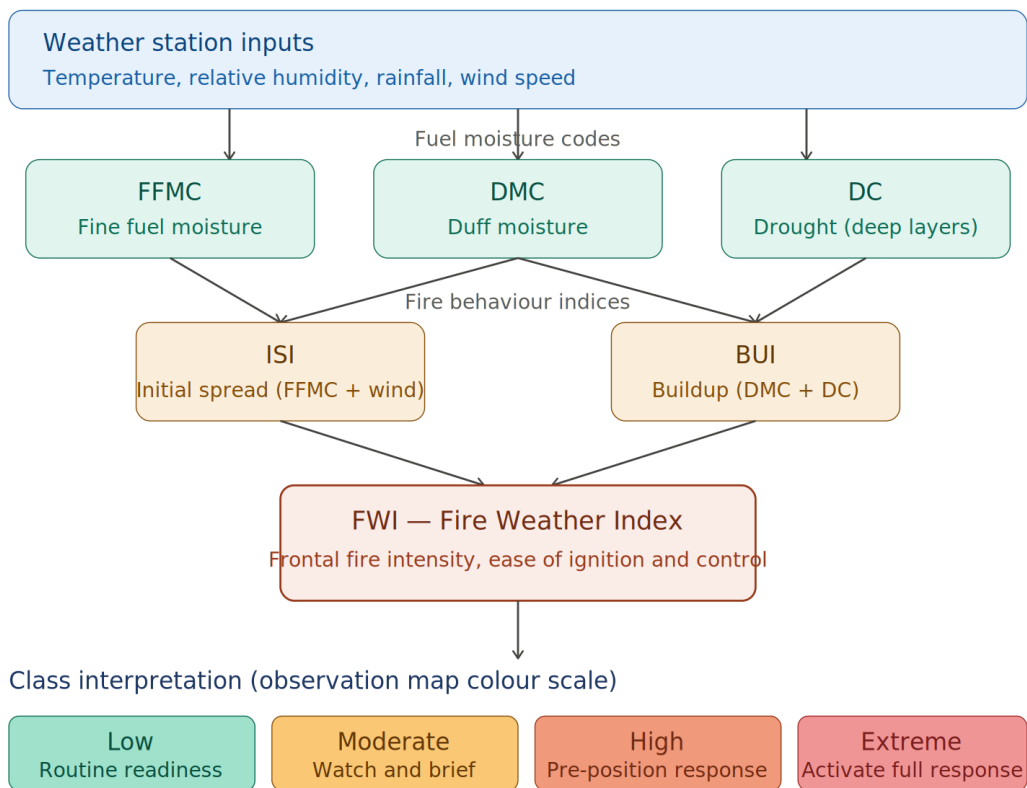
ASEAN FDRS as an operational monitoring tool. The ASEAN Fire Danger Rating System (FDRS), operated by MET Malaysia (Figure 1.4) under the ASEAN Sub-Regional Climate Centre arrangement, provides daily Fire Weather Index (FWI) outputs for Cambodia as observation (current day) and forecast (up to 7 days). FDRS does not produce accumulated or historical FWI for a given period; rather, it is designed as a near real-time operational tool for fire prevention and preparedness. Cambodia's IF-HFSLM monitoring framework (Section 10) will integrate the FDRS observation and 7-day forecast layers as the primary early-warning input, with ASMC cumulative hotspot data used for trend analysis (Figure 1.5).

Data limitations and ground-truthing. Satellite-derived hotspot data captures only thermal anomalies detected during satellite pass-times, which means that small, short-duration, and early-morning or late-evening burns may not be consistently detected. The IF-HFSLM monitoring framework therefore complements ASMC and FDRS data with ground-based monitoring through community fire watch networks and MoE-GDNPA field patrol logs. This combined approach is intended to reduce the under-detection bias and improve the reliability of province-level fire-risk classification.

Full bibliographic citations for ASMC and MET Malaysia FDRS are provided in the References section (Ref. 12 and 56).

FDRS observation portal (current day)

MET Malaysia, ASEAN regional coverage including Cambodia



Layers selectable on portal: FWI, ISI, DC, DMC, FFMC, BUI, Humidity, Temperature, Precipitation

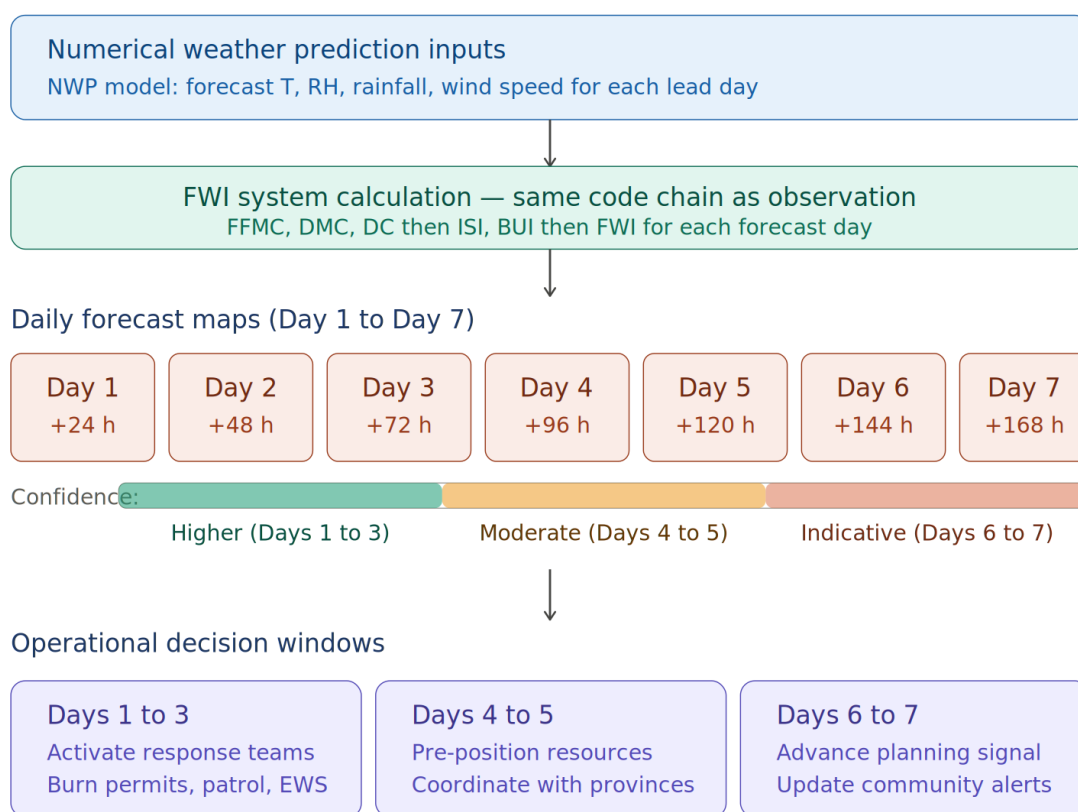
Source: MET Malaysia FDRS, <https://myclimate.met.gov.my/fdrsWmsObsAseanMetPortal>

FDRS Layer	What the Layer Measures	Class Range
FFMC	Fine Fuel Moisture Code – surface litter and fine fuel ignition risk	Low / Moderate / High / Very High / Extreme
DMC	Duff Moisture Code – sub-surface organic layer moisture	Low / Moderate / High / Very High / Extreme
DC	Drought Code – deep soil and long-term drought conditions	Low / Moderate / High / Very High / Extreme
ISI	Initial Spread Index – expected rate of fire spread	Low / Moderate / High / Very High / Extreme
BUI	Build-Up Index – total fuel available for combustion	Low / Moderate / High / Very High / Extreme
FWI	Fire Weather Index – composite index of overall fire intensity potential	Low / Moderate / High / Very High / Extreme

Figure 1.4. FDRS Observation Portal – Fire Weather Index data flow for the current day. The portal layers are FFMC, DMC, DC, ISI, BUI and FWI on an ASEAN map, with class interpretation Low to Extreme. Source: MET Malaysia FDRS [56].

FDRS forecast portal (up to 7 days ahead)

MET Malaysia, ASEAN regional coverage including Cambodia



Layers selectable per day: FFMC, DMC, DC, ISI, BUI, FWI, Precipitation, Humidity, Temperature

No accumulated or historical FWI is produced — each portal shows one day only (current or forecast)

Source: MET Malaysia FDRS, <https://myclimate.met.gov.my/fdrsWmsNwpAseanMetPortal>

Forecast Day	Time Horizon	Operational Use for HFSLM	Forecast Confidence
Day 1	+24 hours	Operational fire-response readiness; same-day patrol mobilisation	Highest
Day 2	+48 hours	Provincial alert dispatch; community warning systems	High
Day 3	+72 hours	Pre-positioning of fire-suppression resources	High
Day 4	+96 hours	Weekly planning for community fire-prevention activities	Moderate
Day 5	+120 hours	Provincial coordination meetings and resource planning	Moderate
Day 6	+144 hours	Indicative trend signal for seasonal preparedness	Indicative
Day 7	+168 hours	Indicative trend signal for seasonal preparedness	Indicative

Figure 1.5. FDRS Forecast Portal – 7-day Fire Weather Index forecast. Each day from +24 h to +168 h is rendered as a separate map; no accumulated or historical FWI is produced. Confidence is highest at Days 1–3 and indicative at Days 6–7. Source: MET Malaysia FDRS [56].

1.2 Impacts on Health, Economy, and Climate

Land and forest fires in Cambodia generate widespread negative impacts that extend far beyond the burning sites themselves. The infographic below summarises the four principal impact channels, health, economy, climate, and ecosystem that frame the rationale for HFSLM investment. Each channel is detailed in the sub-sections that follow.

PM2.5	>52K	Dual Impact	Soil Loss
Primary health pollutant from biomass burning	Years of life lost estimated in Mekong region from haze	Air quality and climate mitigation benefits	Long-term fertility decline from repeated burning

Health Impacts

Seasonal haze exposure raises the risk of respiratory illness, cardiovascular disease, eye irritation, and stress-related conditions among affected populations. During the consultations, participants identified health impacts as the most immediate and visible consequence of Cambodia's recurring haze episodes.³ Children, pregnant women, elderly populations, and people living with chronic illnesses face the greatest vulnerability. Outdoor farm workers and residents of peri-urban areas face heightened exposure during the peak burning months of January to April.¹³ In addition to direct health impacts, recurring haze episodes create broader socioeconomic pressures through increased healthcare expenditure, reduced labour productivity, school disruptions, and declining quality of life. These impacts impose hidden economic costs on households, local communities, and public institutions.

The Second National Stakeholder Consultative Workshop (19 March 2026) reinforced these findings. Participants specifically noted that the normalisation of persistent respiratory symptoms among children during haze episodes – including chronic coughing – constitutes a serious public health concern that the country's IF must address explicitly. HEKS/EPERHilfswerk der Evangelischen Kirchen Schweiz / Entraide Protestante Suisse (HEKS/EPER) recommended that evidence-based research documenting the negative health impacts of burning on children and pregnant women be

developed to strengthen the case for farmer behaviour change and build investor confidence in health-linked interventions (GEC & GGGI, 2026)³¹.

Economic and Productivity Impacts

Air pollution drags down labour productivity through illness, rising healthcare costs, and physical incapacity. For smallholder farmers, burning offers short-term convenience at the cost of long-term soil fertility declines and falling productivity. The World Bank has documented significant economic costs from environmental degradation in Cambodia's agriculture-dependent rural economy.¹⁴ Tourism-dependent destinations such as Siem Reap are also affected, with visitor activity declining during severe haze episodes.

Climate Impacts

Open burning is a direct and measurable contributor to greenhouse gas (GHG) emissions. Rice straw burning generates methane (CH₄) and nitrous oxide (N₂O), both gases with high global warming potential. Under Cambodia's NDC 3.0 (Table 1.4), the Forestry and Other Land Use (FOLU) sector is identified as the primary mitigation area, accounting for 59.1% of expected emission reductions. Reducing agricultural burning therefore delivers dual benefits: improved air quality and measurable GHG mitigation, both of which are central to Cambodia's climate commitments.⁵ Additionally, HFSLM should also be understood as a climate adaptation strategy. Improved residue management, forest restoration, wetland conservation, and regenerative agricultural practices can strengthen ecosystem resilience, improve water retention, reduce drought vulnerability, and enhance long-term agricultural sustainability under changing climate conditions.

Table 1.4: Cambodia NDC 3.0 – GHG Reduction Targets by Sector (2035 BAU Baseline). Source: Ministry of Environment, 2025.

Sector	2035 BAU (MtCO ₂ e)	Unconditional Target (MtCO ₂ e)	Conditional Target (MtCO ₂ e)	HFSLM Contribution
Energy	45.6	36.5 (-20%)	22.2 (-51%)	Indirect (biomass energy)
IPPU	9.4	7.6 (-19%)	7.2 (-24%)	Minor
Agriculture	42.4	42.4 (0%)	40.2 (-5%)	AWD; residue management
FOLU	27.0	19.0 (-30%)	-13.0 (-148%)	DIRECT – burning reduction; forest restoration
Waste	9.3	6.5 (-30%)	3.9 (-59%)	Open burning reduction
TOTAL	133.7	112.1 (-16%)	60.4 (-55%)	—

1.3 Who Is Affected

The burden of haze falls unevenly across Cambodia's population. Smallholder farmers, Indigenous Peoples and Local Communities (IPLC), rural enterprises, and women bear disproportionate exposure while simultaneously facing structural barriers to the finance, technology, and markets needed to move away from burning practices (Table 1.5). ³

Table 1.5. Groups Disproportionately Affected by Haze in Cambodia

Group	Exposure / Impact	Structural Barrier	HFSLM Opportunity
Smallholder rice farmers	Direct smoke exposure; soil fertility loss; productivity decline over time	No mechanisation access; tight planting windows; no straw markets	Bundled mechanisation credit + offtake contracts
Indigenous Peoples (NE provinces)	Forest fire exposure; loss of forest resources and NTFPs	Weak land tenure; limited institutional support; remote location	Community fire patrol + livelihood enterprise finance
Women smallholders	Outdoor field exposure; household cooking pollution; health vulnerability	Limited land titles; financial exclusion; mobility constraints Cross-sector consultation findings clarified that land in Cambodia exists under hard titles and soft titles. Financial institutions will only accept hard titles as collateral, significantly limiting smallholder access to formal financing.	Gender-responsive credit; women-led residue enterprises
Rural SMEs	Operational inefficiency; lost residue value chain opportunity	No access to concessional finance; no market aggregation	Blended finance facility for bioeconomy SMEs
Urban / peri-urban communities	Ambient PM2.5 during burning season	No direct control over burning practices upstream	Traceability and compliance standards for supply chains

1.4 What Is Already Being Done

Cambodia already possesses a solid policy and institutional foundation for HFSLM (Table 1.6). However, existing policies remain fragmented across sectors and institutions, with limited integration between agriculture, climate change, forestry, disaster risk reduction, air quality management, and sustainable finance. Rather than creating parallel systems, the country's IF-HFSLM therefore serves as a coordination and investment platform that links builds on these national existing bases to accelerate implementation.

Table 1.6: Existing Policy and Programme Foundation for HFSLM in Cambodia

Policy / Programme	Lead Agency	HFSLM Relevance	Status
Pentagonal Strategy Phase I	RGC	Green growth and environmental sustainability as national development pillars	Active – adopted August 2023

Policy / Programme	Lead Agency	HFSLM Relevance	Status
NDC 3.0 (2025)	MoE	55% conditional GHG reduction by 2035; FOLU dominant sector; rice straw 75% collection target	Approved
Law on Investment / QIP Qualified Investment Project (QIP)	Investment promotion mechanism offering tax incentives for qualifying projects	Corporate income tax holidays; import duty exemptions for equipment	IF activates Qualified Investment Project (QIP) for HFSLM enterprises; fiscal incentive package
Long-Term Strategy for Carbon Neutrality	MoE	Net-zero pathway by 2050; forest conservation and low-emission agriculture	Adopted 2021
Circular Strategy on Environment 2023–2028	MoE	Circular bioeconomy, clean production, waste reduction – directly supports residue utilisation	Active
Cambodia Climate Change Strategic Plan 2024–2033	MoE	Integrated climate governance, MRV, institutional coordination	Active – adopted 2025
Community Protected Area Programme	MoE / GDNPA	Community-based forest protection and fire co-management	Active
Sustainable Finance and Green Bond Initiative	NBC / SERC	Emerging platform for HFSLM finance taxonomy and green capital mobilisation	In development
Environmental and Natural Resources Code (2023)	MoE	Statutory framework for environmental governance, permitting, and enforcement; consolidates resource management and green economy obligations	Active – enacted 2023
National Energy Efficiency Policy 2022–2030 (NEEP)	MME	Target: 19% reduction in total energy consumption vs. BAU by 2035; biomass energy as a resource efficiency pathway	Active – adopted Nov 2022
ASEAN Agreement on Transboundary Haze Pollution (AATHP) Membership	MoE	Regional haze cooperation, monitoring, and transboundary governance	Ongoing
Operations Manual for Article 6 of the Paris Agreement (2024)	MoE	Establishes Cambodia's framework for carbon trading and finance under Article 6 of the Paris Agreement, enabling internationally transferred mitigation outcomes (ITMOs), carbon credit generation from REDD+, avoided burning, afforestation, and sustainable wood energy, and	Adopted 2024

Policy / Programme	Lead Agency	HFSLM Relevance	Status
		opening pathways for results-based carbon market revenue to support HFSLM investments (NDC 3.0, 2025; MoE, 2024)	
National Biodiversity Strategy 2023–2030	Biodiversity conservation and ecosystem restoration targets	30% protected area coverage; forest restoration; no-net-loss policy	IF Objective 3 restoration investments align with biodiversity targets
National Forest Programme (NFP) 2010–2029	Forestry Administration / MAFF	Provides long-term strategic framework for sustainable forest management, forest conservation, and community forestry development.	Active
Agricultural Sector Strategic Development Plan (ASDP)	MAFF	Promotes climate-smart agriculture, sustainable intensification, and improved land management practices relevant to reducing residue burning.	Active
National Energy Efficiency Policy 2022–2030 (NEEP)	Ministry of Mines and Energy	Targets 19% reduction in national energy consumption by 2035 and supports efficient biomass utilization, including agricultural residues as energy resources.	Active – adopted Nov 2022
National Cooling Action Plan (NCAP)	Ministry of Environment	Supports climate mitigation and energy efficiency strategies that intersect with sustainable biomass and energy systems.	Active
ASEAN Investment Framework for Haze-Free Sustainable Land Management (AIF-HFSLM)	ASEAN Secretariat	Regional investment platform mobilising finance for sustainable land management and haze reduction across ASEAN Member States.	Adopted 2023
ASEAN Guidelines on Peatland Fire Management	ASEAN Secretariat	Provides guidance on prevention and management of peatland fires across ASEAN landscapes.	Active

Existing GCF Portfolio in Cambodia

Cambodia has an established and growing portfolio of Green Climate Fund (GCF) investments that demonstrates the country's track record with GCF processes and provides a strong foundation for the country's IF-HFSLM pipeline (Table 1.7a). As of March 2026, Cambodia's GCF portfolio comprises two components: a readiness programme covering 11 grants worth approximately USD 4.73 million, and nine full funding proposals (including multi-country projects where Cambodia is a primary beneficiary) valued at more than USD 785 million in total GCF financing. This confirms that Cambodia has working relationships with GCF-accredited entities including ADB, FAO, IFAD, GGGI,

NCDD, UN-Habitat, and UNIDO – all of which are relevant to the IF-HFSLM pipeline (Cambodia NDA, accessed 25 March 2026; GCF, 2026).

