

Malawi National Adaptation Plan

Forestry Sector M&R Framework and Indicator Definition Sheets (IDS)



September, 2026

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FORESTRY SECTOR INDICATORS

STRATEGY 1. SUSTAINABLE FOREST MANAGEMENT (SFM)

Adaptation Action 1: Scale up climate-resilient native forest restoration and tree-site matching in degraded conservation areas to buffer drought, floods and temperature rise.

Objective: Promote sustainable forest management by restoring degraded conservation areas and enhancing native species resilience to climate stress.

Level	SMART Indicator	Baseline (2024)	Target (2030)	Metric	Means of Verification
Output	Total hectares of native forest tree species planted and protected in site-matched degraded conservation areas	TBD	≥132,000 ha (≥600,000 ha potential)	Hectares	NFMS; District Forestry Office records
Outcome	% increase in forest cover and native forest tree species density in reforested conservation zones	24.4%	50%	%	Satellite imagery; Ground verification: Department of Forestry Strategic Plan
Impact	Carbon sequestration capacity from reforested conservation areas (MtCO ₂ e/year)	Baseline TBD	≥2.5 MtCO ₂ e/year	MtCO ₂ e	National GHG Inventory; Carbon accounting reports

STRATEGY 2: CUSTOMARY AFFORESTATION & REFORESTATION

Adaptation Action 2: Scaling up climate smart Natural regeneration programmes

Objective: promote sustainable management of forests using cost-effective, community-based natural regeneration techniques.

Level	SMART Indicator	Baseline	Target	Metric	Means of Verification
Output	Hectares of degraded land under Farmer Managed Natural Regeneration (FMNR) or Assisted Natural Regeneration (ANR)	<42,045.69 ha	≥67,045.69 ha	Ha	Field reports; NFMS datasets
Outcome	% increase in forest cover	24.4	26.4	%	Remote sensing; Ground-truthing assessments
Impact	% improvement in ecosystem services (e.g. carbon sequestration, erosion control)	Low	≥50%	%	Ecosystem service monitoring reports

STRATEGY 3: COMMUNITY BASED FOREST MANAGEMENT (CBFM)

Adaptation Action 3: Restore forest cover on degraded customary land and nonarable land in agricultural landscapes by expanding area and improving management of village forest areas and woodlots through demarcation, strengthened community bylaws, and agreements for protection against uncontrolled cutting, grazing, and fire

Objective: promote participation of local communities, the civil society and the private sector in forestry management and conservation.

Level	SMART Indicator	Baseline (2024)	Target (2030)	Metric	Means of Verification (MoV)
Output	Number of VNRMCS revamped/formed	375	17800,000	Count (	Districts reports;

	Number of VNRMCS trained in Forest management	300	1,910	Count	Reports
	Number of communities trained in FBEs	500	9,800	Count	Reports
	Number of Forest Management Plans developed and approved for Village Forest Areas	0	≥500	Count Count	Approved FMPs; District Forestry Office records
	# of village forest areas demarcated and formalized with bylaws and protection agreements	32	≥68	Count	Community forest agreements; MoNREM legal records
Outcome	Strengthened governance of local forest resources	Low	≥75%	%	Community enforcement reports; logbook, sales reports, attendance register
	% of VFAs managed in accordance with developed Forest Management Plans	20%	≥75%		Implementation reports; VNRMCM monitoring logs
Impact	% increase in tree cover and ecosystem function on formerly degraded land	Very low	≥60%	%	Remote sensing (NDVI); Forest health assessments
	% improvement in household access to sustainable forest products (e.g., fuelwood, poles)	Low	≥50%	%	Household surveys; Forest use audits
	% improvement in forest condition index in VFAs under active management plans	Low	≥50%	%	Forest condition surveys; Satellite imagery; NFMS data

Adaptation Action 4: Restore forest cover and improve management in deforested and degraded forests, including forest reserves, natural forests outside reserves, and plantations

Indicator Level	SMART Indicator	Baseline (2024)	Target (2030)	Metric	Means of Verification (MoV)
Output	Hectares of deforested and degraded forest areas restored and brought under improved management	Low	≥250,000 ha	Area (ha)	MoNREM restoration reports; Satellite imagery; Ground-truthing
Outcome	% of restored forest areas maintained with active management practices (e.g., firebreaks, patrols, silviculture)	Low	≥75%	%	Forest management audits; District forestry supervision records
Impact	% increase in forest health and canopy density across targeted restoration zones	Low	≥50%	%	Forest condition index (NDVI, ground surveys); NFMS reports

Adaptation Action 5: Monitor enforcement of CFM by-laws and agreements

Indicator Level	SMART Indicator	Baseline (2024)	Target (2030)	Metric	Means of Verification (MoV)
Output	# of CFM sites regularly monitored for by-law and agreement compliance	<100	≥500	Count	Community Forest Management (CFM) monitoring reports; District Forest logs
Outcome	% of monitored CFM sites demonstrating active enforcement of by-laws and agreements	Low	≥80%	%	Enforcement and compliance logs; VNRMC reports
Impact	% reduction in illegal forest activities in CFM areas	High	≥60%	%	Incident records; Patrol reports; Forest condition tracking

Adaptation Action 6: Conduct capacity building for Village Natural Resource Committees

Indicator Level	SMART Indicator	Baseline (2024)	Target (2030)	Metric	Means of Verification (MoV)
Output	# of Village Natural Resource Committees (VNRMCs) trained in forest governance, monitoring, and by-law enforcement	~100	≥1,200	Count	Training attendance registers; District Forest office reports
Outcome	% of trained VNRMCs demonstrating improved governance and forest management practices	Low	≥75%	%	Post-training evaluations; VNRMC action plans
Impact	% increase in community-led protection and regeneration of forest resources	Low	≥60%	%	Community forest monitoring reports; Ground condition assessments

STRATEGY 4: FIRE PREVENTION AND CONTROL

Adaptation Action 7: Install climate-informed wildfire detection systems.

Indicator Level	SMART Indicator	Baseline (2024)	Target (2030)	Metric	Means of Verification (MoV)
Output	# of forest sites equipped with operational climate-informed wildfire detection systems (e.g., sensors, satellite-linked tools)	TBD	≥200	Count	Forestry ICT records; Installation verification reports
Outcome	% of fire incidents detected and reported through climate-informed wildfire detection systems	Low	≥85%	%	Alert logs; Forest incident reports

Impact	% reduction in area of forest lost to fire in monitored locations	High	≥60%	%	Satellite fire monitoring data; District fire incident records
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Adaptation Action 8: Introduce firebreaks and early warning protocols

Indicator Level	SMART Indicator	Baseline (2024)	Target (2030)	Metric	Means of Verification (MoV)
Output	Distance (Kilometers) of firebreaks established and maintained with corresponding early warning protocols	TBD	≥3,000 km	Km	Forestry Department field reports; Community fire prevention logs
Outcome	% of forest areas with active firebreak and early warning coverage	Very low	≥70%	%	GIS firebreak maps; Monitoring reports
Impact	% decrease in uncontrolled forest fires	High	≥50%	%	Fire occurrence reports; Satellite fire data (MODIS, VIIRS)

Adaptation Action 9: Strengthen the capacity of local communities in fire management

Indicator Level	SMART Indicator	Baseline (2024)	Target (2030)	Metric	Means of Verification (MoV)
Output	# of community fire management teams (VNRMCs/forest block members) trained and equipped	Few	≥800	Count	Training registers; Equipment distribution logs
Outcome	% of fire outbreaks in which community teams respond within 2 hours	Low	≥80%	%	Fire response logs; Incident reports
Impact	% reduction in fire-related forest degradation in community-managed areas	High	≥65%	%	NFMS; Community Forest health surveys

STRATEGY 5: PEST AND DISEASE CONTROL

Adaptation Action 10: Establish biological control and pest management units

Indicator Level	SMART Indicator	Baseline (2024)	Target (2030)	Metric	Means of Verification (MoV)
Output	# of functional biological control and pest management units established in priority forestry zones	3	≥10	Count	MoNREM pest unit reports; Staffing records
Outcome	% of forest pest outbreaks managed or contained by established units	Very low	≥80%	%	Pest surveillance data; Response logs
Impact	% reduction in tree mortality and defoliation due to pest infestations	High	≥60%	%	Forest health surveys; Remote sensing vegetation indices (NDVI)

STRATEGY 6: AGROFORESTRY PROMOTION

Adaptation Action 11: Scale up climate-resilient agroforestry systems across vulnerable farming landscapes.

Indicator Level	SMART Indicator	Baseline (2024)	Target (2030)	Metric	Means of Verification (MoV)
Output	Farmland under climate-resilient agroforestry systems (e.g. Faidherbia, Gliricidia, pigeon pea intercropping)	60,000 ha	250,000 ha	Hectares (ha)	Forestry Department plantation and agroforestry registers; GIS and remote sensing analysis
Outcome	Smallholder farmers adopting agroforestry practices in vulnerable districts	120,000 households	500,000 households	Number of farming households	Extension service records; agricultural household surveys

Impact	Increased resilience of crop production to drought and rainfall variability	Baseline yield variability in 2025	25% improvement in yield stability	% increase in average yields and/or stability index	National crop assessment reports; post-season agricultural surveys
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Adaptation Action 12: Promote protective and climate-buffer forests prioritising native and drought-resilient species

Indicator Level	SMART Indicator	Baseline (2024)	Target (2030)	Metric	Means of Verification (MoV)
Output	Area of protective and climate-buffer forests established or restored (riparian buffers, hillslopes, windbreaks)	15,000 ha	120,000 ha	Hectares (ha)	Forest restoration reports; GIS mapping; national forest inventory
Outcome	Priority catchments and vulnerable landscapes with functional forest buffer zones	12%	≥60%	% of priority catchments	Catchment management plans; Forestry Department monitoring reports
Impact	Reduction in climate-related land degradation and ecosystem service loss (erosion, flash floods, siltation)	Baseline degradation indicators in 2025	40% reduction	Hectares (ha)	Environmental monitoring data; river sediment monitoring; national land degradation assessments

Forestry Sector – Indicator Definition Sheets

The Forestry Sector IDSs provide standardized specifications for monitoring progress in strengthening the resilience, sustainable management and restoration of Malawi's forest resources and associated ecosystems under the NAP.

Each sheet defines the indicator and its adaptation relevance and establishes the corresponding metric, calculation method, baseline, target, data source, means of verification, collection method, reporting frequency and institutional responsibility.

The IDSs facilitate consistent assessment of changes in forest condition, restoration, sustainable forest management, ecosystem services and the capacity of forests and forest-dependent communities to withstand increasing climate-related pressures.

STRATEGY 1: SUSTAINABLE FOREST MANAGEMENT (SFM)

Adaptation Action 1: Scale up climate-resilient native forest restoration and tree-site matching in degraded conservation areas to buffer drought, floods and temperature rise.

IDS F-01 — Output

Field	Description
Indicator Level	Output
Indicator Name	Total hectares of native forest tree species planted and protected in site-matched degraded conservation areas
Indicator Definition	Total verified, non-overlapping hectares of site-matched degraded conservation area planted with native forest tree species and placed under documented protection within the defined reporting boundary.
Purpose / Relevance to Adaptation	Tracks the physical scale of climate-resilient native forest restoration in degraded conservation areas.
Metric / Unit of Measurement	Hectares (ha)
Calculation Method	Identify qualifying areas from administrative and geospatial records, verify that each area meets the indicator criteria, dissolve/remove overlaps, and sum the verified polygon area.
Formula	Total qualifying area (ha) = Σ verified non-overlapping area _i (ha)
Numerator	Total verified qualifying area in hectares.
Denominator	Not applicable (absolute area indicator).
Baseline	TBD
Baseline Year	2024
Target	≥132,000 ha (≥600,000 ha potential)
Target Year	2030

Field	Description
Data Source(s)	NFMS spatial layers and restoration records; District Forestry Office planting/protection registers.
Means of Verification	NFMS; District Forestry Office records
Data Collection Method	Compile planting and protection records, map restoration polygons, verify a sample on the ground, remove spatial overlaps, and sum qualifying hectares.
Disaggregation	District; conservation area/site; native species or species mix; restoration year; restoration method; protection status.
Reporting Frequency	Semi-annual implementation tracking with annual consolidated reporting.
Responsible Institution(s)	Proposed functional lead: Department of Forestry; supporting verification by District Forestry Offices and site managers.
Data Quality / Verification	Cross-check mapped polygons against field records, planting dates, species lists and protection evidence; remove duplicate or overlapping polygons.
Methodological Notes / Assumptions	Count only area that satisfies both conditions: native tree species were established and the site is under documented protection. "Potential" area in the target is contextual and is not added to achieved hectares.
Link to Adaptation Result	Shows delivery of restored, protected native forest area intended to buffer drought, floods and rising temperatures.