Table 1.7a. Cambodia GCF Readiness Programme Portfolio (Source: Cambodia NDA; GCF, accessed 25 March 2026)

Ref	Project Title	Implementing Entity	Approved Amount
KHM-RS-001	NDA Strengthening and Country Programming	NDA/MoE	USD 259,925
KHM-RS-002	Promoting Green Mobility through Electric Motorcycles in Cambodia	GGGI	USD 200,679
KHM-RS-003	Readiness for Enhancing Access to Green Finance in Cambodia	NDA/MoE	USD 416,497
KHM-RS-004	Technology Needs Assessment for Climate-Friendly Technology in Cambodia SEZs	UNIDO	USD 213,989
KHM-RS-005	Support to Direct Access Entity to Meet Accreditation Conditions	NCDD Secretariat	USD 252,645
KHM-RS-006	Enhanced Actions via Sustainable Waste Management in Coastal Cities	UN-Habitat	USD 272,631
KHM-RS-007	Climate Technology Deployment Roadmap for E-Mobility Ecosystem	NDA/MoE	USD 205,407
KHM-RS-008	Resilient Recovery Rapid Readiness Support	NDA/MoE	USD 272,729
KHM-RS-009	Evidence-Based National Adaptation Plan (NAP) Process, Phase 1	NDA/MoE	USD 1,602,097
KHM-RS-010	Capacity Building and Accreditation Support for Private Banks (On-lending)	GGGI	USD 553,230
KHM-RS-011	Sub-national Climate Fund Aligned with LGCC-LoCAL	NCDD Secretariat	USD 446,345
PwC	Direct Access Entity Support	PwC	USD 35,343
TOTAL	Cambodia GCF Readiness Portfolio (11 grants + 1 support)		~USD 4.73 million

Beyond readiness support, Cambodia is a beneficiary of nine GCF-funded projects covering climate-resilient agriculture, climate finance facilities, community resilience, technology innovation, sub-national climate governance, and social resilience through education (Table 1.7b). Several of these projects are directly relevant to HFSLM investment priorities and should be cross-referenced to avoid duplication and identify co-financing opportunities.

Table 1.7b. GCF Full Funding Projects Involving Cambodia (Source: Cambodia NDA; GCF, accessed 25 March 2026)

Ref	Project Title	Implementing Entity	GCF Financing
FP076	Climate-Friendly Agribusiness Value Chains Sector Project	ADB	USD 40,000,000
FP199	PEARL: Ecologically-Sound Agriculture and Resilient Livelihood, Northern Tonle Sap Basin	FAO	USD 36,231,981

Ref	Project Title	Implementing Entity	GCF Financing
FP156	ASEAN Catalytic Green Finance Facility (ACGF): Green Recovery Program	ADB	USD 300,000,000
FP215	Community Resilience Partnership Program	ADB	USD 120,000,000
FP240	Collaborative R&D Programme for Climate Technopreneurship Innovation	KDB	USD 104,471,000
SAP058	Local Governments and Climate Change III (LGCC-3)	NCDD	USD 9,783,456
FP228	Cambodian Climate Financing Facility	KDB	USD 54,959,050
FP270	Climate Adaptive Irrigation and Sustainable Agriculture for Resilience (CAISAR)	IFAD	USD 80,000,000
FP274	Building Climate Resilience of Children and Communities through Education (BRACE)	Save the Children Australia	USD 40,751,264
TOTAL	Cambodia GCF Project Portfolio (9 projects, incl. multi-country)		>USD 785 million

Note: FP156 (ACGF), FP215, and FP240 are multi-country projects. Cambodia is a key beneficiary. Three global/multi-country projects also appear in Cambodia's GCF listing but are not Cambodia-specific: FP152 (Global Subnational Climate Fund – Equity), FP151 (Global Subnational Climate Fund – TA Facility), and FP258 (Early Warnings for All). Source: Cambodia NDA, accessed 25 March 2026.

These existing GCF investments are directly relevant to the country's IF-HFSLM pipeline in the following ways. FP076, FP199, and FP270 establish Cambodia's track record in GCF-funded agriculture and land management, building credibility for HFSLM agriculture concepts (#01, #09). FP156 (ACGF Green Recovery) and FP228 (Cambodian Climate Financing Facility) demonstrate that Cambodia can access large-scale GCF blended finance instruments, directly supporting the IF's Climate Finance Facility concept (#09). SAP058 (LGCC-3) confirms NCDD's capacity as a Direct Access Entity for sub-national climate governance, which is essential for subnational HFSLM enforcement and community programme delivery. FP215 (Community Resilience Partnership) and FP274 (BRACE) demonstrate GCF's willingness to fund community-level and social resilience programmes in Cambodia, supporting the IF's community fire management and GEDSI components (#03, #13). Collectively, these projects demonstrate that Cambodia already has active GCF relationships in all five of the portfolio's thematic areas, which strengthens the country's position to submit new IF-HFSLM concept notes in the near term.

1.5 Key Bottlenecks to Investment

Despite this policy foundation, several structural barriers continue to hold back progress (Table 1.8). During the focus group discussions (FGDs), participants emphasised that haze reduction is not solely an enforcement issue. It requires coordinated investment across mechanisation, markets, finance, governance, and data systems.³

Table 1.8: Key Bottlenecks Identified by Consultation Stakeholders (FGD 1–3, 23 January 2026)

Constraint Category	Specific Barrier	Investment Implication
Operational constraints	4–5 day harvest-replanting window; no baler access; weak rural logistics	Mechanisation and aggregation finance needed at scale
Financial barriers	Small ticket sizes; high perceived risk; no collateral among smallholders; limited DFIDevelopment Finance Institution (DFI)familiarity with HFSLM models	Blended finance and guarantees required to de-risk
Market development	Nascent biomass markets for compost, biochar, paper; no buyer commitments; weak offtake chains	Market facilitation and supply-chain anchor partnerships
Institutional coordination	Policy fragmented across MoE, MAFF, MEF; no investment platform; subnational capacity gaps	Inter-agency task force; subnational capacity building
Data and MRV	Hotspot data not integrated with land-use or climate databases; no standardised MRV for climate finance	Digital MRV platform; ASEAN-aligned monitoring systems
Policy and regulatory gaps	Unclear legal status of sub-national entities (e.g. MRC) for borrowing or receiving investor funding; no carbon credit ownership framework; farmers unable to finance alternative assets (balers, composting equipment); rice price guarantee schemes may limit borrowing/investment capacity for smallholders	Policy reform for Article 6 carbon credit ownership; asset financing and leasing mechanisms for smallholders; review of rice price guarantee interaction with green investment incentives; clarify legal borrowing status of relevant entities

Stakeholder validation at the March 2026 workshop identified two additional structural bottlenecks not captured in the analysis above. First, infrastructure barriers to residue collection: some farming communities lack road access, which prevents collectors from reaching them to collect agricultural residues such as rice straw. Even where roads exist, collection service fees are often unaffordable for smallholders. This infrastructure constraint must be addressed in the design of residue management investments and collection logistics systems. Second, a structural mismatch between available financing instruments and smallholder needs: many formal financing sources do not provide micro-credit products appropriate for smallholder farmers. Larger concessional loans typically require strong financial profiles and collateral that most vulnerable farmers cannot meet. The IF financing strategy must close this access gap through dedicated micro-financing windows or cooperative lending models.

Chapter 2. HFSLM Goal, Targets, and Alignment

2.1 National Country's HFSLM Goal

Cambodia National HFSLM Goal

By 2035, Cambodia will significantly reduce land and forest fires and eliminate harmful open burning in priority agricultural and forest landscapes, while enhancing resilient, inclusive livelihoods through haze-free sustainable land management and investment, in alignment with the ASEAN Haze-Free (2030) Ambition and Cambodia's NDC 3.0 commitments.

Within this framework, Haze-Free Sustainable Land Management (HFSLM) translates into four practical and investable transformations for Cambodia:

- No-burn land preparation and residue management in agriculture, enabled by mechanisation and residue utilisation markets;
- Improved land management practices that reduce fire risk, soil loss, and greenhouse gasGHG emissions;
- Forest and protected area fire prevention and restoration, including community-based management models; and
- Governance and finance systems that steer capital away from harmful burning and toward verified HFSLM outcomes.

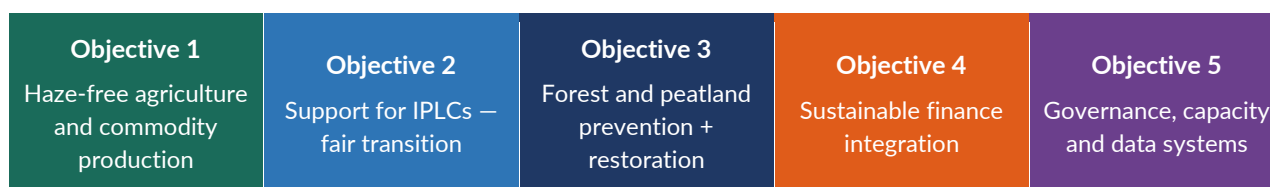


Figure 2.1. Five ASEAN AIF-HFSLM Objectives Underpinning Cambodia's IF Goal. Source: ASEAN Secretariat (2023). AIF-HFSLM 2023–2035.

2.2 Targets and Indicators

Multi-stakeholder deliberations in March 2026 recommended the following revisions to the MRV Indicator Framework in Chapter 10: (1) PM2.5 air quality should be added as a new indicator to capture public health impacts; (2) the hotspot reduction target of 40% should be treated as indicative pending confirmation of the AIF-HFSLM baseline at the June 2026 TWG- and MSC-Mekong meetings in Lao PDR; (3) the 75% rice straw reuse target under NDC 3.0 should be revised to a more realistic level, as participants identified logistical constraints, lack of financial incentives, and weak data systems as major barriers; and (4) the implementation timeline of the IF should be realigned from 2030 to 2035 in line with NDC 3.0.

*Table 2.1. Cambodia HFSLM Targets and Indicators 2023–2035 (aligned with NDC 3.0 and AIF-HFSLM). [*Please find the full name of the abbreviated words in the Abbreviation List]*

Category	Indicator	Baseline (2023–24)	Target 2035	Monitoring Source	Frequency
Fire reduction	Dry-season hotspots in Tier 1 provinces	TBC by MoE (2023–24)	–40% vs. 2023–24 baseline (indicative, pending confirmation of the AIF-HFSLM baseline at the ASEAN Ad-Hoc Task Force (ATA)AATHP's Technical Working Group (TWG)- and Ministerial Steering Committee (MSC)- Mekong meetings scheduled for June 2026 in Lao PDR)	ASMC; NASA FIRMS; MoE app	Monthly
Residue management	Ha rice under verified no-burn residue management	Baseline TBC by MAFF	300,000 ha by 2035	MAFF; satellite; field	Annual
Rice straw	% rice straw collected for productive reuse	<25% currently	75% reuse (NDC 3.0)	MAFF; value chain	Annual
Community coverage	Ha under community fire management	TBC	1,000,000 ha by 2035	Community Protected Area (CPA) records; MoE	Annual
Emissions (FOLU)	GHG reduction from FOLU (MtCO ₂ e)	27.0 BAU 2035	–40 MtCO ₂ e conditional by 2035	GHG inventory; BTR	Biennial
Finance mobilised	HFSLM public+private finance committed (USD)	~0 currently	USD 2100M+ by 2035	MEF; DFI; NBC tracking	Annual
Finance instruments	Active HFSLM financial instruments	0	≥5 by 2028	NBC/SERC/MEF	Annual
Governance	HFSLM coordination	Not yet established	Operational Q2 2026	MoE GDNPA	Milestone

Category	Indicator	Baseline (2023–24)	Target 2035		Monitoring Source	Frequency
	mechanism operational					
Supply chains	Commodity supply chains with no-burn standards	0	≥3 chains by 2028		MAFF; supply-chain reports	Annual
Inclusion	Women/IPLC/SME beneficiaries		TBD	Annual increase	MoE/MoWA	Annual

2.3 Alignment with National Plans

Cambodia's IF-HFSLM is designed to complement, not duplicate, the country's existing policy architecture. Table 2.2 maps each major national framework to its direct HFSLM linkages, demonstrating how the IF operationalises commitments already embedded in national climate, environment, agriculture, and finance policies. This alignment confirms that HFSLM implementation can leverage existing institutional mandates, reporting systems, and budget mechanisms rather than requiring parallel structures.

Table 2.2. HFSLM Alignment with Cambodia's National Policy Frameworks

National Framework	Lead	Key Commitment	HFSLM Link	Status
NDC 3.0 (2025)	MoE	55% conditional GHG reduction by 2035; FOLU sector –148% conditional; rice straw 75% reuse; halve deforestation	Burning reduction = direct FOLU mitigation; IF pipeline operationalises NDC commitments	Submitted August 2025
Long-Term Strategy for Carbon Neutrality	MoE	Net-zero by 2050; forest conservation; low-emission agriculture; ≥1M saplings distributed	No-burn transitions and restoration accelerate carbon neutrality pathway	Adopted 2021
Circular Strategy on Environment 2023–2028	MoE	Clean production; waste reduction; circular bioeconomy; green zones	Residue valorisation (biochar, compost, packaging) directly implements mandate	Active

National Framework	Lead	Key Commitment	HFSLM Link	Status
Cambodia Climate Change Strategic Plan (CCCSP) 2024–2033	MoE	Integrated climate governance; MRV systems; institutional coordination	HFSLM MRV feeds into CCCSP monitoring and ETF transparency reporting	Active – adopted 2025
Pentagonal Strategy Phase I	RGC	Green growth; environmental sustainability as national development pillars	HFSLM positioned as green investment, not compliance cost	Active – adopted August 2023
Agriculture Strategy (MAFF)	MAFF	Alternate Wetting and Drying (AWD) 100,000 ha by 2035; climate-smart agriculture; agroforestry; mechanisation	No-burn supply chains and mechanisation aligned with MAFF climate-smart mandate	Active
Disaster Risk Reduction (DRR) Framework	NCDM / MoI National Committee for Disaster Management / Ministry of Interior (NCDM / MoI)	Early warning; community preparedness; climate hazard management	Fire monitoring, EWS, and community response strengthen DRR architecture	Active
Law on Investment – Qualified Investment Project (QIP)	CDC / MEF	Tax holidays and import duty exemptions for qualifying green investments	HFSLM equipment and green enterprises potentially eligible for QIP incentives	Active
National Biodiversity Strategy 2023–2030	MoE	Protected area management; ecosystem services; NBSAP targets	Forest-edge fire prevention and restoration support biodiversity commitments	Active
Environmental and Natural Resources Code (2023)	MoE	Comprehensive statutory framework for environment, natural resources, and green economy; consolidates environmental permitting, compliance, and enforcement	Provides legal basis for no-burn standards, environmental compliance obligations, and HFSLM green finance instrument design	Active – enacted 2023
National Energy Efficiency Policy 2022–2030 (NEEP)	MME Ministry of Mines and Energy (MME)	National target: reduce total energy consumption by at least 19% vs. BAU by 2035; sectoral targets:	Biomass energy from agricultural residues (biochar, syngas, pellets) reduces fossil	Active – adopted Nov 2022

National Framework	Lead	Key Commitment	HFSLM Link	Status
		industry –20%, commercial buildings – 25%, residential –34%, transport –5%	energy demand and supports NEEP industrial and residential targets	

NDC 3.0 – Sectoral GHG Targets and HFSLM Contribution

Cambodia's NDC 3.0 (2025) commits to a 16% unconditional and 55% conditional GHG emissions reduction by 2035 against the BAU baseline. The FOLU sector carries the largest mitigation ambition at –148% conditional reduction, supported by halved deforestation, afforestation, and improved agricultural residue management. Table 2.3 presents the sectoral breakdown and highlights where HFSLM investments directly contribute to NDC targets, particularly across the FOLU, Agriculture, and Waste sectors. The IF pipeline operationalises these commitments through bankable project concepts that translate sectoral targets into measurable mitigation outcomes.

Table 2.3. Cambodia NDC 3.0 GHG Reduction Targets by Sector. (Source: MoE, 2025).

Sector	2035 BAU (MtCO ₂ e)	Unconditional	Conditional	HFSLM Relevance
Energy	45.6	36.5 (–20%)	22.2 (–51%)	Indirect via biomass energy and avoided burning
Industrial Processes and Product Use (IPPU)	9.4	7.6 (–19%)	7.2 (–24%)	Minimal
Agriculture	42.4	42.4 (0%)	40.2 (–5%)	AWD; no-burn residue; NDC rice straw 75% reuse target
FOLU	27.0	19.0 (–30%)	–13.0 (–148%)	DIRECT – burning reduction, halved deforestation, afforestation
Waste	9.3	6.5 (–30%)	3.9 (–59%)	Open burning reduction; organic waste processing
TOTAL	133.7	112.1 (–16%)	60.4 (–55%)	IF directly contributes across FOLU, Agriculture, and Waste

2.4 Priority Landscapes

To focus investment where it can achieve the greatest impact, Cambodia's IF adopts a landscape-based targeting approach. Stakeholders at the January 2026 consultation applied selection criteria that included hotspot density, agricultural production intensity, proximity to protected areas, ecological importance, and investment readiness. ³

Table 2.4. Priority HFSLM Landscapes – Selection Rationale and Investment Focus (FGD 2, 23 January 2026)

Priority Landscape	Provinces	Environmental Urgency	Investment Focus	Primary Finance Sources
1. Tonle Sap Basin	Siem Reap, Battambang, Pursat, Kampong Thom, Banteay Meanchey	HIGH – rice straw; seasonal floodplain fire; freshwater biodiversity; critical Tonle Sap ecosystem	No-burn residue management; floodplain restoration; fire prevention systems	GCF, World Bank, IFAD, commercial banks
2. Northeastern Forest-Edge	Mondulkiri, Ratanakiri, Preah Vihear, Kratie	HIGH – biodiversity hotspot; recurring forest fires; IPLC communities; El Niño vulnerability	Community patrol; IPLC enterprise support; early warning; forest restoration	GCF, GEF, GBFF, IFAD, FAO
3. Intensive Rice Provinces	Prey Veng, Takeo	HIGH – densest straw burning; shortest harvest windows; highest PM2.5 intensity	Mechanisation cooperatives; aggregation hubs; circular bioeconomy enterprises	GCF, ADB, commercial banks, supply-chain finance
4. Upland Transition Zones	Kampong Cham, Kampong Speu, Stung Treng	MEDIUM-HIGH – maize/cassava residue; forest-adjacent commercial crop expansion	Residue management; compliance supply chains; regenerative agriculture	DFIs, commercial supply-chain finance, bilateral TA

Technical review at the March 2026 Second Stakeholder National Consultation confirmed the eight Tier 1 priority provinces but proposed two additional provinces for inclusion: Pursat and Kampong Chhnang. Pursat is exposed to Tonle Sap floodplain seasonal fires, and Kampong Chhnang faces agricultural residue burning pressures. The workshop recommended that these provinces be assessed for Tier 1 or Tier 2 inclusion. Additionally, participants clarified that burning of rice stubble (known as chambaeng in Khmer) should be distinguished from rice straw burning, as this distinction matters for targeting residue management interventions accurately. All fires discussed during the workshop were confirmed as man-made.

Chapter 3. The HFSLM Investment Strategy

This chapter organises Cambodia's investment strategy around the five objectives of the AIF-HFSLM. This structure ensures direct alignment between national priorities and the regional investment architecture, while providing a clear basis for project design and financing (Table 3.1).

Table 3.1. Five AIF-HFSLM Objectives translated to Cambodia's Investment Strategy. (Source: ASEAN Secretariat (2023), AIF-HFSLM 2023–2030)

OBJECTIVE	FOCUS AREA	CAMBODIA PRIORITY	INDICATIVE INVESTMENT
Objective 1	Haze-free agriculture and commodity production	Rice straw mechanisation; circular bioeconomy; no-burn supply chains	USD 225M (largest share)
Objective 2	Support for IPLCs and local communities	Community enterprises; bundled finance; IPLC fire patrol	USD 15–20M
Objective 3	Forest and peatland management	Tonle Sap restoration; NE province fire prevention; early warning	USD 80–100M
Objective 4	Sustainable finance integration	Green taxonomy; HFSLM lending tools; SERC/NBC engagement	USD 3–5M
Objective 5	Policy, governance, and capacity	Inter-agency coordination; MRV platform; enforcement support	USD 7–10M

3.1 Objective 1: Haze-Free Agriculture and Commodity Production

Because agricultural burning is Cambodia's primary domestic haze driver, Objective 1 represents the highest-return entry point for the country's IF. Consultation participants identified rice as the priority commodity for intervention, followed by maize and cassava. ⁴

Investments under this objective prioritise practical no-burn agricultural solutions that reduce open burning while improving soil health, agricultural sustainability, and farmer resilience. Priority interventions include mechanised residue management, straw incorporation, composting, service-provider models, and sustainable circular bioeconomy approaches that are technically feasible, financially realistic, and scalable within Cambodia's agricultural systems.

Table 3.2. Priority Commodity Pathways for No-Burn Investment

Commodity	Burning Scale	Investable Solutions	Market Opportunity
Rice (priority)	Est. 2–8 million tonnes straw/year; burning	Straw baler cooperatives; aggregation hubs;	Compost (soil health); biochar (carbon markets); paper/packageging (export);

Commodity	Burning Scale	Investable Solutions	Market Opportunity
	prevalent in Prey Veng, Takeo, Battambang	biochar/compost/packaging; compliance supply chains	biomass energy; building materials (straw-based boards, insulation)
Maize / Cassava	Residue burning in upland provinces; scale smaller but forest-adjacent	Mechanised residue handling; contract farming; traceable supply chains	Animal feed pellets; biomass; carbon credits from avoided burning
Plantation crops	Land clearing and maintenance burning in selected provinces	Compliance standards; sustainable land-use planning; agroforestry	ESG-compliant export premiums; green procurement

3.2 Objective 2: Support for Indigenous People and Local Communities

Achieving sustainable haze reduction depends on creating inclusive transition pathways for affected communities. Approaches that rely solely on enforcement risk displacing communities without offering viable alternatives. Community-based models can aggregate smallholder participation, reduce transaction costs, and build local ownership of no-burn solutions. ³

- Cooperative-based straw aggregation linked to circular economy enterprises;
- Community-managed mechanisation services for residue collection;
- Biochar and compost micro-enterprises through farmer groups or Community Protected Areas; and
- Community fire patrol brigades with service contracts and performance-based incentives.

The HFSLM outcomes for IPLC communities required dedicated capacity-building investment alongside financing instruments for on-site management practice changes. Priority capacity-building actions under Objective 2 include: structured skills training for IPLC households in agricultural residue management, agroforestry, and no-burn land preparation techniques; enterprise development support for community-owned biochar, compost, and non-timber forest product (NTFP) enterprises; governance and institutional capacity building to enable IPLC participation in community forest management bodies and benefit-sharing arrangements; and legal and administrative support to accelerate communal land titling processes in Monduliri, Ratanakiri, and Preah Vihear (see Section 6.3, p. 39). Regional experience confirms that capacity building is the critical enabling factor for IPLC-led haze-free land management HFSLM: Vietnam's community forest co-management programme and green contract scheme for communities to undertake agricultural activities in forest buffer, Mindoro IPLC land stewardship in the Philippines, and Dayak agroforestry systems in Indonesia – all demonstrate that communities with secure tenure, institutional capacity, and enterprise skills can successfully manage fire risk while maintaining livelihoods.

3.3 Objective 3: Sustainable Forest and Peatland Management

Investments in forest and wetland management generate multiple co-benefits, including reduced fire risk, biodiversity protection, carbon sequestration, enhanced ecosystem resilience, and strengthened climate resilience, and community-based natural resource management. Although Cambodia does

not possess extensive deep peatlands, its floodplain forests and seasonally inundated wetlands become highly fire-sensitive during prolonged dry conditions.⁴

Table 3.3. Forest and Landscape Investment Models Under Objective 3

Investment Type	Location	Financing Model	Co-Benefits
Floodplain forest restoration	Tonle Sap Basin	GCF, results-based finance, carbon markets	Carbon sequestration, fisheries, biodiversity
Community fire patrol systems	Mondulkiri, Ratanakiri, Preah Vihear	Service contracts, performance-based payments	Forest protection, IPLC livelihoods
Early warning infrastructure	All priority provinces	GCF, ADB, government co-finance	Rapid response, DRR integration
Assisted natural regeneration	Forest-edge provinces	GEF, bilateral donors, carbon credits	Forest cover, biodiversity, soil health

3.4 Objective 4: Sustainable Finance Integration

Embedding HFSLM criteria within financial systems offers a powerful mechanism to redirect capital flows at scale. Cambodia's Securities and Exchange Regulator (SERC) and the National Bank (NBC) have already initiated sustainable finance discussions, laying a foundation for HFSLM screening standards.³ Priority actions include integrating HFSLM criteria into the national green finance taxonomy, with reference to the ASEAN Taxonomy for Sustainable Finance; developing a traffic light screening system for land-use investments; and designing guarantee tools for rural SME lending. These business-driven financial mechanisms are hoped to support implementing plans and activities developed by the government moving towards achieving the country's commitments for better environmental protection, which always relying to national budget and international aids.

3.5 Objective 5: Policy, Governance, and Capacity

Effective governance underpins every element of this framework. Stakeholders at the January 2026 consultation agreed that without institutional coordination, enforcement credibility, and reliable data systems, private and public investments simply will not flow at the scale required.³ Priority governance investments include: national HFSLM coordination mechanism anchored in MoE; inter-agency investment task force; digital MRV platform; subnational enforcement capacity; and farmer awareness campaigns during dry-season periods, as well as pilot projects or activities for testing alternative management practices.

Chapter 4. Pipeline of Bankable Projects

4.1 Pipeline Overview

Through two national consultative workshops — the First Stakeholder Consultative Meeting (23 January 2026, 68 participants) and the Second National Consultative Workshop (19 March 2026, 90 participants) — a combined total of 158 stakeholders were engaged, and, an indicative project pipeline valued at approximately **USD 690 million** was identified and expanded across 15 concept areas, through a combined consultative process engaging 158 the stakeholders.³ These concepts span agriculture, forestry, wetland restoration, monitoring infrastructure, and climate finance integration.

The indicative total of USD 690 million is derived from the sum of all 15 project concepts identified at the First Stakeholder Consultative Meeting on 23 January 2026. The indicative total of USD 690 million is derived from 15 project concepts: 11 identified at the First National Consultative Workshop (23 January 2026, FGD 1) and 4 additional concepts identified at the Second National Consultative Workshop (19 March 2026), as documented in FGD 3 and the Workshop Report Annex 2. This figure aligns with the GGGI Direct Access Proposal to GCF (December 2025), which values Cambodia's climate action pipeline at approximately USD 400 million or more for 2025–2028 (GGGI, 2025)⁴⁸, and with Cambodia's NDC 3.0 (2025), which confirms nine GCF-funded projects involving Cambodia as a primary beneficiary, representing more than USD 785 million in total GCF financing (Cambodia NDA, accessed 25 March 2026). Of the USD 690 million total, roughly USD 250 million consists of blended finance instruments, specifically the Climate Finance Facility at USD 200 million (#09) and Green Logistics Decarbonisation at USD 50 million (#11). The remaining USD 440 million consists of grant-based, concessional, and blended project concepts for the 13 remaining non-blended concepts.

Project #12 — Forest Fire Prevention and Restoration Programme (USD 80 million, Tier 1). This project addresses recurring forest and land fires in Cambodia's eight Tier 1 provinces, with a focus on the northeastern forest-edge landscapes of Monduliri, Ratanakiri, Preah Vihear, and Kratie. The programme supports fire prevention infrastructure, community patrol systems, early warning EWS deployment, and assisted natural regeneration across an estimated 400,000 hectares of degraded forest edge. It aligns directly with NDC 3.0's FOLU sector conditional target of -148% GHG reduction by 2035, which represents the single largest mitigation opportunity in Cambodia's climate commitments (MoE, 2025)⁵. Budget benchmarks are drawn from GCF FP169 (Indonesia forest restoration, USD 40 million) and GEF-7 Cambodia REDD+ (USD 9.3 million for 800,000 hectares), scaled to Cambodia's 400,000-- hectare target area and expanded to include community livelihood and IPLC enterprise components. Financing: GCF grant/concessional loan (USD 50 million), GEF biodiversity co-financing (USD 15 million), GBFF biodiversity credits (USD 5 million), IFAD community livelihoods (USD 10 million). Lead funders: GCF, GEF, GBFF, IFAD, and bilateral donors. NDC 3.0 alignment: FOLU sector (direct); Objective 3 (primary), Objectives 2 and 5.

Project #13 — HFSLM Awareness, Capacity Building, Research and Knowledge Development (USD 18 million, Tier 1). This project addresses the most critical governance gap identified at the Second National Consultative Workshop: approximately 50% of commune-level authorities currently lack the capacity to write project proposals, request available funds, or implement HFSLM activities. The

programme combines structured training for provincial and commune officials, farmer behaviour change communication, research on sustainable land management alternatives, and knowledge management systems to support the IF implementation. NDC 3.0 identifies institutional capacity and governance as enabling conditions across all sectors. Budget benchmarks are drawn from the United Nations Development Programme (UNDP) Cambodia Governance programmes (USD 10–15 million), GEF enabling activities in ASEAN countries (USD 3–8 million), and the ASEAN-UK Green Transition Fund (GTF) capacity components. Financing: GCF Readiness Programme (USD 4 million), ASEAN-UK GTF Phase II (USD 5 million), bilateral TA including GIZ, UNDP, and SNV (USD 6 million), Royal Government of Cambodia co-finance (USD 3 million). Lead funders: GCF Readiness, ASEAN-UK GTF, GIZ, UNDP, and SNV. NDC 3.0 alignment: Governance and enabling environment across all sectors; Objective 5 (primary), Objectives 1 and 2 (farmer awareness and better commodity production).

Project #14 – Open Burning and Waste Management Programme, Urban and Rural (USD 35 million, Tier 2). This project targets open burning in peri-urban areas, municipal waste streams, and agricultural residues outside the priority fire hotspot provinces. Cambodia's NDC 3.0 Waste sector carries a conditional GHG reduction target of -59% by 2035 (from 9.3 MtCO₂e BAU to 3.9 MtCO₂e conditional), with open burning reduction as a central mitigation pathway (MoE, 2025)⁵. The programme supports collection infrastructure in peri-urban areas, composting and organic waste processing, and residue management in medium-risk agricultural provinces including Kampong Cham, Kampong Speu, and Kampong Chhnang. Budget benchmarks: ADB Cambodia Solid Waste Management Programme (USD 30 million, 2023), GCF municipal solid waste Lao PDR (USD 25 million), GCF Municipal Solid Waste, Cambodia (USD 25 million), and UNDP waste sector interventions in Cambodia (USD 8 million). Financing: ADB loan (USD 15 million), World Bank technical assistance and co-financing (USD 10 million), GCF results-based payment linked to verified emission reductions (USD 7 million), Royal Government of Cambodia municipal co-finance (USD 3 million). Lead funders: ADB, World Bank, GCF, Royal Government of Cambodia. NDC 3.0 alignment: Waste sector (direct); Agriculture sector residue component; Objectives 1, 2 and 5.

Project #15 – Green Taxonomy Development and Implementation for HFSLM Finance (USD 5 million, Tier 1). This is a critical enabling project that addresses the most urgent institutional gap identified at the Second National Consultative Workshop: the absence of a national green taxonomy that enables financial institutions to consistently classify HFSLM-eligible investments. CGCC and multiple commercial banks explicitly requested taxonomy alignment as a precondition for expanding HFSLM lending portfolios. The project will develop Cambodia's national green taxonomy covering agriculture, land use, forestry, and environmental investments; support implementation through NBC/SERC guidelines and financial institution training; and align taxonomy criteria with AIF-HFSLM and NDC 3.0 sectoral targets. NDC 3.0 identifies the National Bank of Cambodia sustainable finance framework and the Article 6 Operations Manual (2024) as key enabling instruments for mobilising private climate finance (MoE, 2025)⁵. Budget benchmarks: IFC Green Bond Framework Cambodia (USD 2 million TA), GGGI Green Finance Taxonomy Southeast Asia (USD 3–5 million per country), ADB sustainable finance TA programmes (USD 2–5 million). Financing: ADB Technical Assistance (USD 2 million), IFC advisory services (USD 1 million), GCF Readiness Programme (USD 1 million), GGGI in-kind support (USD 0.5 million), NBC/SERC institutional budget (USD 0.5 million). Lead funders: ADB, IFC, GCF Readiness, GGGI, NBC/SERC. NDC 3.0 alignment: Sustainable finance enabling environment; Article 6 carbon market framework; Objective 4 (primary), Objective 5.

Further feasibility assessment, however, will be required to evaluate market demand, feedstock sustainability, commercial viability, and environmental safeguards.

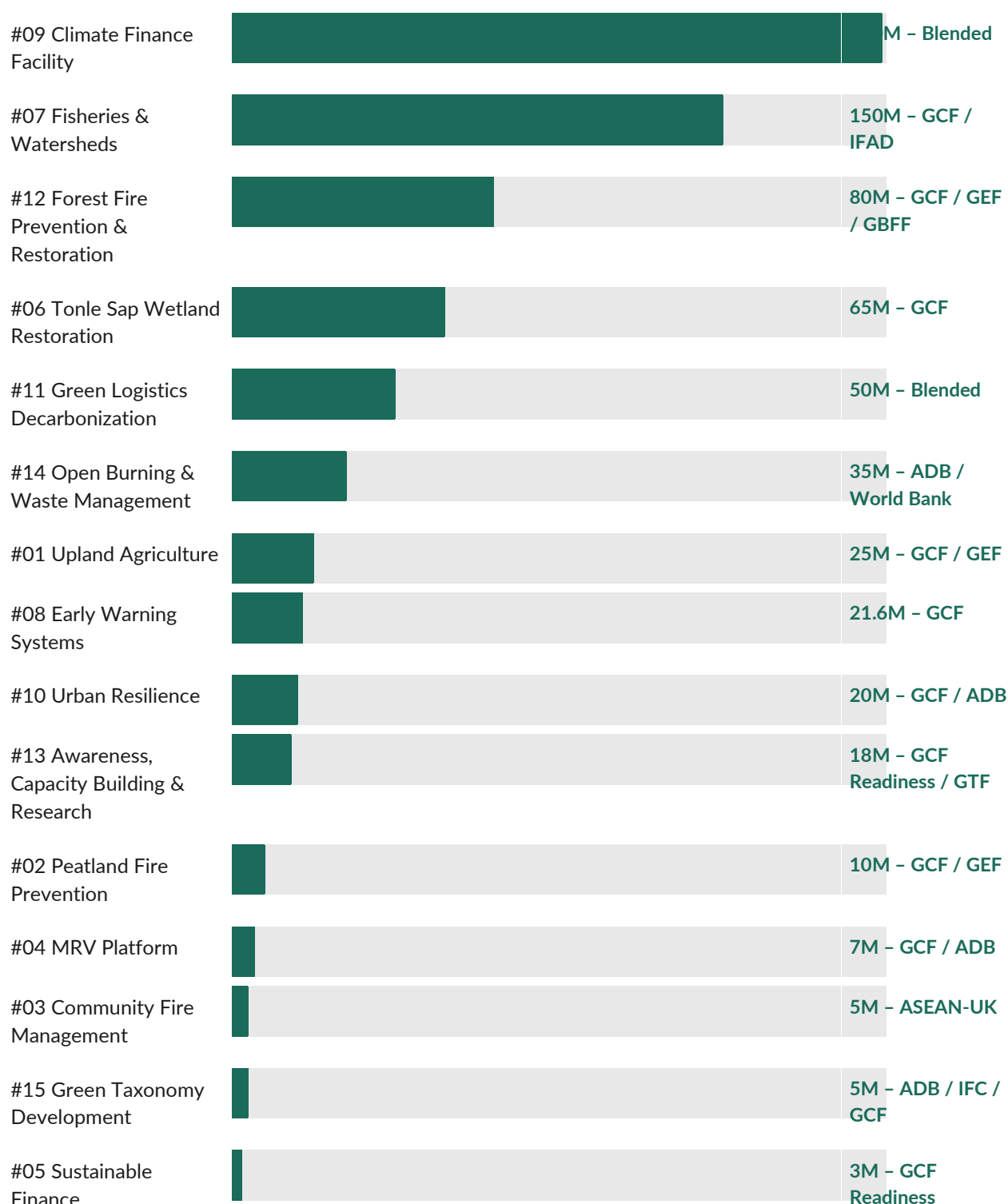


Figure 4.1. Indicative Cambodia HFSLM Project Pipeline – 15 Concepts (First Consultative Meeting, 23 January 2026; and Second National Consultative Workshop, 19 March 2026)

Projects #01–#11 were identified at the First Stakeholder Consultative Meeting (23 January 2026). Projects #12–#15 were proposed by the Ministry of Environment team at the Second National Consultative Workshop (19 March 2026) and have been added as new pipeline concepts. Budget

estimates for the projects #12–#15 are based on comparable ASEAN and Cambodian climate investments and cross-referenced with Cambodia's NDC 3.0 sectoral targets. All four new concepts are subject to pre-feasibility analysis before formal submission to climate finance sources.

Note on Project #11: The original concept “Eco-Industrial Parks and Green Logistics Decarbonisation” (USD 100 million) has been revised following the Second National Consultative Workshop (19 March 2026). The Eco-Industrial Parks component has been removed from this IF pipeline, as GCF has indicated it wishes to develop that component through a separate facility. The IF retains the Green Logistics Decarbonisation component only, resized to USD 50 million. The pipeline total is accordingly revised from USD 740 million to USD 690 million across 15 concepts.

Project #12 – Forest Fire Prevention and Restoration Programme (USD 80 million, AIF Objectives 3 and 2, Tier 1). This project targets recurring forest and land fires in Cambodia's eight Tier 1 provinces, with priority focus on the northeastern forest-edge landscapes of Monduliri, Ratanakiri, Preah Vihear, and Kratie. The programme covers fire prevention infrastructure, community patrol systems, early warning deployment, and assisted natural regeneration across an estimated 400,000 hectares of degraded forest edge. NDC 3.0 alignment: the FOLU sector carries a conditional GHG reduction target of -148% by 2035, the single largest mitigation opportunity in Cambodia's climate commitments, of which forest fire reduction is a primary lever (MoE, 2025)⁵. Budget rationale: benchmarked against GCF FP169 Indonesia forest restoration (USD 40 million), GEF-7 Cambodia REDD+ (USD 9.3 million, 800,000 hectares), and scaled to Cambodia's 400,000-hectare target. Financing structure: GCF grant and concessional loan (USD 50 million), GEF biodiversity co-financing (USD 15 million), GBFF biodiversity credits (USD 5 million), IFAD community livelihoods component (USD 10 million). Lead funders: GCF, GEF, GBFF, IFAD, and bilateral donors.

Project #13 – HFSLM Awareness, Capacity Building, Research and Knowledge Development (USD 18 million, AIF Objectives 5 and 1, Tier 1). This project addresses the governance gap confirmed at the Second National Consultative Workshop: approximately 50% of commune-level authorities lack the capacity to write project proposals, request available funds, or implement HFSLM activities independently. The programme provides structured training for provincial and commune officials, farmer behaviour change communication, research on sustainable land management alternatives to burning, and a knowledge management platform to support the IF implementation. NDC 3.0 alignment: institutional capacity and governance are identified as enabling conditions across all NDC sectors; the framework explicitly targets subnational implementation capacity as a critical gap (MoE, 2025)⁵. Budget rationale: benchmarked against UNDP Cambodia Governance Programme (USD 10–15 million), GEF enabling activities in ASEAN countries (USD 3–8 million per country), and ASEAN-UK GTF Phase I capacity components. Financing structure: GCF Readiness Programme (USD 4 million), ASEAN-UK GTF Phase II (USD 5 million), bilateral technical assistance from GIZ, UNDP, and SNV (USD 6 million), Royal Government of Cambodia co-finance (USD 3 million). Lead funders: GCF Readiness, ASEAN-UK GTF, GIZ, UNDP, and SNV.