Field	Description
Indicator Level	Outcome
Indicator Name	% increase in forest cover and native forest tree species density in reforested conservation zones
Indicator Definition	Change in forest cover and native forest tree density within the fixed reforested conservation zones, with both components measured using consistent spatial and field protocols.
Purpose / Relevance to Adaptation	Assesses whether restoration results in measurable recovery of forest cover while also improving native-tree stocking in the treated zones.
Metric / Unit of Measurement	Forest cover (%), with native-tree density (trees/ha) reported as a required companion measure
Calculation Method	Calculate forest cover percentage within the fixed zone and native-tree density from representative plots. Report both components separately and compare them with their baseline values.
Formula	Forest cover (%) = (Forest-covered area ÷ Total reforested-zone area) × 100; Native-tree density = Number of live native trees sampled ÷ Sampled area (ha)
Numerator	Primary percentage component: forest-covered area; companion density component: number of live native trees sampled.
Denominator	Primary percentage component: total reforested-zone area; companion density component: sampled area in hectares.
Baseline	24.4%
Baseline Year	2024
Target	50%
Target Year	2030
Data Source(s)	Satellite imagery and classified land-cover products; permanent/sample plots; Department of Forestry ground-verification records.
Means of Verification	Satellite imagery; Ground verification: Department of Forestry Strategic Plan
Data Collection Method	Delineate the fixed reforested-zone boundary, derive forest-cover percentage from consistent imagery, and measure native-tree density from georeferenced field plots.
Disaggregation	Conservation zone; district; restoration cohort/year; native species group; canopy-cover class.
Reporting Frequency	Annual; remote-sensing or field reassessment may be aligned with the relevant seasonal monitoring window.
Responsible Institution(s)	Proposed functional lead: Department of Forestry, with remote-sensing/GIS and district field-verification functions.
Data Quality / Verification	Use the same zone boundaries, classification rules, sensor resolution/season and plot protocol across years; validate remote-sensing classes with ground observations.

Field	Description
Methodological Notes / Assumptions	The source indicator combines two constructs but provides one percentage baseline and target. Report forest cover (%) and native-tree density (trees/ha) as separate component measures. For target assessment, apply the single percentage target to the formally designated primary component; do not create an unapproved composite index.
Link to Adaptation Result	Demonstrates ecological recovery of reforested conservation zones, a core resilience outcome of restoration.

Field	Description
Indicator Level	Impact
Indicator Name	Carbon sequestration capacity from reforested conservation areas (MtCO₂ e/year)
Indicator Definition	Estimated annual net carbon dioxide equivalent sequestered by the reforested conservation areas, expressed in million tonnes CO ₂ e per year.
Purpose / Relevance to Adaptation	Quantifies the climate-regulation benefit generated by restored conservation forests through annual net carbon sequestration.
Metric / Unit of Measurement	MtCO ₂ e/year
Calculation Method	Estimate annual net change in approved forest carbon pools for the reforested area using nationally approved/IPCC-consistent methods, convert carbon to CO ₂ and aggregate to MtCO ₂ e/year.
Formula	Net sequestration (MtCO ₂ e/year) = [Σ annual net carbon stock change (tC/year) × (44/12)] ÷ 1,000,000
Numerator	Annual net carbon stock increase/removal attributable to the defined reforested conservation areas, converted to tonnes CO ₂ e.
Denominator	1,000,000 tonnes CO ₂ e per MtCO ₂ e (unit conversion); no population denominator.
Baseline	Baseline TBD
Baseline Year	2024
Target	≥2.5 MtCO₂ e/year
Target Year	2030
Data Source(s)	National GHG Inventory datasets; forest inventory/biomass plots; approved carbon-accounting reports and activity data.
Means of Verification	National GHG Inventory; Carbon accounting reports
Data Collection Method	Estimate annual change in relevant carbon pools for the reforested area using an approved national/IPCC-consistent forest carbon method and convert carbon to CO ₂ e.
Disaggregation	Conservation area; forest type/species group; age class; carbon pool where reported.
Reporting Frequency	Annual, aligned with the national GHG inventory/carbon-accounting cycle.
Responsible Institution(s)	Proposed functional lead: Department of Forestry in coordination with the national GHG inventory/carbon-accounting function.
Data Quality / Verification	Apply documented emission/removal factors, area data and uncertainty procedures; reconcile activity data with NFMS and retain calculation workbooks and factors.
Methodological Notes / Assumptions	The baseline is explicitly TBD in the source and must be established before trend assessment. Use one approved carbon-accounting methodology consistently through 2030.

Field	Description
Link to Adaptation Result	Shows the long-term ecosystem and mitigation co-benefit of climate-resilient forest restoration.