Project #14 – Open Burning and Waste Management Programme, Urban and Rural (USD 35 million, AIF Objectives 1 and 5, Tier 2). This project targets open burning in peri-urban areas, municipal waste streams, and agricultural residues in medium-priority provinces, including Kampong Cham, Kampong Speu, and Kampong Chhnang. NDC 3.0 alignment: the Waste sector carries a conditional GHG reduction target of -59% by 2035, from a BAU of 9.3 MtCO₂e to a conditional 3.9 MtCO₂e, with

open burning reduction as a primary mitigation pathway (MoE, 2025)⁵. The programme supports collection infrastructure in peri-urban areas, composting and organic waste processing facilities, and agricultural residue management systems in Tier 2 provinces. Budget rationale: benchmarked against ADB Cambodia Solid Waste Management Programme (USD 30 million, 2023), GCF municipal solid waste project in Lao PDR (USD 25 million), and UNDP waste sector interventions in Cambodia (USD 8 million). Financing structure: ADB concessional loan (USD 15 million), World Bank technical assistance and co-financing (USD 10 million), GCF results-based payment linked to verified emission reductions (USD 7 million), Royal Government of Cambodia and municipal co-finance (USD 3 million). Lead funders: ADB, World Bank, GCF, Royal Government of Cambodia.

Project #15 – Green Taxonomy Development and Implementation for HFSLM Finance (USD 5 million, AIF Objectives 4 and 5, Tier 1). This enabling project addresses the most urgent institutional finance gap identified at the Second National Consultative Workshop: the absence of a national green taxonomy that allows financial institutions to consistently classify HFSLM-eligible investments. CGCC and multiple commercial banks explicitly requested taxonomy alignment as a prerequisite for expanding HFSLM lending portfolios. The project will develop Cambodia’s national green taxonomy covering agriculture, land use, forestry, and environmental investments; support implementation through NBC/SERC guidelines and financial institution training; and align criteria with AIF-HFSLM and NDC 3.0 sectoral targets. NDC 3.0 alignment: the NBC Sustainable Finance Framework and the Article 6 Operations Manual (2024) are identified as key instruments for mobilising private climate finance, and a green taxonomy is a prerequisite for both (MoE, 2025)⁵. Budget rationale: benchmarked against IFC Green Bond Framework Cambodia (USD 2 million TA), GGGI Green Finance Taxonomy Southeast Asia (USD 3–5 million per country), and ADB sustainable finance TA programmes in the region (USD 2–5 million). Financing structure: ADB Technical Assistance (USD 2 million), IFC advisory services (USD 1 million), GCF Readiness Programme (USD 1 million), GGGI in-kind contribution (USD 0.5 million), NBC/SERC institutional budget (USD 0.5 million). Lead funders: ADB, IFC, GCF Readiness, GGGI, NBC/SERC.

The MoE team, through the March 2026 consultation, proposed four additional project concept areas for inclusion in future iterations of the IF pipeline: (1) Forest Fire Prevention and Restoration – covering forest fire prevention and management systems, land and forest restoration for degraded landscapes, and long-term fire risk reduction; (2) Awareness, Capacity Building, Research, and Knowledge Development – covering farmer and community awareness programmes, technical and institutional capacity at national and subnational levels, and research on sustainable land management alternatives to burning; (3) Open Burning and Waste Management (Urban and Rural) – addressing open burning in both agricultural and urban settings, waste management solutions for peri-urban and municipal areas, and agricultural residue and urban solid waste streams; and (4) Green Taxonomy Development and Implementation – covering green taxonomy frameworks aligned with national finance systems, expanded to agriculture, land use, and environmental investments. These four concepts were proposed by the MoE team and will be developed for future pipeline inclusion.

While elements of these themes are already reflected across several existing project concepts and enabling measures within the current pipeline, the consultations highlighted the need for their further strengthening, integration, and potential expansion in future implementation phases of the country’s IF-HFSLM.

4.2 Standard Project Types

The HFSLM investment pipeline organises individual project concepts into five standard project types. Each type combines a defined set of technical components with a clear revenue model and matched financing instruments. Table 4.1 summarises these standard structures, which serve as design templates for bankable proposals across the priority landscapes. This categorisation helps investors, government counterparts, and development partners identify the financing approach most suited to each project, reduces preparation time, and supports consistent application of safeguards and MRV requirements across the pipeline.

Table 4.1. Standard HFSLM Project Types – Components, Revenue, and Financing Instruments

Project Type	Core Components	Revenue Model	Financing Instrument
No-Burn Residue Solutions	Straw baler cooperatives; aggregation hubs; biochar/compost/packaging processing; offtake agreements	Product sales (compost, biochar, packaging); service fees; potential carbon credits	Blended finance; concessional credit lines; commercial debt
Sustainable Farming Packages	Mechanised land prep; soil carbon enhancement; alternate wetting and drying; digital traceability and compliance tracking	Commodity sales under no-burn standards; price premiums; supply-chain finance	Portfolio credit via cooperatives; bundled credit and extension
Fire Prevention and Monitoring Services	Satellite early warning; community patrol; rapid response; risk mapping; provincial data integration	Public service contracts; performance-based payments for fire reduction outcomes	Government service contracts; climate fund grants; results-based finance
Restoration and Rewetting Models	Assisted natural regeneration; floodplain forest restoration; hydrological rehabilitation; community stewardship	Carbon credits (VCM / Article 6); results-based climate finance; biodiversity credits	GCF / GEF grants; performance payments; voluntary carbon market
Supply Chain Traceability Platforms	Farm registration; geo-referencing; satellite-linked compliance; export certification; ESG reporting dashboard	Subscription fees; co-investment from commodity buyers; green bond alignment fees	Public-private partnership; buyer co-investment; green finance facility

4.3 Project Preparation Pathway

This section sets out the project preparation pathway from concept origination through PIN development, prefeasibility, full feasibility, and submission to financing partners. The pathway is designed to align with Green Climate Fund (GCF), Adaptation Fund (AF), ADB, AIIB, and bilateral DFI standards, ensuring that AIF-HFSLM concepts move efficiently from idea to financial close.

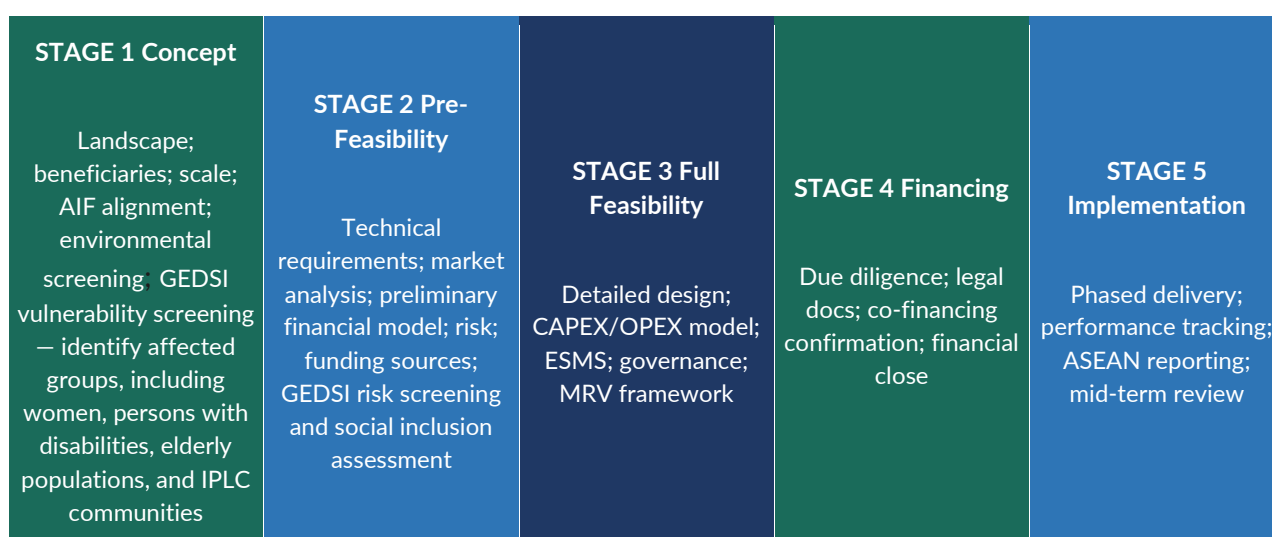


Figure 4.2. HFSLM Project Preparation Pathway – From Concept to Bankable Proposal (Source: GEC & GGGI, (2026). Cambodia IF-HFSLM Technical Process Documentation.

4.4 Priority Pipeline Identified by Government

Based on readiness levels, stakeholder support, and alignment with national targets, the Government has identified five priority investments for accelerated preparation:

Table 4.2. Government Priority Pipeline for Accelerated Investment Preparation (FGD 3, 23 January 2026)

Priority Project	Indicative Value	Key Financing Target	Expected Outcomes
Zero-Burning Circular Economy Fund for Agricultural Residues	USD 25–50M	GCF, ADB, commercial banks (blended)	No-burn transition in 50,000+ ha rice; bioeconomy SMEs established
Community-Based Fire Prevention in Forest-Edge Provinces	USD 10–15M	GCF, results-based finance	Reduced forest fire in NE provinces; 20+ CPA brigades operational
Tonle Sap Basin Landscape Restoration	USD 60–70M	GCF, World Bank, GEF	Degraded floodplain forests restored; carbon sequestration verified
Fire-Free Commodity Supply Chain Pilots (Rice, Maize)	USD 5–10M	Supply-chain finance; DFIs	Traceable no-burn supply chains; ESG-aligned export compliance
Integrated National MRV and Early Warning Platform	USD 7–10M	GCF, ADB, government	Real-time monitoring; climate finance readiness; ASEAN reporting aligned

4.5 Geographic Pipeline Distribution

The pipeline is geographically concentrated in the eight Tier 1 provinces identified in Chapter 1 (Monduliri, Ratanakiri, Preah Vihear, Stung Treng, Kratie, Kampong Thom, Battambang, and Banteay Meanchey), with multi-province programmes covering northeastern forest landscapes, the Tonle Sap rice belt, and Mekong border provinces. Table 4.3 presents the indicative geographic allocation by project concept.

Table 4.3. HFSLM Pipeline Geographic Distribution by Priority Landscape

Priority Landscape	Project Numbers	Indicative Value	AIF Objectives	Key Financing Sources
Tonle Sap Basin (Siem Reap, Battambang, Pursat, Kampong Thom)	#01, #02, #06, #07, #08, #10	USD 271M+	1, 2, 3, 5	GCF, World Bank, IFAD, commercial banks
Northeastern Forest-Edge (Monduliri, Ratanakiri, Preah Vihear)	#03, #04, #08	USD 34M	2, 3, 5	GCF, GEF, GBFF, IFAD, FAO
Intensive Rice Provinces (Prey Veng, Takeo)	#01, #05, #09	USD 228M	1, 4	GCF, ADB, banks, blended
Upland Transition Zones (Kampong Cham, Kampong Speu)	#01, #09	USD 225M	1, 4	DFIs, supply-chain finance, bilateral
National Scale / Urban (Multi-province or systemic)	#04, #05, #09, #11	USD 310M	4, 5	GCF, private, DFIs, green bonds

4.6 Readiness Gaps and Preparation Needs

The 15 project concepts identified through the consultation workshops are at different stages of readiness. Of these, 9 projects have been assessed for readiness gaps and technical assistance requirements. Some require further feasibility analysis, others need policy alignment, and a few are ready for advanced preparation. The remaining 6 project concepts are still under review and will be incorporated as preparation progresses. The table below sets out the readiness gaps and the technical assistance required to move each of the 9 assessed concepts toward investment-ready status.

Table 4.4. Project Readiness Gaps and Technical Assistance Requirements

Project	Tier	Key Readiness Gap	TA Needed	Estimated TA Cost
#01 Sustainable Upland Agriculture	T1	Pre-feasibility; value chain analysis; financial modelling	MAFF/MoE TA; GGGI financial structuring	USD 200–400K
#02 Tonle Sap Fire Prevention	T1	Concept note finalisation; co-funder confirmation	GEC/GGGI project preparation	USD 100–200K
#03 Community Fire Management	T1	Community consultation; CPA capacity assessment; MRV design	GDNPA/UNDP technical support	USD 100–150K
#04 National MRV Platform	T1	Technical architecture; data integration roadmap	ICT/MoE system design; ADB TA	USD 200–300K
#05 Sustainable Finance Integration	T1	NBC/SERC taxonomy process; ESG framework	NBC advisory; IFC/ADB TA	USD 150–250K
#06 Tonle Sap Restoration	T1	Full feasibility study; environmental impact assessment	MoE/World Bank feasibility TA	USD 500K–1M
#07 Climate-Smart Fisheries	T2	Scoping study; fisheries data; watershed analysis	FAO/IFAD scoping mission	USD 300–500K
#08 Early Warning Systems	T1	Technology platform design; inter-agency data protocols	MoE/ADB system architecture TA	USD 250–400K
#09 Climate Finance Facility	T2	Facility design; legal structure; pipeline validation	MEF/NBC/GGGI facility design TA	USD 400–600K

Chapter 5. Financing Plan and Instruments

HFSLM financing must be matched to the economic nature of each intervention. Public-good activities should not be forced into commercial financing models, while revenue-generating activities should not rely indefinitely on grants. The framework therefore uses a layered financing approach combining public finance, grants, concessional loans, guarantees, blended finance, commercial lending, green bonds, and carbon/nature finance.

5.1 Why Projects Are Not Financed Today

Although the environmental and climate benefits of the HFSLM are well established, projects in Cambodia continue to face structural financing barriers (Table 5.1). During the January 2026 consultation, stakeholders identified four systemic constraints that explain why many HFSLM project concepts remain unfunded.³

Table 5.1. Structural Barriers to HFSLM Finance in Cambodia

Barrier	Description	Required Solution
Perceived risk	Uncertain biomass revenues; commodity price volatility; weak smallholder collateral; unfamiliarity of banks with HFSLM business models	First-loss capital; partial credit guarantees; blended structures
Delayed financial returns	High upfront costs for equipment, infrastructure, capacity before revenue stabilises; commercial hurdle rates not met	Concessional finance; extended tenors; interest rate buy-down
Small ticket size and fragmentation	Smallholder-scale investments too small for institutional capital; high transaction costs per unit of investment	Aggregation through cooperatives, funds, or supply-chain platforms
Under-developed markets	No offtake agreements; no quality standards for biomass products; weak buyer commitments; nascent demand for sustainable commodities	Market facilitation; anchor buyer partnerships; demand-side procurement standards

Financial sector participants at the March 2026 workshop reinforced these findings. Commercial banks confirmed that most agricultural projects in Cambodia are not yet bankable under current conditions due to small scale, fragmentation, and absence of structured underwriting criteria. The bankability gap is particularly severe for vulnerable groups: discussions referenced ADB bankability requirements frequently, but no substantive guidance exists on what bankability means in practice for smallholders, cooperatives, and community enterprises. The IF financing strategy must explicitly define accessible entry criteria for these groups. Agricultural supply-chain finance backed by anchor commodity buyers was identified as the most practical near-term instrument, while blended finance with first-loss capital remains the most effective structure for early-stage projects where commercial risk is high.

5.2 Financing Instruments

Section 5.2 presents the menu of financing instruments available to AIF-HFSLM projects. The menu spans sovereign concessional instruments (green and sustainability bonds, GCF and bilateral DFI grants and concessional loans), blended finance vehicles (partial credit guarantees, first-loss tranches, results-based payments), and grant-based readiness instruments. Each project concept is mapped to the instrument best suited to its risk-return profile, ticket size, and stage of development.

Table 5.2. HFSLM Financing Instruments – Application and Cambodia Examples

Instrument	How It Works	Best Application	Example in Cambodia Pipeline
Concessional Loans / Credit Lines	Below-market interest rates; extended repayment tenors funded by climate institutions	Mechanisation; residue processing infrastructure; early warning systems	GCF credit line to domestic banks for straw baler equipment
Blended Finance Structures	First-loss tranche from public/concessional sources absorbs early risk; enables commercial debt to follow	Circular bioeconomy funds; aggregated farmer portfolios	Zero-Burning Circular Economy Fund (#09 Climate Finance Facility)
Credit Guarantees	Government or DFI guarantees partial bank loan exposure; reduces bank risk without direct lending	Rural SME lending; cooperative credit; women-led enterprises	NBC/CGCC guarantee scheme for HFSLM-aligned enterprises
Results-Based Finance	Payments disbursed upon verified outcomes: reduced fires, restored hectares, emission reductions	Fire prevention services; restoration programmes; community patrol	Tonle Sap restoration performance payments linked to MRV platform
Supply-Chain Finance	Anchor commodity buyer provides advance payment or guarantee to compliant no-burn suppliers	Rice, maize, cassava no-burn supply chain transformation	Fire-free rice pilot with ACLEDA-backed cooperative credit
Green / SLM Bonds	Capital raised on debt markets; proceeds allocated to HFSLM infrastructure; ESG investor aligned	Large-scale residue processing; monitoring infrastructure	CSX-listed green bond for Tonle Sap restoration infrastructure
Carbon and Nature Finance	Revenue from verified emission reductions or biodiversity outcomes sold to private or compliance buyers	Forest restoration; avoided burning; community forestry	Biochar projects + forest restoration linked to VCM / Article 6

Of note, carbon finance should be considered a supplementary financing mechanism rather than the primary revenue source for most HFSLM investments due to market uncertainty, verification costs, and evolving international carbon market regulations.

5.3 Financing Responsibility Matrix

Scaling HFSLM investments in Cambodia may face constraints related to limited collateral, perceived agricultural risk, limited long-term lending capacity, and uneven access to finance in rural areas. Blended finance, concessional support, guarantees, and technical assistance will therefore remain important for improving investment viability and reducing financial risk.

Table 5.3. HFSLM Financing Responsibility Matrix – Who Finances What in Cambodia

Financier	Primary Role	Stage	Instruments	Cambodia Entry Points
Government (RGC)	Catalytic de-risking; policy reform	Early	Budget; subsidies; tax relief; guarantee fees	MEF green investment window; MoE HFSLM budget line
GCF	Concessional capital; NDC implementation	Early-mid	Grants; concessional loans; results-based	GCF Readiness + pipeline preparation; accreditation via GGGI
GEF	Biodiversity and land co-benefits	Early-mid	Grants; enabling activities	IF project concepts #01, #02, #03
IFAD	Smallholder and IPLC livelihoods	Early-mid	Concessional loans; community grants	Upland agriculture and community enterprise projects
ADB, World Bank	Portfolio-scale infrastructure; guarantees	Mid	Concessional loans; first-loss; PCGs	Tonle Sap restoration; MRV platform; mechanisation credit lines
AFD, GIZ, bilateral donors	Technical assistance; co-financing	Early	Grants; TA facilities; co-investment	ASEAN-UK GTF (current); AFD green economy programme
NBC-aligned domestic banks (ACLEDA, Phillip Bank)	Scale credit access to enterprises	Mid-mature	Equipment loans; working capital; supply-chain credit	NBC sustainable finance guidelines; CGCC guarantee-linked products
Corporate anchor buyers	Market stabilisation; co-investment	Mid	Offtake agreements; supplier finance	Export rice mill and agro-processor no-burn procurement standards
Carbon / nature markets (VCM, Article 6)	Performance-based revenue	Performance stage	Carbon credits; biodiversity credits	Forest restoration + biochar projects with REDD+ and VCM access

Cambodia's existing GCF portfolio provides concrete entry points for the IF-HFSLM financing. The Cambodian Climate Financing Facility (FP228, KDB implementing, USD 54.9 million) and the ASEAN Catalytic Green Finance Facility (FP156, ADB implementing, USD 300 million, multi-country) are already operational blended finance instruments that the country's IF-HFSLM projects should seek to leverage through sub-windows or parallel financing tranches. GGGI (KHM-RS-010) has already received GCF readiness support for private bank accreditation and on-lending capacity in Cambodia, which directly supports the IF's goal of mobilising domestic commercial bank participation. The NCDD Secretariat (SAP058 and KHM-RS-011) has GCF direct access entity status and experience in sub-national climate fund management, making it a viable co-implementing partner for

community-level HFSLM investments. These relationships should be referenced explicitly in the IF concept note submissions to demonstrate institutional readiness and avoid duplication (Cambodia NDA, accessed 25 March 2026).

5.4 Sample Deal Structures

To demonstrate how the pipeline can move from concept to financing, five transaction models are presented below. Each illustrates a different approach suited to specific investor types, risk profiles, and project scales.

MODEL 1: Blended Circular Bioeconomy Facility

💡 *Use Case: Zero-Burning Circular Economy Fund for Agricultural Residues*

Transaction Structure:

- GCF first-loss tranche (20–25%) absorbs early-stage market and technology risk
- Government catalytic capital or guarantee fee support (RGC / MEF)
- ADB concessional senior loan (50–60% of facility)
- Commercial bank debt at blended rate – ACLEDA / Phillip Bank (10–15%)
- Cooperative equity stake in processing units (5–10%)

Revenue / Outcome:

- Product sales: compost, biochar, biomass pellets, packaging materials
- Carbon credits from avoided burning (VCM / Article 6)

→ **Portfolio-scale financing across rice provinces; smallholder aggregation; replicable model**

MODEL 2: Supply-Chain Finance with Offtake-Backed Lending

💡 *Use Case: Fire-Free Rice or Maize Supply Chain Pilots*

Transaction Structure:

- Anchor buyer (rice mill or exporter) signs forward offtake at no-burn premium
- ACLEDA / Phillip Bank provides working capital loans to cooperatives
- CGCC or DFI partial credit guarantee (30–40% of loan)
- Digital traceability platform verifies no-burn compliance at the farm level

Revenue / Outcome:

- Commodity sales under verified no-burn standards with a price premium
- Subscription fees from the traceability platform; supply-chain finance spreads

→ **ESG-compliant export supply chains; farmer financial access; bank portfolio quality**

MODEL 3: Results-Based Restoration Finance

💡 *Use Case: Tonle Sap Basin Floodplain Restoration*

Transaction Structure:

- GCF grant or concessional loan funds for initial restoration activities
- MRV platform verifies hectares restored and fire incidents avoided
- Performance payments disbursed upon verified outcomes (MoE + GGGI co-verified)
- Carbon revenue shared between communities (70%) and the executing agency (30%)

Revenue / Outcome:

- Results-based climate finance from GCF or bilateral donors
- VCM carbon credits at USD 15–30/tCO₂e; biodiversity co-credits (GBFF)

→ **Verified restoration at scale; community co-benefit; long-term carbon and biodiversity finance**

MODEL 4: Mechanisation Credit Line with Interest Buy-Down

 *Use Case: Straw Baler and No-Burn Equipment Acquisition for Smallholders*

Transaction Structure:

- Domestic bank establishes dedicated HFSLM credit line (USD 5–10M)
- Government or GCF provides interest rate subsidy (3–5% buy-down)
- TA supports borrower cooperative governance and equipment management
- Repayment schedule aligned with harvest cycles; baling service fee revenue

Revenue / Outcome:

- Service fees from baling operations paid by farmer clients
- Residue sales revenue from compost and biochar enterprises

→ **Rapid equipment adoption; burning reduction at scale; replicable across all rice provinces**

MODEL 5: Sustainable Land Management Bond

 *Use Case: Large-Scale Residue Processing Infrastructure or National MRV System*

Transaction Structure:

- Development bank or RGC agency issues SLM bond on CSX or ASEAN regional market
- Proceeds allocated to HFSLM-aligned infrastructure
- Independent verification confirms alignment with NBC/SERC green taxonomy
- ESG impact reporting to bondholders; public investor dashboard

Revenue / Outcome:

- Infrastructure user fees; public service payments
- Sustainability KPI-linked interest rate adjustments

→ **Institutional capital for large-scale infrastructure; diversified investor base; ESG alignment**

The financing models presented in Section 5.4 are designed not only to mobilise capital, but also to address the key implementation and investment risks associated with the HFSLM activities in Cambodia. Different financing structures are appropriate for different project types depending on factors such as feedstock reliability, farmer adoption, policy stability, MRV capacity, market maturity,

and commercial viability. Table 5.4 summarises major investment risks relevant to the proposed financing models and potential mitigation measures.

Table 5.4. Key investment risk and mitigation measures for the HFSLM financing models

Risk	Affected Project	Mitigation	Relevant Financing Model
Feedstock supply risk	Biochar, biomass energy, compost	Aggregation contracts, seasonal supply mapping	Model 1
Farmer adoption risk	No-burn agriculture	Subsidies, extension, service-provider models	Models 1 and 2
Carbon price volatility	Biochar, REDD+, restoration	Conservative revenue assumptions	Models 3 and 4
Policy uncertainty	Private investment	Clear regulations and incentives	All models
MRV weakness	Carbon/nature finance	Digital MRV and third-party verification	Models 3, 4, and 5

Chapter 6. Government Commitment Package

6.1 Policy Commitment Overview

Stakeholders at the January 2026 consultation were clear on one point: the enabling environment is decisive. Without policy clarity, institutional coordination, and credible monitoring, investment at scale simply will not materialise. ³

Table 6.1. Government Commitment Package to Enable HFSLM Investment

Action	Lead	Timeline	Investment Relevance
Formally adopt the Cambodia's IF-HFSLM as the country's investment framework	MoE / RGC	Q2/Q3 2026	Signals investment-grade policy commitment to DFIs and ASEAN
Establish a national HFSLM focal point and inter-agency coordination mechanism	MoE (GDNPA)	Q1 2026	Enables coordinated portfolio management and ASEAN reporting
Integrate HFSLM criteria into the national green finance taxonomy	NBC / SERC / MEF	Q3 2026/ 2027	Directs bank lending toward compliant land-use investments
Issue no-burn compliance guidelines for priority commodity supply chains	MAFF / MoE	Q2 2026/ 2027	Enables supply-chain finance and traceability platform development
Operationalise tax / duty relief for certified HFSLM equipment	MEF / MISTI	Q3 2026/ 2027	Lowers equipment acquisition costs; incentivises mechanisation adoption
Integrate HFSLM emission reduction metrics into NDC reporting cycles	MoE	Annual	Strengthens GCF eligibility; demonstrates measurable NDC contribution
Allocate subnational enforcement budgets for fire prevention	Mol / Provincial	Q2 2026/ 2027	Credibility for compliance-linked finance; reduces operational fire risk for investors
Apply FPIC and social safeguards in IPLC-relevant project areas	MoE / MAFF	All projects	GCF Environmental and Social Policy compliance; community acceptance

6.2 Fiscal Incentives and Budget Support

- Tax or duty relief for certified HFSLM equipment including straw balers, biomass processors, and monitoring tools;
- Interest rate buy-down mechanisms for credit lines targeting no-burn equipment acquisition;
- Guarantee fee support enabling domestic banks to expand rural HFSLM lending portfolios;
- Targeted subsidies or grants to subnational governments for fire prevention infrastructure; and
- Budget allocations for MRV platform development, enforcement, and agricultural extension services.

6.3 Land Tenure, Enforcement, and Safeguards

Completing Communal Land Titling (CLT) in the forest-edge provinces is particularly important, as it reduces tenure risk and opens the door to community-based investments. Effective enforcement must combine regulatory authority with tangible farmer support packages that provide access to mechanisation, residue buyback, and extension services — making compliance economically rational. All government-supported investments will apply social and environmental safeguards aligned with GCF requirements.

GEDSI considerations must be embedded explicitly in all land tenure, enforcement, and safeguard activities under this section. Gender-responsive land registration processes should ensure that women smallholders can secure individual or joint land titles, with targeted outreach to overcome structural exclusion. In IPLC areas, FPIC protocols are mandatory before any project activities commencement, and communal land titling acceleration is a prerequisite for community-based investment eligibility. Enforcement design should avoid imposing disproportionate burdens on vulnerable households: compliance support packages — including equipment access, residue collection services, and extension training — must reach women-headed households, young or elderly farmers, and landless labourers. Disability-inclusive safeguard design must ensure that early warning systems, evacuation routes, and emergency response plans are accessible to persons with disabilities and elderly community members. All investments under this framework shall apply social and environmental safeguards aligned with GCF Environmental and Social Policy requirements.

6.4 Government Commitment Tracker

The table presents the full matrix of priority policy and institutional commitments that form the enabling environment for HFSLM investment mobilisation in Cambodia. Each commitment is mapped to its lead agency, implementation deadline, expected output, and direct relevance to investors providing a consolidated reference for both public stakeholders and private sector actors assessing the regulatory and financial landscape. Together, these commitments represent the near-term policy actions required to reduce investment risk, establish credible governance structures, and unlock access to domestic and international climate finance.

Table 6.2. Priority Policy and Institutional Commitments for HFSLM Investment Mobilisation

Commitment	Lead Agency	Deadline	Output	Investor Relevance
Establish National HFSLM Coordination Mechanism	Ministry of Environment (MoE)	March 2026	Designated National Focal Point and Inter-Agency Investment Task Force	Single window for policy coordination and cross-sectoral project delivery
Finalise and Adopt Cambodia IF-HFSLM	MoE with GEC/GGGI support	Q2 Q3 2026	Validated IF and bankable project pipeline	Transparent strategic roadmap and clear pipeline for resource mobilisation

Commitment	Lead Agency	Deadline	Output	Investor Relevance
Operationalise Fiscal Incentive Framework	MEF / CDC	2026–2027	Tax and duty relief guidelines for certified HFSLM equipment (balers, biochar kilns, EWS)	Lowers CAPEX for private sector adoption of no-burn technologies
Develop National Green Finance Taxonomy	NBC / MEF / MoE	5–36 months	National green taxonomy inclusive of HFSLM criteria	Facilitates ESG compliance and access to lower-interest green capital
Establish National Carbon Registry	MoE (Dept. of Climate Change)	Q4 2027	Online compliance registry and digital tracking platform	Enables eligibility for performance-based payments and Article 6 credits
Strengthen Law on Investment for HFSLM	CDC	Ongoing	Registration of HFSLM projects as Qualified Investment Projects (QIP)	Unlocks corporate income tax exemptions and import duty waivers
Issue No-Burn Supply Chain Compliance Standards	MAFF / MoE	Q2 2027	No-burn certification for export-oriented rice, maize, and cassava producers	Market incentive replaces enforcement; enables supply-chain finance
Activate CPA Fire Mandate with Multi-Year Budget	MoE / GDNPA	Q1 2026	Multi-year CPA patrol service agreements with performance indicators	Enables results-based finance for the North East province forest fire prevention

The table below summarises the institutional roles, milestones, and indicative timelines that operationalise the section above. Roles are stated using the RACI convention (Responsible, Accountable, Consulted, Informed).

Table 6.3. Cambodia Government Commitment Package – (FGD 3, 23 January 2026)

Commitment	Lead Agency	Deadline	Output	Investor Relevance
Establish National HFSLM Coordination Mechanism	Ministry of Environment (MoE)	March 2026	Designated National Focal Point and Inter-Agency Investment Task Force	Single window for policy coordination and cross-sectoral project delivery
Finalise and Adopt Cambodia's IF-HFSLM	MoE with GEC/GGGI support	Q3 2026	Validated the IF and bankable project pipeline	Transparent strategic roadmap and clear pipeline for resource mobilisation

Commitment	Lead Agency	Deadline	Output	Investor Relevance
Operationalise Fiscal Incentive Framework	MEF / CDC	2026–2027	Tax and duty relief guidelines for certified HFSLM equipment (balers, biochar kilns, EWS)	Lowers CAPEX for private sector adoption of no-burn technologies
Develop National Green Finance Taxonomy	NBC / MEF / MoE	5–36 months	National green taxonomy inclusive of HFSLM criteria	Facilitates ESG compliance and access to lower-interest green capital
Establish National Carbon Registry	MoE (Dept. of Climate Change)	Q4 2027	Online compliance registry and digital tracking platform	Enables eligibility for performance-based payments and Article 6 credits
Strengthen Law on Investment for HFSLM	CDC	Ongoing	Registration of HFSLM projects as Qualified Investment Projects (QIP)	Unlocks corporate income tax exemptions and import duty waivers
Issue No-Burn Supply Chain Compliance Standards	MAFF / MoE	2027	No-burn certification for export-oriented rice, maize, and cassava producers	Market incentive replaces enforcement; enables supply-chain finance
Activate CPA Fire Mandate with Multi-Year Budget	MoE / GDNPA	2026	Multi-year CPA patrol service agreements with performance indicators	Enables results-based finance for the North East province forest fire prevention

Table 6.4. Short-Form Government Commitment Status (FGD 3, 23 January 2026)

Summary Action	Lead	Deadline	Status – February 2026
National HFSLM Focal Point designated	MoE / GDNPA	March 2026 March 2026 (completed – Second National Consultative Workshop held 19 March 2026)	In progress – GDNPA confirmed as lead agency
NDC 3.0 submitted to UNFCCC	MoE	August 2025	✓ Submitted and approved
Green Bond Framework / Taxonomy initiated	SERC / NBC	Medium-term	Sustainable finance discussions with NBC underway
National Carbon Registry development	MoE / SERC	Ongoing	Planning stage – SERC/MoE coordinating institutional setup

Chapter 7. Private Sector Participation Plan

7.1 Private Sector Engagement Overview

Reducing haze at scale requires private sector engagement not only as a source of financing but as a driver of market transformation. During the consultations, participants identified corporate buyers, commercial banks, and SMEs as essential actors within Cambodia's HFSLM investment ecosystem. ³

Table 7.1. Private Sector Roles and Co-Investment Models in Cambodia's HFSLM Pipeline

Actor	Expected Role	Co-Investment Model	Enabling Condition
Commodity buyers and agro-processors	Adopt no-burn sourcing standards; provide offtake and price premiums; invest in traceability	Supplier finance; offtake-backed lending; traceability co-investment	No-burn procurement policy; MAFF compliance guidelines
Commercial banks (ACLEDA, Phillip Bank, CGCC)	Expand HFSLM lending products; participate in risk-sharing facilities	Credit lines backed by DFI guarantees; supply-chain credit	NBC sustainable finance guidelines; green taxonomy criteria
SMEs and agro-processing enterprises	Operate residue collection, processing, and biomass product enterprises	Equity investment; blended debt; circular economy fund participation	Concessional capital access; market development support; TA
Impact investors and ESG funds	Equity and quasi-equity in mature HFSLM enterprises	Direct equity in circular bioeconomy funds; restoration fund co-investment	Standardised project profiles; MRV performance tracking; exit mechanisms
Carbon and nature market buyers	Purchase verified emission reductions and biodiversity credits	Results-based payment under VCM or Article 6 agreements	Robust MRV platform; national carbon registry; credible verification

The March 2026 consultation recorded the following institutional commitments: ADB confirmed its support for the country's IF-HFSLM framework and is working with the Government on municipal waste collection as an entry point; World Bank expressed interest linked to poverty reduction and is exploring technical assistance; CGCC is willing to expand guarantee products for HFSLM enterprises and requested alignment of the national green taxonomy definition across sectors to enable consistent classification of eligible investments; Green Carbon expressed interest in developing a rice straw biochar pilot with smallholder farming communities; Conservation International offered to share real-time fire management data from the Tonle Sap programme; and GIZ noted its SEACAI programme on stopping smoke from agriculture and its interest in using the IF as a platform to attract international investment. CIMB noted that Cambodia's green finance pipeline remains nascent and requires further development before commercial finance flows can be mobilised at scale.

7.2 National Investor Roundtable

A biannual National Investor Roundtable will convene government, DFIs, commercial banks, corporate buyers, and impact investors to review pipeline progress, identify financing gaps, and advance deal structuring. This mechanism puts into practice the public-private coordination platform that stakeholders recommended at the January 2026 consultation.⁵³ The Investor Roundtable should function as a permanent pipeline management mechanism rather than a one-off dialogue platform. It should review project readiness, financing gaps, safeguard risks, MRV requirements, and policy bottlenecks twice per year.

Chapter 8. Gender Equality, Disability, and Social Inclusion

8.1 Rationale for GEDSI in HFSLM

The intersections between HFSLM, agriculture, forestry governance, climate mitigation, and rural livelihoods are socially differentiated. Without deliberate gender equality, disability, and social inclusion (GEDSI) integration, there is a real risk that HFSLM interventions will reinforce existing inequalities, reduce compliance, and weaken environmental outcomes.

Integrating gender equality, disability, and social inclusion (GEDSI) into HFSLM strengthens the relevance, effectiveness, and long-term sustainability of interventions by ensuring they are responsive to the needs and capacities of vulnerable and underserved groups. Meaningful engagement of women, youth, persons with disabilities, indigenous peoples, and other underserved populations supports more locally appropriate and resilient land management solutions. Deliberate GEDSI approaches create opportunities to:

- Address differentiated needs and risks by recognising how social and gender dynamics shape land use practices, resource access, and exposure to environmental hazards.
- Reduce structural barriers by improving equitable access to land, finance, training, and participation in decision-making processes.
- Enhance effectiveness and sustainability by incorporating the knowledge, roles, and priorities of diverse groups into HFSLM design and implementation.
- Mitigate unintended negative impacts by identifying and managing risks to livelihoods, food security, and resource access for vulnerable communities.

8.2 Policy and Regulatory Alignment

The Cambodia's IF-HFSLM operates within the Kingdom of Cambodia's policy environment that encourages GEDSI integration. Key policies and regulations include:

Framework	Level	GEDSI Relevance to HFSLM
Constitution (Article 45)	National	Equality before the law; basis for non-discriminatory HFSLM investments
Environmental and Natural Resources Code 2023	National	Community rights in natural resource governance; participatory land management
Nearly Rattanak Strategy (MoWA) (2019-2023)	National	Gender mainstreaming across economic sectors including agriculture and environment
NDC 3.0 – GEDSI provisions	National	Gender-responsive climate action; 30% women in climate decision-making target
Law on Rights of Persons with Disabilities (2009)	National	Disability-inclusive early warning and emergency response systems
ASEAN Gender Mainstreaming Strategic Framework 2021–2025	Regional	GEDSI embedded across environmental and agricultural frameworks

Framework	Level	GEDSI Relevance to HFSLM
ASEAN Socio-Cultural Community Blueprint 2025	Regional	Inclusive development; protection of vulnerable groups in environmental initiatives
ASEAN Guidelines on Recognition of Customary Tenure in Forested Landscape	Regional	Provide the legal and policy basis for the FPIC processes and communal land rights in IPLC project areas within ASEAN Member States.
CEDAW; Convention on Rights of Persons with Disabilities	International	State party obligations applied in HFSLM project design and finance

8.3 Vulnerable and Underserved Groups

8.3.1 Barriers to Participation and Benefit-Sharing

Different groups may face barriers to participating in and benefiting from HFSLM interventions. The table below outlines key vulnerable groups and the barriers they may encounter.