STRATEGY 2: CUSTOMARY AFFORESTATION & REFORESTATION

Adaptation Action 2: Scaling up climate smart Natural regeneration programmes

IDS F-04 — Output

Field	Description
Indicator Level	Output
Indicator Name	Hectares of degraded land under Farmer Managed Natural Regeneration (FMNR) or Assisted Natural Regeneration (ANR)
Indicator Definition	Total verified, non-overlapping hectares of degraded land under active FMNR or ANR management that meets the programme's minimum practice criteria within the defined reporting boundary.
Purpose / Relevance to Adaptation	Measures scale-up of low-cost natural regeneration approaches that improve vegetation recovery and drought resilience.
Metric / Unit of Measurement	Hectares (ha)
Calculation Method	Identify qualifying areas from administrative and geospatial records, verify that each area meets the indicator criteria, dissolve/remove overlaps, and sum the verified polygon area.
Formula	Total qualifying area (ha) = Σ verified non-overlapping area _i (ha)
Numerator	Total verified qualifying area in hectares.
Denominator	Not applicable (absolute area indicator).
Baseline	<42,045.69 ha
Baseline Year	2025
Target	≥67,045.69 ha
Target Year	2030
Data Source(s)	Field implementation reports; NFMS spatial datasets; district regeneration registers.
Means of Verification	Field reports; NFMS datasets
Data Collection Method	Map and verify qualifying FMNR/ANR parcels, ensure each parcel is under active management, remove overlaps, and sum verified hectares.
Disaggregation	District; FMNR/ANR; land tenure/management category; establishment year; vegetation/land-use class.
Reporting Frequency	Semi-annual implementation tracking with annual consolidated reporting.
Responsible Institution(s)	Proposed functional lead: Department of Forestry with District Forestry Offices and participating community/land managers.
Data Quality / Verification	Use georeferenced boundaries and standard FMNR/ANR qualification criteria; prevent double counting where practices overlap or parcels are re-reported.
Methodological Notes / Assumptions	The source table does not state a baseline year; 2025 is used for IDS harmonization. The "<" baseline qualifier is retained and should be replaced only after a formally validated baseline inventory.

Field	Description
Link to Adaptation Result	Tracks expansion of climate-smart natural regeneration on degraded land.

Field	Description
Indicator Level	Outcome
Indicator Name	% increase in forest cover
Indicator Definition	Forest cover expressed as the percentage of the fixed reference landscape that meets the approved national forest-cover definition at the reporting date.
Purpose / Relevance to Adaptation	Measures change in the share of the target landscape classified as forest following expanded natural regeneration.
Metric / Unit of Measurement	Percent forest cover (%)
Calculation Method	Classify forest cover within the fixed reference boundary using consistent remote-sensing and ground-verification methods, then divide classified forest area by total reference area.
Formula	Forest cover (%) = (Area classified as forest ÷ Total reference landscape area) × 100
Numerator	Area classified as forest within the fixed reference landscape.
Denominator	Total area of the fixed reference landscape.
Baseline	24.4
Baseline Year	2025
Target	26.4
Target Year	2030
Data Source(s)	Consistent remote-sensing land-cover products; ground-truthing assessment records; NFMS.
Means of Verification	Remote sensing; Ground-truthing assessments
Data Collection Method	Classify forest cover within a fixed reference boundary using consistent imagery and validate the classification through ground-truthing.
Disaggregation	District; target landscape; FMNR/ANR area; forest-cover class.
Reporting Frequency	Annual; remote-sensing or field reassessment may be aligned with the relevant seasonal monitoring window.
Responsible Institution(s)	Proposed functional lead: Department of Forestry remote-sensing/NFMS function with District Forestry Offices.
Data Quality / Verification	Use fixed boundaries, consistent forest definition, sensor/season and classification accuracy assessment; document any methodological changes.
Methodological Notes / Assumptions	The source names this an “% increase” indicator but supplies baseline 24.4 and target 26.4 under a % metric, which read as forest-cover levels. Retain the source values and report the forest-cover percentage directly; if a relative increase is additionally reported, label it separately.
Link to Adaptation Result	Shows whether FMNR/ANR contributes to recovery of forest cover in degraded landscapes.

Field	Description
Indicator Level	Impact
Indicator Name	% improvement in ecosystem services (e.g. carbon sequestration, erosion control)
Indicator Definition	Percentage improvement from baseline in the ecosystem service index for the intervention landscape, combining pre-defined measures such as carbon sequestration and erosion control.
Purpose / Relevance to Adaptation	Tests whether natural regeneration produces measurable gains in priority ecosystem services that underpin climate resilience.
Metric / Unit of Measurement	Percent improvement from baseline (%)
Calculation Method	Establish the numeric baseline index with a fixed specification, repeat the same measurement in the reporting year and calculate relative improvement from baseline.
Formula	$\text{Improvement (\%)} = ((\text{Current index} - \text{Baseline index}) \div \text{Baseline index}) \times 100$
Numerator	Difference between the current index value and the numeric baseline index value.
Denominator	Numeric baseline index value established for the IDS baseline year.
Baseline	Low
Baseline Year	2025
Target	≥50%
Target Year	2030
Data Source(s)	Ecosystem service monitoring reports; forest/carbon measurements; erosion or sediment monitoring datasets.
Means of Verification	Ecosystem service monitoring reports
Data Collection Method	Establish a quantified baseline ecosystem-service index using fixed component indicators, repeat the same measurements, standardize component scores and calculate improvement from baseline.
Disaggregation	District; ecosystem service component; intervention type (FMNR/ANR); landscape/catchment.
Reporting Frequency	Annual; remote-sensing or field reassessment may be aligned with the relevant seasonal monitoring window.
Responsible Institution(s)	Proposed functional lead: Department of Forestry with relevant environmental/carbon and catchment monitoring functions.
Data Quality / Verification	Document component definitions, weights, sampling sites and normalization method; retain a stable index specification across reporting periods.
Methodological Notes / Assumptions	The qualitative baseline “Low” is retained from the source but cannot serve as the numeric denominator for a ≥50% improvement calculation. A quantified 2025 baseline index must be established before the target can be assessed.

Field	Description
Link to Adaptation Result	Demonstrates wider resilience benefits of regeneration beyond tree cover alone.