Barrier	Description	Groups Most Affected
Land tenure insecurity	Up to 80% of rural landowners lack formal land titles, and landless households comprise 12–20% of the rural population. Without secure tenure, many vulnerable groups cannot invest in or benefit from sustainable land management practices. Indigenous Peoples and landless communities face disproportionate exposure to land disputes, encroachment, and involuntary displacement, with weak dispute resolution mechanisms offering limited recourse. Lack of clarity around the land title registration processes.	Landless & land-poor households, Indigenous Peoples
Exclusion from decision-making	Women, Indigenous Peoples, persons with disabilities, youth, and landless households are underrepresented in land governance, community forest management, and project-level consultations, limiting their ability to shape outcomes that affect their livelihoods.	Women, Indigenous Peoples, Persons with Disabilities, Landless households, Youth
Limited access to finance	High-interest microfinance loans, lack of collateral, and the perception of smallholders and youth as high-risk borrowers restrict access to capital needed to transition to improved land-use practices. Land in Cambodia exists under hard titles and soft titles. Financial institutions will only accept hard titles as collateral, while a large portion of smallholder farmers and indigenous groups hold soft titles, limiting their access to formal financing.	Women, Youth, Smallholders, Indigenous Peoples
Barriers to training and	Social norms, mobility constraints, low literacy (especially for women in rural areas), disability, and childcare responsibilities	Women, Elderly, Persons with

Barrier	Description	Groups Most Affected
extension services	limit access to agricultural training, extension services, and technical support.	Disabilities, remote Indigenous communities
Dependence on forest and natural resources	An estimated 80% of Cambodia's rural poor depend on forests and agricultural land for subsistence. Land-use restrictions or fire prevention measures may inadvertently restrict access to non-timber forest products, affecting food security and income, particularly for women who rely on these resources daily.	Rural poor, Women, Indigenous Peoples
Information and market access gaps	Many rural and remote communities lack access to market information, carbon market mechanisms, and emerging HFSLM incentive structures, limiting their ability to participate in or benefit from new economic opportunities.	Indigenous Peoples, Women, Remote communities, Elderly
Language, literacy, and capacity	Literacy, language, and technical knowledge gaps may limit diverse groups from gaining awareness of HFSLM opportunities and participating/receiving its benefits.	Indigenous Peoples, Women, Elderly, Youth, Rural poor

Project designers must also assess unpaid care and domestic workloads that are remained invisible in formal economic data, yet are critical to understanding whether vulnerable groups can meaningfully participate in the HFSLM activities. In many rural Cambodian households, women carry the primary burden of childcare, elder care, and household chores alongside agricultural work. Engaging women in training programmes, cooperative leadership, or enterprise activities without accounting for these existing responsibilities can increase their overall burden. Additionally, the HFSLM activities may create intra-household and community-level social risks. When women gain new skills, income, or decision-making authority, this may trigger resentment or perceived threats to established community authority structures. When IPLC women or youth access finance or governance roles previously held by elders, community tensions may arise. Project designs must explicitly analyse these risks and develop proactive mitigation strategies, including male and elder engagement, community sensitisation, and accessible grievance mechanisms.

8.3.2 Areas of Opportunity

The table below identifies potential opportunities for HFSLM interventions may have in promoting inclusive and equitable outcomes.

Thematic Area	Opportunity	Target Groups
Participation & Representation	HFSLM governance and investment processes can promote and require women's meaningful participation at all levels. Frameworks can embed inclusive consultation and decision-making requirements, including FPIC, ensuring Indigenous Peoples and persons with disabilities shape investments affecting their lands and livelihoods.	Women, Indigenous Peoples, Persons with Disabilities

Thematic Area	Opportunity	Target Groups
Land Tenure & Resource Rights	HFSLM investments can be designed to prioritise communities with secure or improving tenure arrangements and can support tenure security as an enabling condition. Investments can reinforce land rights protections as a safeguard condition, ensuring they do not exacerbate existing tenure insecurity.	Landless & land-poor households, Indigenous Peoples
Livelihoods & Income	The transition to haze-free land management HFSLM presents an opportunity to develop alternative, inclusive livelihood pathways for those currently dependent on burning. HFSLM investments in residue management, forest restoration, and community-based models can generate new employment and income opportunities. Carbon finance and results-based payment mechanisms can recognise and reward Indigenous land stewardship with equitable benefit-sharing.	Women, Elderly, Smallholders, Landless households, Youth, Indigenous Peoples
Access to Finance	HFSLM financing instruments can incorporate gender-responsive criteria to reduce structural barriers to finance. The framework can advocate for and leverage concessional finance windows that reduce the cost of capital for vulnerable groups engaging in no-burn transitions.	Women, Youth, Landless households, Smallholders
Knowledge, Capacity, and Awareness	HFSLM investments in capacity building can be designed to prioritise outreach to groups historically excluded from extension services. Targeted awareness and capacity-building efforts can connect Indigenous communities and remote populations with relevant investment and livelihood opportunities. Knowledge and awareness raising materials should be designed to cater to low-literacy audience, with products also be available in local indigenous peoples' native dialects. Additionally, if project plans to introduce machinery (e.g., rice straw baling equipment), disability-inclusive design and access must be considered in procurement and training.	Women, Elderly, Persons with Disabilities, Indigenous Peoples
Health & Environmental Exposure	By reducing haze at source, HFSLM investments generate direct public health co-benefits that disproportionately benefit the most vulnerable, including children, pregnant women, elderly populations, and outdoor workers who face heightened exposure during peak burning seasons.	Children, Pregnant women, Elderly, Outdoor farm workers

8.4 GEDSI Integration Across Country's IF Components

8.4.1 Across Project Pipeline Development

The country's IF-HFSLM sets out requirements for projects in the pipeline to help ensure their design, implementation, and monitoring help achieve inclusive and equitable outcomes. The table below sets out the required activities:

Requirement	Description	When
GEDSI Analysis and Action Plan	Identify vulnerable groups and their specific needs, challenges, and barriers to participation in the project context. Map out activities to address identified challenges, with targets, indicators, responsible parties, timelines, and budget allocations.	Project onset
Budget Allocation	Dedicate a budget line to GEDSI activities to ensure planned actions can be implemented and are not treated as unfunded obligations. Consultations had mentioned 5% of project budget to be allocated to GEDSI activities as a baseline.	Project design
Baseline & Target Setting	Establish baselines and set targets for the percentage of women, youth, and other vulnerable groups in consultations, decision-making, and skills training. Include qualitative indicators to measure inclusion and impact. Additionally, target setting for SME financing through blended facility directed to women or youth-led enterprises.	Project onset, reviewed at midterm and endline
Disaggregated Data Collection	Collect and report data disaggregated by sex, age, disability, and ethnicity to enable tracking of project impacts across different groups.	Throughout implementation
Partnership with GEDSI-focused Institutions	Engage government bodies and civil society organisations that work directly with identified vulnerable groups in project design, implementation, and oversight.	Project design and implementation
Environmental & Social Safeguards	Apply environmental and social safeguarding standards to avoid, mitigate, minimise, and manage potential harm to project beneficiaries, including free, prior, and informed consent (FPIC), accessible grievance mechanisms, benefit-sharing schemes, and universal design principles applied in all EWS and community communication systems.	Project design and throughout implementation

8.4.2 Within Finance Plan and Instruments

The majority of financing sources targeted by the Cambodia's IF-HFSLM, including multilateral climate funds, bilateral development partners, DFIs, and VCM mechanisms, carry their own GEDSI and environmental and social safeguard (ESS) requirements. Projects in the pipeline should be designed to comply with the relevant requirements of their financing sources from the outset, and the activities outlined in Section 8.4 directly support this.

The GEDSI analysis and action planning requirements outlined in Section 8.4 also serve as a basis for identifying financing sources relevant to specific vulnerable groups. By systematically documenting the barriers different groups face in accessing finance, whether due to lack of collateral, high interest rates, or exclusion from formal lending, projects can identify and design tailored financing solutions. These may include microfinance products, orange bonds, cooperative financing approaches, or REDD+ benefit-sharing mechanisms, depending on the group and context.

Financing Mechanism	Description	Relevant Vulnerable Group
Cooperative financing	Group-based credit and savings models that pool collateral and reduce individual borrowing risk. Particularly effective where individual land titles are absent.	Women, Landless & land-poor households, Youth, Indigenous Peoples
Microfinance products	Small-scale loans and savings products tailored to low-income borrowers. Should be designed with concessional rates to avoid compounding existing debt burdens from high-interest loans.	Women, Youth, Elderly, Landless households
REDD + benefit-sharing mechanisms	Community-controlled distribution of carbon finance revenues tied to verified forest protection outcomes. The REDD+ model piloted in Cambodia demonstrates replicability for HFSLM community financing.	Indigenous Peoples, Landless & land-poor households, Women
Orange Bonds	Debt instruments financing gender-responsive and socially inclusive projects. Subject to feasibility assessment for the Cambodia context, orange bonds could channel capital toward women-led enterprises and inclusive value chains.	Women, Youth
Grant funding	Upfront capital for GEDSI activities, capacity building, and community-level feasibility work where commercial financing is not yet viable.	All vulnerable groups, particularly for early-stage project design

8.4.3 Monitoring & Evaluation

GEDSI outcomes will be tracked through the country's IF-HFSLM MRV Indicator Framework (Section 10), which includes disaggregated indicators for stakeholder consultation, training participation, decision-making and access to funding and equipment.

Relevant indicators could include:

Thematic Area	Indicator
Participation & Governance	% of women and vulnerable groups in project consultations and governance structures
Participation & Governance	% of women/IPLC/youth/PWD (depending on project context) in leadership roles in community governance and project decision-making bodies
Participation & Governance	FPIC processes documented in all project areas with Indigenous community presence
Livelihoods & Income	Numbers of households benefiting from alternative livelihood pathways, disaggregated by sex, age, and ethnicity
Access to Finance	% of project financing and benefit-sharing reaching women, youth, PWD, and IPLCs
Knowledge & Capacity	Number of beneficiaries trained in no-burn practices, disaggregated by sex, age, disability, and ethnicity
Knowledge & Capacity	Self-reported change in skills and confidence among trained beneficiaries, disaggregated by sex, age, disability, and ethnicity

Chapter 9. Institutional Arrangements and Delivery Mechanism

9.1 National Focal Point and Inter-Agency Task Force

The Ministry of Environment (MoE), acting through the General Directorate of Natural Protected Areas (GDNPA), serves as Cambodia's designated HFSLM national focal point. This role was confirmed when H.E. Dr. Srey Sunleang, Director General of GDNPA, chaired the First Consultative Meeting.³

Table 9.1. Ministerial Roles in HFSLM Implementation – Cambodia's IF-HFSLM

Institution	HFSLM Role	Key Responsibilities
MoE (GDNPA)	National focal point; ASEAN reporting lead	Country's IF coordination; environmental safeguards; forest/CPA management; MRV system oversight REDD+ coordination
MAFF	Agricultural transition lead	No-burn extension; crop residue management; commodity compliance standards; REDD+ coordination
MEF	Public finance and DFI engagement	Budget allocations; fiscal incentives; public-private partnership facilitation; DFI engagement
NBC	Banking sector sustainable finance	Green credit taxonomy; sustainable finance guidelines; risk-sharing instrument design
SERC	Capital market and green bond	Green bond regulation; ESG reporting standards; taxonomy for listed instruments
Mol / Provincial Authorities	Subnational enforcement and delivery	Fire prevention enforcement; local fire response; community engagement; land administration
GDNPA / CPAs	Community-based management	Community Protected Area operations; community patrol systems; biodiversity monitoring

Cross-sector deliberations at the March 2026 workshop confirmed the following refinements to institutional roles. MoE (GDNPA) is confirmed as the national focal point and chairs the inter-agency investment task force, with MAFF, MEF, CDC, and subnational authorities in defined supporting roles. ASMC is the preferred data source for official hotspot reporting within the ASEAN framework. For GEDSI-related activities, the Ministry of Women Affairs (MoWA) should be engaged at the project implementation level through direct service delivery. Participants did not support elevating MoWA to the steering committee level for this framework, noting its role is most effective at implementation rather than governance oversight. Land titling (for alienated state land used for agriculture, social land concessions, and communal titling for indigenous communities; this falls under the joint mandate of the Ministry of Land Management, Urban Planning and Construction, the Ministry of Interior, and the Ministry of Rural Development. MoE's mandate covers Protected Areas, including Community Protected Areas) falls under the joint mandate of the Ministry of Agriculture MAFF and the Ministry of Land Management: if land titling is a co-benefit of the IF, both ministries should be engaged as key institutional actors in relevant project activities. Community Protected Areas (CPAs) fall under MoE's (CPAs), a sub-category of Protected Areas (PAs) managed jointly between MoE and local communities under the Protected Areas Law (2008), fall under MoE's full mandate and must be engaged in any IF activities affecting these areas. Subnational capacity building

should be a specific IF investment component (see Section 11.3, p. 63), as approximately 50% of communes currently lack the capacity to write project proposals or request available funds.

9.2 Governance Structure

The IF-HFSLM governance structure operates across four interconnected delivery levels, each with defined institutional leadership and functional responsibilities. The structure ensures coordinated action between policy formulation, financial mobilisation, sectoral implementation, and subnational delivery, while avoiding duplication of mandates across line ministries. Figure 9.1 illustrates the four-level arrangement and the lead institutions assigned at each level, with the Ministry of Environment anchoring national coordination and ASEAN reporting.

NATIONAL LEVEL	FINANCIAL LEVEL	SECTOR LEVEL	SUBNATIONAL
MoE / GDNPA	MEF / NBC / SERC	MAFF / MoI	Provinces / CPAs
HFSLM Focal Point Inter-Agency Task Force ASEAN Reporting	Financing Instruments Green Taxonomy Investor Roundtable	Agricultural Transition Enforcement Extension Services	Delivery Community Engagement Local Monitoring

Figure 9.1. HFSLM Governance Structure – Four-Level Delivery Mechanism (Source: GEC & GGGI (2026). Cambodia IF-HFSLM Institutional Design.)

9.2 Provincial and Community-Level Implementation

The effective implementation of the IF-HFSLM will depend on strong coordination and delivery mechanisms at both the provincial and local levels. Provincial Departments of Environment and relevant Provincial Departments will play central roles in coordinating fire-risk reduction activities, sustainable land management interventions, awareness programmes, monitoring, and community engagement in priority landscapes.

District administrations, commune councils, CPAs, IPLCs, farmer cooperatives, women-led producer groups, extension officers, and community fire-management networks will contribute to local implementation, monitoring, awareness raising, and adoption of no-burn and sustainable land management practices. Strengthening subnational technical capacity, extension support, local coordination mechanisms, and community participation will therefore be critical for effective implementation of the IF-HFSLM.

Priority implementation activities at subnational level may include community fire prevention planning, sustainable agricultural residue management, wetland and forest restoration, local monitoring and early warning systems, awareness campaigns, and support for climate-resilient livelihood alternatives. Provincial coordination mechanisms should also support alignment between MoE, MAFF, subnational administrations, development partners, and private-sector actors operating within priority intervention landscapes.

Chapter 10. Monitoring, Reporting, Verification, and Transparency

The MRV system should serve four purposes: tracking environmental outcomes, supporting climate finance, ensuring investor confidence, and enabling adaptive management. It should measure not only activities completed, but also whether burning, haze exposure, GHG emissions, and ecosystem risks are actually reduced.

10.1 MRV Indicator Framework

Stakeholder consensus at the March 2026 consultation agreed on the following revisions to the MRV Indicator Framework (Table 10.1): (1) PM2.5 air quality should be added as a new indicator, with MoE using fixed and mobile monitoring stations for data collection, validated with the Ministry of Health, and published monthly with annual aggregation. MoE confirmed that PM2.5 targets are country-specific and should not wait for the ASEAN baseline review; Cambodia should establish its own PM2.5 baseline and target as part of the IF finalisation process. (2) ASMC is the preferred data source for official hotspot reporting within the ASEAN framework; NASA FIRMS data may be used as a complementary reference when necessary. For project-level monitoring, commercial platforms including Conservation International's real-time fire management solution may be used alongside ASMC and NASA data. (3) Data collection tools for GEDSI indicators shall include participatory surveys, community group registers, and agent-supported verification systems for remote communities. (4) The 75% rice straw reuse target requires revision to a more realistic level with a strengthened data foundation; specific data requirements identified include percentage of rice straw reused, volume collected, volume reused, and volume burned (GEC & GGGI, 2026)³¹.

Table 10.1. HFSLM MRV Indicator Framework – Cambodia IF-HFSLM

Category	Indicator	Baseline Target	2035 Target (NDC 3.0)	Data Source	Frequency
Fire reduction	High-confidence hotspots in priority provinces (dry season)	MoE (2024 data)	–40% vs. baseline	ASMC; NASA FIRMS; MoE platform	Monthly
Air quality	PM2.5 during fire season	MoE	≤ 50µg/m ³	MoE/health agencies	Seasonal
Land management	Hectares under verified no-burn management	Baseline TBC	300,000 ha	MAFF; satellite; field verification	Annual
Rice straw	Share collected for productive reuse (%)	<25% currently	75% (NDC target)	MAFF survey; value chain data	Annual
Emissions (FOLU)	GHG reduction from FOLU sector (MtCO ₂ e)	27.0 MtCO ₂ e BAU	–40 MtCO ₂ e conditional	National GHG inventory; UNFCCC	Biennial
Livelihoods	Households benefiting; income change (%); female participation (%)	Baseline from	Per-project targets	Project M&E; gender surveys	Annual

Category	Indicator	Baseline Target	2035 Target (NDC 3.0)	Data Source	Frequency
		project inception			
Finance	Volume of HFSLM finance mobilised (USD)	Near zero	USD 100M+ by 2035	MEF; DFI reports; NBC data	Annual
Compliance	Supply chains with no-burn standards; banks with HFSLM taxonomy	Zero currently	Per-action plan targets	MAFF; NBC/SERC	Annual
GEDSI	Disaggregated data – stakeholder consultation (%), training (%); access to funding or equipment (%)	Baseline from project inception	Per-project targets	Project M&E; gender surveys	Annual

10.2 Reporting and Review

- Quarterly inter-agency progress reports to the HFSLM Investment Task Force;
- Annual HFSLM performance report published on a public dashboard (MoE website);
- Biannual investor report for the National Investor Roundtable;
- Annual reporting to ASEAN mechanisms aligned with regional monitoring frameworks; and
- Mid-term review in 2027 (or in 2029-2030 if this IF extended for 2035) with independent technical assessment and stakeholder consultation.

Reporting should be designed for decision-making, not only compliance. Annual HFSLM performance reports should identify what worked, what failed, where hotspots persisted, which investments performed, and which policy or financing adjustments are required.

Chapter 11. Implementation Roadmap

Implementation should proceed through a phased approach that reflects Cambodia's policy cycle, project preparation needs, climate finance timelines, and local implementation capacity. The roadmap should distinguish between actions that can begin immediately and those requiring feasibility studies, institutional reform, budget allocation, or external finance.

11.1 Three-Phase Roadmap

Implementation of the IF-HFSLM follows three sequential phases aligned with Cambodia's policy cycle, climate finance timelines, and absorptive capacity. Phase 1 (Q1–Q2 2026) focuses on institutional readiness, formal IF adoption, and submission of initial GCF and GEF concept notes. Phase 2 (mid-2026 to end-2027) scales up pilot investments, activates blended finance instruments, and embeds the MRV system. Phase 3 (2028–2030) institutionalises HFSLM within national sector plans and budgets, moving the pipeline toward the full USD 690 million target by 2035. Table 11.1 sets out the priority actions, lead institutions, and expected milestones for each phase.