STRATEGY 3: COMMUNITY BASED FOREST MANAGEMENT (CBFM)

Adaptation Action 3: Restore Forest cover on degraded customary land and nonarable land in agricultural landscapes by expanding area and improving management of village forest areas and woodlots through demarcation, strengthened community bylaws, and agreements for protection against uncontrolled cutting, grazing, and fire

IDS F-07 — Output

Field	Description
Indicator Level	Output
Indicator Name	Number of VNRMCs revamped/formed
Indicator Definition	Number of unique VNRMCs that is newly formed or formally revamped during the reporting period and has documentary evidence of membership/leadership and operational status.
Purpose / Relevance to Adaptation	Measures expansion and revitalization of community institutions required for local forest governance.
Metric / Unit of Measurement	Count
Calculation Method	Compile the relevant records, apply the qualifying criterion, deduplicate unique VNRMCs and count those meeting the criterion.
Formula	$\text{Count} = \sum I_i$, where $I_i = 1$ when VNRMC i meets the qualifying criterion, otherwise 0
Numerator	Number of unique qualifying VNRMCs.
Denominator	Not applicable (absolute count indicator).
Baseline	375
Baseline Year	2024
Target	17800,000
Target Year	2030
Data Source(s)	District reports; VNRMC establishment/revitalization records and membership lists.
Means of Verification	Districts reports;
Data Collection Method	Compile district VNRMC records, apply the agreed functional definition, deduplicate committees by locality/name, and count qualifying VNRMCs.
Disaggregation	District; newly formed vs revamped; sex and youth composition of committee where available; operational status.
Reporting Frequency	Semi-annual implementation tracking with annual consolidated reporting.
Responsible Institution(s)	Proposed functional lead: District Forestry Offices under Department of Forestry coordination, with community verification where needed.
Data Quality / Verification	Verify committee existence, membership list, locality and date; prevent repeated counting of the same committee across reporting years.
Methodological Notes / Assumptions	The target is retained exactly as “17800,000” from the final source framework. Because this appears numerically ambiguous, the intended value must be formally confirmed before performance aggregation; the IDS does not reinterpret or replace it.

Field	Description
Link to Adaptation Result	Shows institutional capacity created to support community-based forest management and protection.

Field	Description
Indicator Level	Output
Indicator Name	Number of VNRMCs trained in Forest management
Indicator Definition	Number of unique VNRMCs that has at least the required number/proportion of members completing an approved forest-management training package.
Purpose / Relevance to Adaptation	Tracks coverage of practical forest-management capacity building among community forest institutions.
Metric / Unit of Measurement	Count
Calculation Method	Compile the relevant records, apply the qualifying criterion, deduplicate unique VNRMCs and count those meeting the criterion.
Formula	Count = $\sum I_i$, where $I_i = 1$ when VNRMC i meets the qualifying criterion, otherwise 0
Numerator	Number of unique qualifying VNRMCs.
Denominator	Not applicable (absolute count indicator).
Baseline	300
Baseline Year	2024
Target	1,910
Target Year	2030
Data Source(s)	Training reports; attendance registers; VNRMC and District Forestry Office records.
Means of Verification	Reports
Data Collection Method	Consolidate attendance records by VNRMC, verify completion against the approved curriculum, deduplicate repeat training, and count VNRMCs meeting the completion threshold.
Disaggregation	District; training module; training date; VNRMC; participant sex/age where available.
Reporting Frequency	Semi-annual implementation tracking with annual consolidated reporting.
Responsible Institution(s)	Proposed functional lead: District Forestry Offices/Department of Forestry training function.
Data Quality / Verification	Reconcile participant registers with VNRMC membership; distinguish refresher sessions from first-time completion and retain training evidence.
Methodological Notes / Assumptions	Define a minimum completion threshold for a VNRMC (for example, required core modules and minimum member participation) before reporting.
Link to Adaptation Result	Supports improved community implementation of forest management, restoration and protection measures.

Field	Description
Indicator Level	Output
Indicator Name	Number of communities trained in FBEs
Indicator Definition	Number of unique communitys that has completed an approved forest-based enterprise (FBE) training package during the reporting period.
Purpose / Relevance to Adaptation	Measures reach of capacity building intended to link sustainable forest management with viable community livelihoods.
Metric / Unit of Measurement	Count
Calculation Method	Compile the relevant records, apply the qualifying criterion, deduplicate unique communitys and count those meeting the criterion.
Formula	$\text{Count} = \sum I_i$, where $I_i = 1$ when community i meets the qualifying criterion, otherwise 0
Numerator	Number of unique qualifying communitys.
Denominator	Not applicable (absolute count indicator).
Baseline	500
Baseline Year	2024
Target	9,800
Target Year	2030
Data Source(s)	Training and extension reports; attendance registers; district/community training records.
Means of Verification	Reports
Data Collection Method	Aggregate approved FBE training records, identify unique communities, verify completion and count each community once against the reporting definition.
Disaggregation	District; community; FBE topic/type; participant sex/age where available; training cohort.
Reporting Frequency	Semi-annual implementation tracking with annual consolidated reporting.
Responsible Institution(s)	Proposed functional lead: Department of Forestry and District Forestry Offices, with relevant enterprise/extension partners where engaged.
Data Quality / Verification	Use a unique community identifier; verify training date, curriculum and attendance; do not count multiple sessions in one community as multiple communities.
Methodological Notes / Assumptions	“FBE” should use the programme’s formally adopted definition of forest-based enterprise; document the minimum training package used for qualification.
Link to Adaptation Result	Supports livelihood incentives that can reduce unsustainable forest extraction and strengthen resilience.

Field	Description
Indicator Level	Output
Indicator Name	Number of Forest Management Plans developed and approved for Village Forest Areas
Indicator Definition	Number of unique Forest Management Plan for a Village Forest Areas that is completed, covers a clearly identified VFA and has documented approval under the applicable process.
Purpose / Relevance to Adaptation	Measures the number of VFAs with an approved management instrument to guide sustainable use, restoration and protection.
Metric / Unit of Measurement	Count
Calculation Method	Compile the relevant records, apply the qualifying criterion, deduplicate unique Forest Management Plan for a Village Forest Areas and count those meeting the criterion.
Formula	Count = $\sum I_i$, where $I_i = 1$ when Forest Management Plan for a Village Forest Area i meets the qualifying criterion, otherwise 0
Numerator	Number of unique qualifying Forest Management Plan for a Village Forest Areas.
Denominator	Not applicable (absolute count indicator).
Baseline	0
Baseline Year	2024
Target	≥500
Target Year	2030
Data Source(s)	Approved FMP register; District Forestry Office plan files and approval records.
Means of Verification	Approved FMPs; District Forestry Office records
Data Collection Method	Maintain a register of approved VFA management plans, verify approval evidence and VFA identity, and count unique approved plans.
Disaggregation	District; VFA; plan approval year; plan status (new/revised); management objective.
Reporting Frequency	Semi-annual implementation tracking with annual consolidated reporting.
Responsible Institution(s)	Proposed functional lead: Department of Forestry/District Forestry Offices under the applicable VFA plan-approval process.
Data Quality / Verification	Count only formally approved plans; link each plan to one VFA identifier and version-control revised plans to avoid double counting.
Methodological Notes / Assumptions	A revised plan should not be counted as an additional VFA unless the reporting rule explicitly tracks plan versions rather than covered VFAs.
Link to Adaptation Result	Creates the planning basis for accountable and climate-resilient management of village forests.