Table 11.1. Three-Phase HFSLM Implementation Roadmap

Phase	Timeframe	Priority Actions	Lead	Expected Milestone
Phase 1: Preparatory	0–6 months (Q1–Q2 2026)	Confirm HFSLM focal point; validate and adopt the IF; finalise 1–3 GCF/GEF concept notes; map monitoring systems; initiate green taxonomy work with NBC/SERC; conduct GEDSI and intersectionality baseline analysis for all Tier 1 project areas; and develop a GEDSI Action Plan in collaboration with MoWA	MoE / GGGI / GEC	IF-HFSLM formally adopted; first project pipeline submitted to GCF/GEF
Phase 2: Scale-Up	5–36 months (July 2026 – Dec 2027)	Launch circular bioeconomy pilots; operationalise blended finance facility; activate fire prevention and early warning investments; commence Tonle Sap restoration; publish first annual HFSLM report; initiate integration of HFSLM targets into national sector plans and budgets; embed MRV in climate finance systems (target completion by Q4 2027, aligned with GCF NCSD MRV timeline); implement GEDSI and intersectionality strategy across all active projects; and conduct a mid-term GEDSI performance review	MoE / MAFF / MEF	USD 30–50M mobilised; measurable fire reduction in Tier 1 provinces; MRV platform operational
Phase 3: Institutionalisation	3–5 years (2028–2030)	Complete and institutionalise HFSLM integration in national sector plans and budgets; scale to full USD 690M pipeline by 2035; embed MRV in climate finance systems; institutionalise National Investor Roundtable	RGC / MoE / MEF	2035 NDC 3.0

11.2 RACI Matrix – Roles and Responsibilities

Effective implementation of the IF-HFSLM will require clear institutional coordination and delineation of responsibilities among national and sub-national stakeholders. Given the cross-sectoral nature of haze-free sustainable land management, implementation responsibilities are shared across environmental management, agriculture, finance, banking, climate finance, local governance, and monitoring systems. The Responsible, Accountable, Consulted, and Informed (RACI) matrix provides an indicative framework for clarifying institutional roles and coordination arrangements for key implementation functions under the IF-HFSLM (Table 11.2).

Table 11.2. RACI Matrix – R: Responsible, A: Accountable, C: Consulted, I: Informed

Function	MoE	MAFF	MEF	NBC/SERC	Province	DFI / GCF
ASEAN reporting	R/A	C	C	I	I	I
Country's IF coordination	R/A	C	C	I	I	C
Agricultural no-burn programmes	C	R/A	I	I	C	I
Finance instrument design	C	C	R/A	C	I	C
Banking and green taxonomy	I	I	C	R/A	I	C
Subnational enforcement	C	C	I	I	R/A	I
MRV platform	R/A	C	C	C	C	C
Investor Roundtable	C	I	R/A	C	I	C
GEDSI integration	R/A	C	C	I	C	C

11.3 Budget and Technical Assistance Needs

Successful implementation of the country's IF-HFSLM will require targeted technical assistance, institutional strengthening, and early-stage investment support in addition to long-term financing for project implementation. Several enabling components – including project preparation, MRV systems, blended finance design, subnational capacity building, and GEDSI integration – will require grant, concessional, or technical assistance support before larger-scale investment can be effectively mobilised (Table 11.3).

Table 11.3. Budget and Technical Assistance Needs – Phase 1 (2026)

Need	Type	Estimated Cost	Funding Source
Country's IF project preparation (concept notes, feasibility studies)	Grant / TA	USD 500K – 1M	ASEAN-UK GTF; GCF Readiness; bilateral TA
MRV and digital monitoring platform	Grant + government co-finance	USD 2–3M	GCF; ADB; government ICT budget
Blended finance facility design and legal structuring	TA / Grant	USD 300–500K	ADB TA; World Bank; GGGI

Need	Type	Estimated Cost	Funding Source
Subnational capacity building (enforcement, extension, MRV)	Grant	USD 1–2M	GEF; bilateral donors; UNDP
GEDSI action planning and monitoring	Grant	USD 200–400K	ASEAN-UK GTF; UN Women; bilateral
National Investor Roundtable operations	Government budget	USD 100–200K/year	MEF / MoE operating budget

Achieving HFSLM in Cambodia, will require long-term political commitment, coordinated institutional action, sustained financing, scientific monitoring, and inclusive participation across government, communities, development partners, financial institutions, and the private sector. The IF-HFSLM establishes the foundation for this transition by linking environmental protection, climate mitigation, public health, sustainable agriculture, ecosystem restoration, and green investment into a unified national implementation framework. The success of the framework will ultimately depend not only on mobilising finance, but also on transforming land management practices, strengthening local capacity, and building resilient landscapes capable of supporting sustainable development under increasing climate and environmental pressures.

Annexes

Annex A: Full Project Pipeline Summary – Readiness and Funding Gaps

Annex A-1. Full Indicative Cambodia HFSLM Project Pipeline (23 January 2026 and 19 March 2026)

#	Project Concept	USD (M)	Obj.	Tier	Key Funders	Lead Agency	Key Readiness Gap
01	Sustainable Upland Agriculture and Crop Residue Management	25	1,2	T1	GCF, GEF, WB, ADB	MoE/MAFF/GGGI	Pre-feasibility; value chain analysis
02	Tonle Sap Flooded Forest and Wetland Fire Prevention	10	3	T1	GCF, GEF, IFAD, FAO	MoE/GDNP A	Concept note finalisation
03	Community-Based Fire Management and Fire-Free Village Programme	5	2,3	T1	ASEAN-UK, GEF, UNDP	MoE/GDNP A/CPAs	CPA capacity assessment; MRV design
04	National Fire Monitoring, MRV and Early Warning System	7	5	T1	GCF, WB, ADB	MoE/MAFF/MEF	Technical architecture; data protocols
05	Sustainable Finance Integration for HFSLM	3	4	T1	ASEAN-UK, GCF Readiness	NBC/SERC/MEF	NBC taxonomy process; ESG framework
06	Tonle Sap Wetland Restoration and Flood Resilience	60–70	3	T1	GCF, WB, ADB, GEF	MoE/FA/MAFF	Full feasibility; environmental assessment
07	Climate-Smart Inland Fisheries and Watershed Management	150	2,3	T2	GCF, IFAD, FAO, WB	MoE/MAFF/FiA	Scoping; fisheries data; watershed analysis
08	Early Warning Systems for Agricultural and Forest Fires	21.6	5	T1	GCF, ASEAN-UK, UNDP	MoE/GDNP A/Provinces	Technology platform; inter-agency protocols
09	Climate Finance Facility for Green SMEs and No-Burn Enterprises	200	1,4	T2	GCF, ADB, Banks	MEF/NBC/SERC/GGGI	Facility design; legal structure; pipeline
10	Urban Heat and Water Resilience – Tonle Sap Basin Cities	20	3	T2	GCF, ADB, GGGI	MoE/MLMU PC/GGGI	Urban scan; pre-feasibility

#	Project Concept	USD (M)	Obj.	Tier	Key Funders	Lead Agency	Key Readiness Gap
11	Green Logistics Decarbonisation	100	4,5	T2	GCF, Private, DFIs	MEF/MISTI/CDC	Master plan; investor interest scan
12	Forest Fire Prevention and Restoration Programme	80	3, 2	T1	GCF, GEF, GBFF, IFAD	MoE/GDNP A/Provinces	Pre-feasibility; fire risk mapping; IPLC consultation; restoration design
13	HFSLM Awareness, Capacity Building, Research and Knowledge Development	18	5, 1	T1	GCF Readiness, GTF, GIZ, UNDP	MoE/MAFF/Subnational	Training needs assessment; curriculum design; knowledge management platform
14	Open Burning and Waste Management (Urban and Rural)	35	1, 5	T2	ADB, World Bank, GCF	MoE/MoI/Municipalities	Urban waste audit; residue stream mapping; collection system design
15	Green Taxonomy Development and Implementation for HFSLM Finance	5	4, 5	T1	ADB, IFC, GCF Readiness	NBC/SERC/MEF/GGGI	Taxonomy scope definition; legal drafting; FI consultation; alignment with AIF criteria

Annex A-2: Standard HFSLM Project Types – Recognisable to Investors

Project Type	Core Components	Revenue Model	Finance Structure	Replication
No-Burn Residue Solutions	Straw baler cooperatives; aggregation hubs; biochar/compost/paper/packaging processing; offtake agreements	Product sales; service fees; potential carbon credits	Blended finance (first-loss + concessional + commercial)	HIGH – all rice provinces
Sustainable Farming Packages	Mechanised land prep; AWD; digital traceability; bundled inputs; compliance tracking	Commodity sales under no-burn standards;	Portfolio credit via cooperatives; bundled credit + extension	HIGH – rice, maize, cassava

Project Type	Core Components	Revenue Model	Finance Structure	Replication
		supply-chain finance		
Fire Prevention Services	Satellite EWS; CPA patrol; rapid response; risk mapping	Public contracts; performance-based fire reduction payments	GCF grants; results-based finance; bilateral donors	MEDIUM – CPA structure provinces
Restoration and Rewetting	Assisted regeneration; floodplain restoration; hydrological rehab; community stewardship	Carbon credits; results-based climate finance; biodiversity credits	GCF/GEF grants; performance payments; VCM	MEDIUM-HIGH
Supply Chain Traceability Platforms	Farm registration; satellite compliance; export certification; ESG dashboard	Subscription fees; buyer co-investment; alignment fees	PPP; buyer co-investment; green finance facility	HIGH – all ag exports

Annex B: Standard Project Concept Note Template with GEDSI Standards

Section	Content Required	GEDSI Minimum Standard
1. Project Title and Summary	Name; location; AIF-HFSLM objective; indicative cost; lead agency; beneficiaries; alignment	N/A
2. Problem Statement	Specific fire/haze driver; affected population; baseline data; consultation evidence	Identify gender and social dimensions of the problem explicitly
3. Proposed Solution	No-burn alternative; innovation element; scalability; AIF alignment; environmental rationale	Confirm solution is accessible to women, IPLCs, and PWDs
4. Target Beneficiaries	Number of households; geographic scope; GEDSI disaggregation (women %, IPLCs, PWDs)	Sex-disaggregated projection required; ≥40% women target in governance
5. Financial Requirements	Total investment; grant; concessional; commercial; revenue model; GEDSI budget (min 5%)	GEDSI budget line of ≥5% total project budget – mandatory in concept note
6. Risk Assessment	Technical, market, climate, institutional, social risks; mitigation measures	Social risks must include: exclusion, elite capture, tenure displacement

Section	Content Required	GEDSI Minimum Standard
7. GEDSI Action Plan	Vulnerable group analysis; inclusion targets; activity plan; monitoring indicators	Mandatory – reviewed by MoWA focal point before approval
8. MRV Framework	KPIs; baseline; data collection; reporting schedule; link to national systems	Sex-, disability-, and ethnicity-disaggregated indicators required
9. Implementation Arrangement	Lead ministry; implementing agency; subnational delivery; community engagement plan	FPIC documentation required if IPLC areas are involved
10. Timeline and Budget	Preparation phase; milestones; exit strategy; phase-by-phase budget	GEDSI activities must be explicitly budgeted in each phase

Annex C: Government Commitments Tracker

Commitment	Lead Agency	Deadline	Expected Output	Status (Feb 2026)	Monitoring / Coordination Body
Formally adopt the Country's IF-HFSLM	MoE / RGC Cabinet	Q3 2026	Official policy document; government endorsement letter	In preparation – stakeholder consultation completed	MoE GDNPA; ASEAN Secretariat (for information)
National HFSLM focal point and inter-agency coordination	MoE (GDNPA)	Q1 2026	Designated office; inter-agency task force with ToR	In progress – MoE GDNPA confirmed as lead	MoE GDNPA; inter-agency task force
NDC 3.0 submitted to UNFCCC	MoE	July 2025	Final NDC 3.0 with FOLU and agriculture targets	Completed ✓	UNFCCC; MoE
Integrate HFSLM in national green finance taxonomy	NBC / SERC / MEF	Q3 2026	Published taxonomy with HFSLM criteria embedded	Sustainable finance discussions initiated	NBC / SERC; MEF
No-burn compliance guidelines for	MAFF / MoE	Q2 2026	Published compliance guidelines for	Draft stage – MAFF review underway	MAFF; MoE

Commitment	Lead Agency	Deadline	Expected Output	Status (Feb 2026)	Monitoring / Coordination Body
commodity supply chains			rice, maize, cassava		
QIP eligibility for HFSLM enterprises and equipment	MEF / CDC	Q3 2026	Updated QIP guidance including HFSLM criteria	Not yet started – QIP review to be initiated	MEF; CDC
Subnational fire enforcement budget allocation	MoI / Provinces	Q2 2026	Provincial budget line for fire prevention	Under discussion in provincial budget planning	MoI; provincial offices
Submit first GCF/GEF concept note	MoE / GGGI	Q4 2026	Formal concept note submitted to GCF or GEF	Concept development with GEC/GGGI underway	MoE; GCF Country Coordinator
Accelerate Communal Land Titling in IPLC provinces	MLMUPC / MoE	Q4 2027–2028	Provincial CLT assessment; accelerated processing	Provincial assessment in progress	MLMUPC; GDNPA
National carbon registry operational	SERC / MoE	2027	Online registry; tracking platform; compliance procedures	Planning stage – SERC leading coordination	SERC; MoE; MEF

Annex D: Stakeholder Engagement Plan

Activity	Purpose	Participants	Date	Lead
First National HFSLM Consultative Meeting (completed)	IF input; pipeline validation; government commitment building	698 stakeholders – government, DFIs, banks, CSOs, private sector. Approximately 42 male and 26–2827 female participants. Age range: 21–55 years, with most	23 January 2026, Phnom Penh	MoE / GGGI / GEC

Activity	Purpose	Participants	Date	Lead
		participants between late 20s and mid-40s.		
Focus Group Discussion 1 (completed)	Baseline — haze sources, impacts, affected groups	~20 stakeholders: provincial, agricultural, CSO	23 January 2026 (AM)	GEC / GGGI
Focus Group Discussion 2 (completed)	Investment prioritisation — landscapes, commodities, solutions	~24 stakeholders: DFIs, banks, MAFF, agriculture sector	23 January 2026 (PM)	GEC / GGGI
Focus Group Discussion 3 (completed)	Bankable investment concepts and phased action plan	~24 stakeholders: government, DFIs, project developers	23 January 2026 (PM)	GEC / GGGI
Second HFSLM Consultative Meeting (completed)	IF input; pipeline validation; government commitment discussion	90 stakeholders — government, DFIs, banks, CSOs, private sector. Approximately 49 male and 41 female participants. Age range: 21–55 years, with most participants between late 20s and mid-40s.	19 March 2026, Phnom Penh	MoE / GGGI / GEC
Inter-agency Task Force Meetings (planned quarterly)	Coordination; pipeline tracking; policy alignment	MoE, MAFF, MEF, NBC, SERC, Mol, MoWA	From Q2 2026	MoE GDNPA
National Investor Roundtable (planned biannual)	Investment pipeline engagement; deal structuring	DFIs, banks, corporates, impact investors, government	From Q3 2026	MEF / MoE
Provincial HFSLM Consultation — Tier 1 Provinces (planned)	Subnational validation; community engagement; GEDSI assessment	Provincial authorities, community leaders, IPLC representatives, women farmers	Q2–Q3 2026	MoE/GDNPA/MAFF Provinces
Mid-Term Review Consultation (planned)	Country's IF performance assessment; pipeline adjustment	All IF stakeholders; independent technical reviewers	2027	MoE / GGGI

Annex E: Risk Assessment Matrix

Risk	Category	Likelihood	Impact	Risk Level	Mitigation Strategy
Delayed country's IF adoption	Institutional	Medium	High	HIGH	GEC/GGGI TA support; ASEAN-UK milestone accountability; RGC high-level endorsement
Limited inter-agency coordination	Governance	Medium	High	HIGH	Inter-agency task force with MEF co-chair; quarterly mandatory review; RACI matrix enforced
Limited bank willingness to lend to HFSLM	Financial	Medium	High	HIGH	NBC guidelines; DFI partial credit guarantees; pilot credit line demonstration; CGCC activation
Biomass market development slower than expected	Market	Medium	Medium	MEDIUM	Anchor buyer pre-commitments; market facilitation TA; demand-side procurement standards
Climate variability and El Niño intensifying fires	Climate	High	High	HIGH	Early warning investment; adaptive management provisions in project designs and MRV
IPLC exclusion from green finance benefits	Social/ GEDSI	Medium	High	HIGH	FPIC protocols; CLT acceleration; community enterprise grants; GEDSI budget mandated
Carbon market price volatility (VCM)	Financial	Medium	Medium	MEDIUM	Diversify revenue streams; avoid over-reliance on carbon revenue in financial models
Subnational enforcement capacity gap	Governance	Medium	Medium	MEDIUM	Bilateral TA for provincial enforcement officers; provincial enforcement budget allocation
Private sector disengagement	Market	Low-Med	High	MEDIUM	National Investor Roundtable; standardised project packages; ESG procurement policy mandates

Risk	Category	Likelihood	Impact	Risk Level	Mitigation Strategy
Failure to secure GCF/GEF funding in first cycle	Financial	Low-Med	High	MEDIUM	Multiple concept submissions; ASEAN-UK bridge funding; bilateral fallback during preparation

Annex F: Glossary of Key Terms

Term	Definition
AIF-HFSLM	ASEAN Investment Framework for Haze-Free Sustainable Land Management 2023–2030 – the regional framework within which Cambodia's IF is developed.
Article 6 (Paris Agreement)	Mechanism for international carbon market cooperation, including internationally transferred mitigation outcomes (ITMOs) – relevant to Cambodia's carbon credit pathways.
AWD (Alternate Wetting and Drying)	Alternate Wetting and Drying. Water-efficient rice cultivation technique that reduces water use by 30% and lowers methane emissions – a key HFSLM co-benefit aligned with Cambodia's NDC 3.0.
Blended Finance	Strategic use of public or concessional capital – often in a first-loss position – to mobilise additional commercial capital toward development outcomes at acceptable risk levels.
CGCC	Cambodia Guarantee Corporation for Credit – provides partial credit guarantees to commercial banks to expand SME and agricultural enterprise lending.
CPA	Community Protected Area – community-governed conservation and management zones in Cambodia, key delivery mechanism for community-based fire prevention.
FPIC	Free, Prior, and Informed Consent – the right of Indigenous Peoples to be meaningfully consulted and give consent before any project affecting their lands, livelihoods, or community structures.
GEDSI	Gender Equality, Disability, and Social Inclusion – framework ensuring equitable access, participation, and benefit sharing across all HFSLM investments.
HFSLM	Haze-Free Sustainable Land Management – practices, governance, and investments that prevent land and forest fires and eliminate harmful open burning.
IF-HFSLM	Investment Framework – this document; Cambodia's country-level instrument for operationalising the AIF-HFSLM.
MRV	Monitoring, Reporting, and Verification – the system for tracking, reporting, and independently verifying environmental and investment outcomes.

Term	Definition
NTFP	Non-Timber Forest Products — forest resources (plants, fungi, wildlife) other than timber, used for rural livelihoods in forest-dependent communities.
QIP	Qualified Investment Project — Cambodia's investment promotion mechanism providing corporate income tax holidays and import duty exemptions for eligible projects.
REDD+	Reducing Emissions from Deforestation and Forest Degradation — climate finance mechanism rewarding countries for verified forest carbon benefits.
Results-Based Finance	Financial payments made upon verified achievement of pre-defined environmental or social outcomes — fires avoided, hectares restored, emissions reduced.
Tonle Sap	Southeast Asia's largest freshwater lake, located in central Cambodia, whose seasonal flood pulse supports major biodiversity, fisheries, and agricultural livelihoods. A priority HFSLM landscape.
VCM	Voluntary Carbon Market — market where carbon credits from emission reduction projects are bought and sold on a voluntary basis outside mandatory compliance systems.