Field	Description
Indicator Level	Output
Indicator Name	# of village forest areas demarcated and formalized with bylaws and protection agreements
Indicator Definition	Number of unique Village Forest Areas that has a documented boundary/demarcation and the required bylaws and protection agreement(s) formally recorded.
Purpose / Relevance to Adaptation	Tracks formalization of community forest areas and the institutional safeguards needed to control cutting, grazing and fire.
Metric / Unit of Measurement	Count
Calculation Method	Compile the relevant records, apply the qualifying criterion, deduplicate unique Village Forest Areas and count those meeting the criterion.
Formula	$\text{Count} = \sum I_i$, where $I_i = 1$ when Village Forest Area i meets the qualifying criterion, otherwise 0
Numerator	Number of unique qualifying Village Forest Areas.
Denominator	Not applicable (absolute count indicator).
Baseline	32
Baseline Year	2024
Target	≥68
Target Year	2030
Data Source(s)	Community forest agreements; legal/administrative records; District Forestry Office VFA registers; boundary maps.
Means of Verification	Community forest agreements; MoNREM legal records
Data Collection Method	Review VFA records, confirm boundary evidence and formalized bylaws/agreements, and count only VFAs meeting all required conditions.
Disaggregation	District; VFA; demarcation status; bylaw status; protection-agreement status; area (ha).
Reporting Frequency	Semi-annual implementation tracking with annual consolidated reporting.
Responsible Institution(s)	Proposed functional lead: Department of Forestry/District Forestry Offices with the relevant legal/administrative function and community authorities.
Data Quality / Verification	Verify each VFA against map/boundary records and signed/approved instruments; use a unique VFA identifier and document status changes.
Methodological Notes / Assumptions	All conditions in the indicator should be satisfied before a VFA is counted as formalized; partial completion should be tracked separately.
Link to Adaptation Result	Provides enforceable local governance arrangements for protection and restoration of customary forests.

Field	Description
Indicator Level	Outcome
Indicator Name	Strengthened governance of local forest resources
Indicator Definition	Percentage of the defined assessment universe that satisfies the indicator's agreed minimum performance/coverage criterion during the reporting period.
Purpose / Relevance to Adaptation	Converts the qualitative governance result into a measurable proportion of local forest governance units functioning to an agreed standard.
Metric / Unit of Measurement	Percent (%)
Calculation Method	Define the reporting universe and the minimum qualifying standard, assess each eligible unit, count qualifying units and divide by all eligible units assessed.
Formula	Percentage (%) = (Number meeting standard ÷ Total eligible units assessed) × 100
Numerator	Number of assessed community forest governance units meeting the agreed minimum governance-performance standard.
Denominator	Total number of community forest governance units assessed in the reporting period.
Baseline	Low
Baseline Year	2024
Target	≥75%
Target Year	2030
Data Source(s)	Community enforcement reports; logbooks; sales records; attendance registers; governance assessment checklists.
Means of Verification	Community enforcement reports; logbook, sales reports, attendance register
Data Collection Method	Apply a standardized governance checklist covering agreed dimensions such as meetings, records, financial transparency, bylaw enforcement and participation; classify each assessed unit as meeting/not meeting the minimum standard.
Disaggregation	District; VFA/CFM site; governance criterion; VNRMC; sex/youth representation where available.
Reporting Frequency	Annual; remote-sensing or field reassessment may be aligned with the relevant seasonal monitoring window.
Responsible Institution(s)	Proposed functional lead: District Forestry Offices with Department of Forestry oversight and community governance structures.
Data Quality / Verification	Use the same checklist and pass threshold across sites and years; retain documentary evidence for each scored criterion and conduct supervisory spot checks.
Methodological Notes / Assumptions	The source baseline is qualitative ("Low") while the target is quantitative (≥75%). Establish a numeric 2024 baseline using the approved governance checklist without changing the source baseline label.

Field	Description
Link to Adaptation Result	Shows whether community forest institutions are actually applying accountable governance arrangements, not only being established.

Field	Description
Indicator Level	Outcome
Indicator Name	% of VFAs managed in accordance with developed Forest Management Plans
Indicator Definition	Percentage of the defined assessment universe that satisfies the indicator's agreed minimum performance/coverage criterion during the reporting period.
Purpose / Relevance to Adaptation	Measures whether approved management plans are being implemented in practice.
Metric / Unit of Measurement	Percent (%)
Calculation Method	Define the reporting universe and the minimum qualifying standard, assess each eligible unit, count qualifying units and divide by all eligible units assessed.
Formula	Percentage (%) = (Number meeting standard ÷ Total eligible units assessed) × 100
Numerator	Number of VFAs with an approved FMP that meet the agreed minimum implementation/compliance standard during the reporting period.
Denominator	Total number of VFAs with approved FMPs assessed during the reporting period.
Baseline	20%
Baseline Year	2024
Target	≥75%
Target Year	2030
Data Source(s)	FMP implementation reports; VNRMC monitoring logs; District Forestry Office supervision records.
Means of Verification	Implementation reports; VNRMC monitoring logs
Data Collection Method	Assess VFAs with approved FMPs against a standard implementation checklist and calculate the proportion meeting the compliance threshold.
Disaggregation	District; VFA; FMP implementation criterion; plan age/status.
Reporting Frequency	Annual; remote-sensing or field reassessment may be aligned with the relevant seasonal monitoring window.
Responsible Institution(s)	Proposed functional lead: District Forestry Offices with VNRMC reporting and Department of Forestry oversight.
Data Quality / Verification	Verify sampled management actions against field evidence; use consistent compliance criteria and denominator rules; document VFAs not assessed.
Methodological Notes / Assumptions	The denominator should include only VFAs with a valid approved FMP and a completed assessment in the reporting period.
Link to Adaptation Result	Demonstrates effective management of village forests rather than plan preparation alone.

Field	Description
Indicator Level	Impact
Indicator Name	% increase in tree cover and ecosystem function on formerly degraded land
Indicator Definition	Percentage improvement from baseline in the combined restoration condition index for formerly degraded land, based on pre-defined tree-cover and ecosystem-function components.
Purpose / Relevance to Adaptation	Measures ecological recovery of formerly degraded land under community-based forest management.
Metric / Unit of Measurement	Percent improvement from baseline (%)
Calculation Method	Establish the numeric baseline index with a fixed specification, repeat the same measurement in the reporting year and calculate relative improvement from baseline.
Formula	$\text{Improvement (\%)} = ((\text{Current index} - \text{Baseline index}) \div \text{Baseline index}) \times 100$
Numerator	Difference between the current index value and the numeric baseline index value.
Denominator	Numeric baseline index value established for the IDS baseline year.
Baseline	Very low
Baseline Year	2024
Target	≥60%
Target Year	2030
Data Source(s)	Remote sensing/NDVI; forest health assessments; ground plots or regeneration surveys.
Means of Verification	Remote sensing (NDVI); Forest health assessments
Data Collection Method	Establish a georeferenced baseline condition index, repeat consistent remote-sensing and field measurements, normalize the agreed components and calculate relative improvement.
Disaggregation	District; VFA/landscape; restoration cohort; tree-cover component; ecosystem-function component.
Reporting Frequency	Annual; remote-sensing or field reassessment may be aligned with the relevant seasonal monitoring window.
Responsible Institution(s)	Proposed functional lead: Department of Forestry remote-sensing/forest-health function with District Forestry Offices.
Data Quality / Verification	Keep baseline polygons, index components, weights, imagery season and field protocols constant; conduct accuracy checks and retain metadata.
Methodological Notes / Assumptions	The indicator combines tree cover and ecosystem function and the baseline is qualitative ("Very low"). A numeric 2024 baseline index and fixed component-weighting rule are required before the ≥60% improvement can be defensibly calculated.

Field	Description
Link to Adaptation Result	Shows whether community management produces sustained biophysical recovery and resilience benefits.

Field	Description
Indicator Level	Impact
Indicator Name	% improvement in household access to sustainable forest products (e.g., fuelwood, poles)
Indicator Definition	Percentage improvement from baseline in the share of target households that meet the agreed standard for adequate, legal and sustainable access to priority forest products.
Purpose / Relevance to Adaptation	Measures whether improved forest management increases reliable, legal and sustainable household access to priority forest products.
Metric / Unit of Measurement	Percent improvement from baseline (%)
Calculation Method	Estimate the percentage of target households meeting the access standard in the baseline and reporting years, then calculate the relative increase from the baseline percentage.
Formula	$\text{Improvement (\%)} = ((\text{Current access \%} - \text{Baseline access \%}) \div \text{Baseline access \%}) \times 100$
Numerator	Increase in the percentage of households meeting the sustainable-access standard compared with baseline.
Denominator	Baseline percentage of households meeting the sustainable-access standard.
Baseline	Low
Baseline Year	2024
Target	≥50%
Target Year	2030
Data Source(s)	Household surveys; forest-use audits; community forest product records.
Means of Verification	Household surveys; Forest use audits
Data Collection Method	Use a standardized household-access definition and survey instrument to estimate the share of households with adequate sustainable access, then compare with the baseline share.
Disaggregation	District; VFA/CFM area; household sex of head; vulnerability group where feasible; product type; distance/time-to-access.
Reporting Frequency	At least biennial, or aligned with the relevant household survey cycle; annual administrative updates where available.
Responsible Institution(s)	Proposed functional lead: Department of Forestry monitoring function with District Forestry Offices and household survey/statistical support as available.
Data Quality / Verification	Use consistent sampling frames and access criteria; verify self-reported access against forest-use records where feasible; report confidence intervals for survey estimates.

Field	Description
Methodological Notes / Assumptions	The source baseline “Low” is qualitative. A quantified 2024 baseline percentage of households meeting the access standard must be established before calculating a 50% improvement.
Link to Adaptation Result	Connects forest resilience and governance improvements to household livelihood and energy-security benefits.

Field	Description
Indicator Level	Impact
Indicator Name	% improvement in forest condition index in VFAs under active management plans
Indicator Definition	Percentage improvement from baseline in the forest condition index in VFAs under active management plans, using fixed indicators of canopy condition, regeneration, species composition and disturbance.
Purpose / Relevance to Adaptation	Measures whether active implementation of VFA management plans improves ecological condition over time.
Metric / Unit of Measurement	Percent improvement from baseline (%)
Calculation Method	Establish the numeric baseline index with a fixed specification, repeat the same measurement in the reporting year and calculate relative improvement from baseline.
Formula	$\text{Improvement (\%)} = ((\text{Current index} - \text{Baseline index}) \div \text{Baseline index}) \times 100$
Numerator	Difference between the current index value and the numeric baseline index value.
Denominator	Numeric baseline index value established for the IDS baseline year.
Baseline	Low
Baseline Year	2024
Target	≥50%
Target Year	2030
Data Source(s)	Forest condition surveys; satellite imagery; NFMS data; VFA management records.
Means of Verification	Forest condition surveys; Satellite imagery; NFMS data
Data Collection Method	Score each actively managed VFA with an approved forest-condition protocol, aggregate using the agreed weighting scheme, and calculate percentage improvement from the baseline index.
Disaggregation	District; VFA; forest type; condition-index component; management-plan age.
Reporting Frequency	Annual; remote-sensing or field reassessment may be aligned with the relevant seasonal monitoring window.
Responsible Institution(s)	Proposed functional lead: Department of Forestry/NFMS and District Forestry Offices.
Data Quality / Verification	Use permanent or comparable sampling units, fixed index definitions and consistent remote-sensing methods; independently review a sample of field scores.
Methodological Notes / Assumptions	The qualitative baseline “Low” must be translated into a documented numeric 2024 index value for calculation purposes while retaining the source baseline label in reporting.
Link to Adaptation Result	Demonstrates the long-term ecological effectiveness of community forest management plans.