Annex G: Supplementary GEDSI Context and Initial Recommendations

GEDSI Context in Cambodia

Haze and unsustainable land management practices affect population groups in Cambodia differently depending on their health status, livelihoods, and access to natural resources. Certain groups are particularly susceptible to the health impacts of air pollution and smoke exposure⁵⁸:

- **Children**, particularly those under five years of age, who face higher risks of respiratory illness and long-term health impacts.
- **Elderly persons and individuals with pre-existing respiratory conditions**, who are more vulnerable to complications from poor air quality.
- **Pregnant women and immunocompromised individuals**, who may face increased health risks during haze episodes.
- **Workers exposed to outdoor pollution**, including agricultural labourers, street food vendors, grill workers, waste pickers, and street sweepers who experience prolonged exposure to smoke and particulate matter

Livelihood and land management vulnerability:

Other vulnerable groups are affected through their reliance on land, forests, and natural resources for livelihoods:

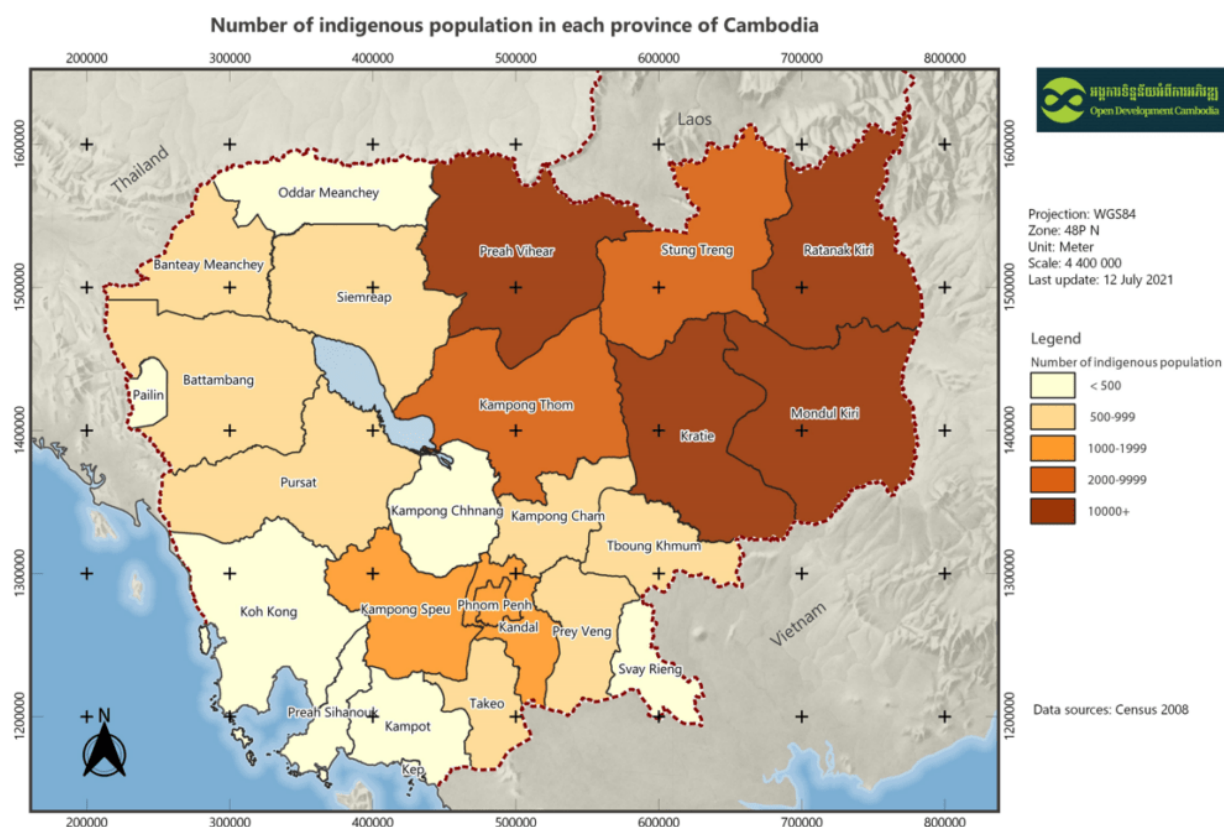
Women: Agriculture employs more than two-thirds of Cambodian women, yet structural gender inequalities significantly limit their participation and benefit-sharing.⁵⁹ Women face a triple work burden combining productive, reproductive, and community roles, with limited recognition or compensation. Only around 12% of total agricultural land in Cambodia is owned by female-headed households, and the gender credit ratio stands at 1:5, meaning only one woman receives credit for every five men. Women have limited access to extension services, training, and market information due to social norms, mobility constraints, low literacy levels, and childcare responsibilities. Women are also underrepresented in leadership and decision-making roles at both community and government levels, and sex-disaggregated data in the sector remains insufficient.⁶⁰

Youth: Cambodia has one of the youngest populations in Southeast Asia, with one in five Cambodians aged 15–24 and nearly two-thirds under 30. Agriculture remains the primary income source for rural youth, yet the sector is increasingly unattractive due to difficulties accessing land, limited financial services, as young farmers are considered higher-risk borrowers, and a lack of technical skills and training. Rural-to-urban migration is accelerating, leaving an ageing agricultural workforce and widening rural labour gaps. High-interest microfinance loans targeting rural youth and the poor represent a growing financial vulnerability.⁶¹

Elderly: In Cambodia's agricultural sector, elderly farmers represent a key vulnerable group, particularly in rural areas where over 80% of older people reside with limited infrastructure and resources. With youth out-migration accelerating the ageing of the rural farming population, elderly farmers increasingly bear the burden of cultivation with limited physical capacity, reduced ability to adopt new technologies, and inadequate social protection coverage, making them especially susceptible to the impacts of land degradation and environmental change.⁶²

Indigenous Peoples: As of 2024, Cambodia officially recognizes up to 27 Indigenous groups, with most residing in the northeastern provinces of Ratanakiri, Mondulhiri, Kratie, Preah Vihear, Stung Treng, and Kampong Thom. Approximately 92% of working-age Indigenous Peoples are engaged in

agriculture, predominantly through subsistence agro-forestry and swidden cultivation, often without access to formal land titles or extension services.⁶³ While progress has been made, with 198 communities officially recognized and collective land titles covering nearly 34,000 hectares by late 2024, enforcement of land protections remains limited and communities remain vulnerable to encroachment, land grabbing, and exclusion from land management decision-making processes. Among the groups most relevant to the HFSLM context are the Bunong in Mondulkiri and the Kreung, Tampuan, and Jarai in Ratanakiri Province, whose livelihoods are closely tied to the forest and agricultural landscapes targeted by the framework.⁵⁹



Persons with Disabilities: According to the CDHS 2021–2022, approximately 3.44 million people (24.4% of the population aged five and above) report some degree of disability, with prevalence higher among women, the elderly, and rural populations.⁶⁵ Persons with disabilities face structural barriers to agricultural participation, including lower levels of formal education, limited access to extension services and vocational training, and community discrimination that restricts employment and business opportunities even where skills exist. These barriers reduce their ability to access sectoral programs, adopt improved land-use practices, access up-to-date resources and information, or engage meaningfully in decision-making processes.⁶⁶

Landless and Land-Poor Households: As of 2009, 80% of rural landowners lacked formal land titles, and landless communities made up an estimated 12–20% of the rural population.⁶⁷ Additionally, in 2014, 80% percent of Cambodia’s rural poor depend on forests and agricultural land for subsistence and livelihoods and the collection and trade of non-timber forest products.⁶⁸ Without secure tenure or management rights, landless households face persistent food insecurity and reduced agricultural income. Land disputes are common, with rural communities typically in a weaker position when facing external actors holding formal concession agreements or land titles. Opportunity for dispute resolution mechanisms to be strengthened.

Sources for the above statistics: NIS Cambodia Socio-Economic Survey (CSES, 2019–2020); World Bank, Cambodia Sustaining Strong Growth for the Benefit of All (2020); and MAFF, Cambodia Agriculture Sector Master Plan to 2030 (2022).

Intersectionality and Additional Vulnerable Groups: Vulnerability in Cambodia's agricultural and land management context is rarely singular. Vulnerabilities are compounded across gender, age, ethnicity, disability status, and socioeconomic position. These overlapping vulnerabilities can result in systematic exclusion from land rights, financial services, training, and decision-making, meaning that interventions designed around single-category groups risk addressing intersectional vulnerabilities. Additional vulnerable groups may emerge depending on the specific context, scope, and location of individual projects. A robust GEDSI approach must therefore apply an intersectional lens to targeting and consultation, and the framework will put in place measures to ensure project-level GEDSI analyses are conducted to identify and address these vulnerabilities, ensuring no group is inadvertently excluded.

Several structural barriers limit equitable access to HFSLM investments and their benefits. These barriers emerged clearly during community consultations and are reflected in Cambodia's broader policy landscape.

Barriers and Initial Recommendations

Table AG.1. Structural Barriers to GEDSI Integration in Cambodia's HFSLM Context

Structural Barrier	Affected Groups	Consequence for HFSLM	Recommended Action
Incomplete Indigenous Communal Land Titling	IPLCs in Mondulkiri, Ratanakiri, Preah Vihear	No formal land tenure prevents access to green finance; fire prevention efforts undermined by land insecurity	Accelerate CLT process; integrate FPIC into all project designs; engage Mol and MoE
Limited collateral access for women	Women smallholder farmers nationally	Women excluded from equipment loans and SME finance despite central agricultural role	Design group-based credit and cooperative collateral mechanisms; apply minimum 30% women financing target
Language and literacy barriers in ethnic communities	Indigenous communities; remote forest-edge provinces	Early warning systems and training materials inaccessible in local languages	Produce materials in Khmer and ethnic minority languages; use pictorial and radio-based communication
Underrepresentation in commune and forest governance	Women; youth; IPLCs	Community fire management plans and CPA governance reflect elite interests; GEDSI goals bypassed	Apply minimum 40% women participation standard in all governance bodies; capacity building for marginalised groups
Accessibility gaps for persons with disabilities	PWDs in rural provinces	EWS alerts, evacuation routes,	Universal design standards in all community EWS; disability-

Structural Barrier	Affected Groups	Consequence for HFSLM	Recommended Action
		and support services not designed for mobility or sensory impairments	accessible communication channels
Digital exclusion	Remote communities; elderly; women with low literacy	MRV platforms and traceability systems exclude non-digital users	Hybrid digital-analogue data collection; agent-supported verification systems

Project designers must also assess unpaid care and domestic workloads that remain invisible in formal economic data, yet are critical to understanding whether vulnerable groups can meaningfully participate in HFSLM activities. In many rural Cambodian households, women carry the primary burden of childcare, elder care, and household chores alongside agricultural work. Engaging women in training programmes, cooperative leadership, or enterprise activities without accounting for these existing responsibilities can increase their overall burden. Additionally, HFSLM activities may create intra-household and community-level social risks. When women gain new skills, income, or decision-making authority, this may trigger resentment or perceived threats to established community authority structures. When IPLC women or youth access finance or governance roles previously held by elders, community tensions may arise. Project designs must explicitly analyse these risks and develop proactive mitigation strategies, including male and elder engagement, community sensitisation, and accessible grievance mechanisms.

The Second National Consultative Workshop and GEDSI Focus Group Discussions (19 March 2026) yielded the following additional findings on vulnerable groups. Where the IF introduces mechanisation such as rice straw baling equipment, disability-inclusive design principles must be embedded in procurement specifications and training programmes from the outset. Low literacy rates – particularly among women – represent a significant barrier to participation. All awareness-raising materials, project communications, and training resources must be designed for low-literacy audiences. Where IPLC communities are engaged, materials must also be available in local indigenous peoples' dialects. The elderly population engaged in the agriculture sector has consistently encountered difficulty accessing information from development projects and institutional programmes. This challenge has been documented across multiple past interventions in Cambodia. Community needs assessments are required at the project design stage. The GEDSI profile, priority needs, and community context vary significantly across hotspot locations, and project interventions must be tailored accordingly. Grievance mechanisms modelled on the REDD+ benefit-sharing approach were highlighted as an effective tool for inclusive community engagement (GEC & GGGI, 2026)³¹.

Initial Recommendations for Embedding GEDSI in IF Identified Areas

Potential Initial Opportunity Areas for Vulnerable Groups and Investment Models

Table AG.2. GEDSI Opportunity Areas in Cambodia's HFSLM Investment Framework

Opportunity Area	Description	Investment Model	Expected Outcome
Women-led fire-free value chains	Women dominate post-harvest rice handling and informal residue collection; structured into cooperatives, they can anchor biomass supply chains	Group credit + offtake contract + cooperative organisation grant	Women-controlled residue enterprises; reduced burning; increased income
Inclusive community forest governance	Strengthen CPA governance to include women and IPLC leadership under transparent benefit-sharing rules	Grant + capacity building + legal support for CLT	Reduced elite capture; improved fire patrol compliance; community trust in HFSLM mandate
Aggregation of smallholders into carbon markets	Small landholders cannot access voluntary carbon markets individually; grouped under community-led verified no-burn schemes they can	Results-based finance + community aggregation platform	Carbon finance reaches smallholders; sustainable income from verified outcomes
Disability-inclusive early warning systems	Universal design in provincial EWS ensures PWDs, elderly, and language minorities receive timely fire alerts	TA grant + government EWS system upgrade	Reduced health exposure; increased compliance; social accountability
Participatory land-use planning	Bottom-up landscape zonation using community knowledge improves fire risk mapping and investment targeting	Grant-funded participatory mapping + GIS capacity building	Accurate hotspot data; community ownership of HFSLM targets
Inclusive disaster risk reduction	Link HFSLM community response teams with DRR frameworks under NCDM; include GEDSI in emergency preparedness plans	Government budget + bilateral TA	Reduced fire-related mortality; HFSLM embedded in national resilience architecture

The March 2026 consultation highlighted the REDD+ benefit-sharing mechanism as a proven, replicable model for inclusive community financing with direct relevance to HFSLM. During the session, an indigenous peoples' representative shared that a non-profit had facilitated a community-driven process to allocate REDD+ benefit-sharing funds, including for community forest patrols. This model demonstrates that community-controlled benefit-sharing arrangements can concurrently deliver environmental outcomes, strengthen community governance structures, and build IPLC financial and institutional capabilities. The IF should consider REDD+ benefit-sharing architecture as a design template for community-level financing instruments under Objectives 2 and 3 (GEC & GGGI, 2026)³¹.

Potential Initial Entry Points for GEDSI in Identified Strategies

The matrix below maps GEDSI entry points, Cambodia pipeline projects, and monitoring indicators across all five AIF-HFSLM objectives, drawn from the various existing policies in place.³

Table AG.3. GEDSI Integration Matrix by AIF-HFSLM Objective – Cambodia IF

AIF Strategy	GEDSI Entry Points	Cambodia Pipeline Project	Proposed GEDSI Indicators
OBJECTIVE 1: Haze-Free Agriculture and No-Burn Commodity Production			
Strategy 1.1: Establish or strengthen haze-free commodity supply chains	Promote women-led and youth-led SMEs in residue value chains. Ensure inclusive access to mechanisation. Strengthen cooperatives with women in leadership roles.	#01 Sustainable Upland Agriculture #09 Climate Finance Facility – Green SMEs	% zero-burn farmers who are women % supported SMEs owned by women/youth/PWDs % cooperative leadership held by women (target ≥40%) No. women farmers trained in no-burn practices
Strategy 1.2: Invest in circular economy adoption across sectors	Support women, youth, and IPLCs in bio-economy enterprises (biochar, composting, straw paper). Include GEDSI indicators in SME finance.	#09 Climate Finance Facility – Green SMEs #11 Green Logistics Decarbonisation	No. circular economy enterprises supported (gender, youth, IPLC disaggregated) % SME finance directed to women-/youth-led enterprises (target ≥30%) No. new jobs created (sex and age disaggregated)
OBJECTIVE 2: Support for Indigenous Peoples and Local Communities			
Strategy 2.1: Empower and incentivise IPLCs for fire-free land management	Recognise customary land rights via CLT. Ensure women's representation in community forest governance. Include PWDs	#03 Community-Based Fire Management	% community management committees with ≥40% IPLC women No. CLT processes completed per province

AIF Strategy	GEDSI Entry Points	Cambodia Pipeline Project	Proposed GEDSI Indicators
	in consultation and benefit sharing. Apply FPIC.	#02 Tonle Sap Flooded Forest Prevention	FPIC compliance rate in all IPLC project areas
OBJECTIVE 3: Sustainable Forest and Peatland / Wetland Management			
Strategy 3.1: Prevent and reverse forest degradation by fire	Include women in fire patrol teams (≥40%). Support alternative livelihoods for forest-dependent families. Ensure PWDs and elderly can access EWS.	#06 Tonle Sap Wetland Restoration #03 Community Fire-Free Village Programme	% of fire patrol teams including women (target ≥40%) No. households accessing alternative livelihoods (gender disaggregated) % of EWS accessible to PWDs and elderly
Strategy 3.2: Protect, manage, and restore wetland ecosystems	Support women-led fishery groups in wetland restoration. Ensure IPLCs participate in hydrological management decisions.	#02 Tonle Sap Flooded Forest Prevention #07 Climate-Smart Inland Fisheries	Ha. restored with community participation (disaggregated by gender, youth, IPLC) % wetland governance committees with women in leadership
OBJECTIVE 4: Sustainable Finance Integration			
Strategy 4.1: Restrict finance to burning-linked land practices	Apply Environmental and Social Safeguards in financial screening. Include gender and social risk screening. Establish grievance mechanisms for excluded groups.	#05 Sustainable Finance Integration for HFSLM	% financial institutions applying gender-responsive ESG screening No. grievance cases resolved No. instruments with GEDSI criteria embedded
Strategy 4.2: Scale up financing for haze-free SLM	Dedicated green credit lines for women entrepreneurs. Guarantee schemes for vulnerable group enterprises. Ensure carbon markets include community benefit sharing.	#09 Climate Finance Facility – Green SMEs	% climate finance to women-, IPLC-, youth-led enterprises % carbon revenue shared with communities (gender disaggregated)
OBJECTIVE 5: Governance, Capacity, and Awareness			
Strategy 5.1: Strengthen national and local HFSLM capacity	Develop gender-responsive training modules. Disaggregated data collection by sex, age, disability, ethnicity. Include women and IPLCs in MRV governance.	#08 Early Warning Systems #04 National MRV Platform	% trainees who are women, youth, or IPLC No. provinces with GEDSI-integrated monitoring % MRV governance committees with women in leadership

AIF Strategy	GEDSI Entry Points	Cambodia Pipeline Project	Proposed GEDSI Indicators
Strategy 5.2: GEDSI-responsive early warning and ASEAN capacity	Design GEDSI-responsive EWS. Ensure community communication systems accessible to women, elderly, PWDs, and language minorities.	#08 Early Warning Systems	% EWS materials incorporating GEDSI principles No. EWS accessible to all vulnerable groups % EWS technical committees with women and PWD representation

Focused group discussions in March 2026 identified additional GEDSI-linked financing instruments that should be reflected in Table 8.4 (p. 56) under Objective 4 (Sustainable Finance Integration): a feasibility study on Orange Bonds is currently being conducted by SERC, which intends to pursue this option further; Gender Bonds were proposed as a practical capital market instrument for GEDSI-linked financing; and LOLC reported that 70% of its borrowers are women with an average loan size of approximately USD 5,000, demonstrating that women borrowers are a viable and low-risk client segment for financial institutions. The banking industry has a mandate requiring that 1% of staff are persons with disabilities, as noted by Phillip Bank. CGCC operates a Women Entrepreneurship Guarantee Scheme and an EERF (Empowerment and Economic Resilience Fund) discount fee for women-owned businesses. These existing instruments should be explicitly referenced in the IF's gender-responsive green financing scheme (GEC & GGGI, 2026)³¹.

Potential Performance Standards Consulted During Validation Workshop

Cambodia IF – Core GEDSI Performance Standards

-  All HFSLM projects collect sex-, age-, disability-, and ethnicity-disaggregated beneficiary data.
-  Minimum 40% participation of women in community governance structures and cooperative leadership.
-  At least 30% of SME financing through the blended facility directed to women- or youth-led enterprises.
-  Mandatory gender and social risk screening in all sustainable finance instruments (GCF ESS aligned).
-  Dedicated GEDSI budget allocation (minimum 5% of project budget) in every project design.
-  Functional grievance redress mechanisms accessible at commune level in all project provinces.
-  FPIC processes documented before any activity in areas with Indigenous community presence.
-  Universal design principles applied in all EWS and community communication systems.

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