Adaptation Action 4: Restore Forest cover and improve management in deforested and degraded forests, including forest reserves, natural forests outside reserves, and plantations

IDS F-17 — Output

Field	Description
Indicator Level	Output
Indicator Name	Hectares of deforested and degraded forest areas restored and brought under improved management
Indicator Definition	Total verified, non-overlapping hectares of deforested or degraded forest area that has been restored and is demonstrably under improved management within the defined reporting boundary.
Purpose / Relevance to Adaptation	Tracks the scale of restoration and improved management across degraded forest reserves, natural forests outside reserves and plantations.
Metric / Unit of Measurement	Hectares (ha)
Calculation Method	Identify qualifying areas from administrative and geospatial records, verify that each area meets the indicator criteria, dissolve/remove overlaps, and sum the verified polygon area.
Formula	Total qualifying area (ha) = Σ verified non-overlapping area _i (ha)
Numerator	Total verified qualifying area in hectares.
Denominator	Not applicable (absolute area indicator).
Baseline	Low
Baseline Year	2024
Target	≥250,000 ha
Target Year	2030
Data Source(s)	Restoration reports; GIS/satellite imagery; ground-truthing records; forest management registers.
Means of Verification	MoNREM restoration reports; Satellite imagery; Ground-truthing
Data Collection Method	Map restoration polygons, verify restoration and improved-management status, remove overlaps and sum qualifying hectares.
Disaggregation	District; forest category (reserve/natural forest outside reserve/plantation); restoration method; management regime; year.
Reporting Frequency	Semi-annual implementation tracking with annual consolidated reporting.
Responsible Institution(s)	Proposed functional lead: Department of Forestry with District Forestry Offices and relevant forest managers.
Data Quality / Verification	Require georeferenced polygons and evidence of both restoration and improved management; reconcile annual additions with cumulative area and remove duplicate polygons.

Field	Description
Methodological Notes / Assumptions	The source baseline is qualitative (“Low”) although the indicator and target are area-based. Establish a numeric 2024 hectare baseline for trend analysis without replacing the source baseline label.
Link to Adaptation Result	Measures delivery of the area-based intervention required to rebuild forest resilience.

Field	Description
Indicator Level	Outcome
Indicator Name	% of restored forest areas maintained with active management practices (e.g., firebreaks, patrols, silviculture)
Indicator Definition	Percentage of the defined forest-area denominator that meets the specified active management or coverage conditions during the reporting period.
Purpose / Relevance to Adaptation	Assesses whether restored forests continue to receive the management needed for survival, health and climate resilience.
Metric / Unit of Measurement	Percent of area (%)
Calculation Method	Use the fixed spatial denominator, identify and verify the area satisfying all required conditions, and divide qualifying hectares by total eligible hectares.
Formula	$\text{Coverage (\%)} = (\text{Qualifying area (ha)} \div \text{Total eligible area (ha)}) \times 100$
Numerator	Verified hectares of restored forest area with active management practices meeting the agreed standard.
Denominator	Total verified hectares of restored forest area due for management in the reporting period.
Baseline	Low
Baseline Year	2024
Target	≥75%
Target Year	2030
Data Source(s)	Forest management audits; District forestry supervision records; restoration GIS database.
Means of Verification	Forest management audits; District forestry supervision records
Data Collection Method	Audit restored areas against defined active-management criteria, spatially link results to restoration polygons and calculate the share of restored area meeting the standard.
Disaggregation	District; forest category; management practice; restoration cohort/year.
Reporting Frequency	Incident-based during the fire season, with annual consolidation and trend reporting.
Responsible Institution(s)	Proposed functional lead: Department of Forestry and District Forestry Offices/forest managers.
Data Quality / Verification	Use standardized audit criteria and sampling; verify reported practices through field evidence and geotagged records; reconcile area denominators with the restoration database.
Methodological Notes / Assumptions	The qualitative baseline “Low” requires a quantified 2024 percentage baseline for trend analysis. Define which practices and minimum frequency constitute “active management.”

Field	Description
Link to Adaptation Result	Shows maintenance of restoration gains through fire prevention, patrols, silviculture and other active management.

Field	Description
Indicator Level	Impact
Indicator Name	% increase in forest health and canopy density across targeted restoration zones
Indicator Definition	Percentage improvement from baseline in the forest health and canopy-density index across fixed targeted restoration zones.
Purpose / Relevance to Adaptation	Measures the ecological response of targeted forests after restoration and improved management.
Metric / Unit of Measurement	Percent improvement from baseline (%)
Calculation Method	Establish the numeric baseline index with a fixed specification, repeat the same measurement in the reporting year and calculate relative improvement from baseline.
Formula	$\text{Improvement (\%)} = ((\text{Current index} - \text{Baseline index}) \div \text{Baseline index}) \times 100$
Numerator	Difference between the current index value and the numeric baseline index value.
Denominator	Numeric baseline index value established for the IDS baseline year.
Baseline	Low
Baseline Year	2024
Target	≥50%
Target Year	2030
Data Source(s)	Forest condition/NDVI data; ground surveys; NFMS reports and geospatial layers.
Means of Verification	Forest condition index (NDVI, ground surveys); NFMS reports
Data Collection Method	Measure canopy density and agreed forest-health variables within fixed zones, construct the approved index and calculate relative improvement from baseline.
Disaggregation	District; restoration zone; forest type; canopy-density class; health-index component.
Reporting Frequency	Annual; remote-sensing or field reassessment may be aligned with the relevant seasonal monitoring window.
Responsible Institution(s)	Proposed functional lead: Department of Forestry/NFMS with district ground-survey support.
Data Quality / Verification	Standardize imagery season/resolution, field plot design and index weights; validate remotely sensed changes through ground surveys.
Methodological Notes / Assumptions	The source baseline is qualitative (“Low”). A numeric 2024 baseline index is required for the ≥50% relative-improvement calculation.
Link to Adaptation Result	Demonstrates recovery of forest structure and health, improving resilience to climate stress.

Adaptation Action 5: Monitor enforcement of CFM by-laws and agreements

IDS F-20 — Output

Field	Description
Indicator Level	Output
Indicator Name	# of CFM sites regularly monitored for by-law and agreement compliance
Indicator Definition	Number of unique CFM sites that received the minimum required compliance monitoring visit/review within the reporting period and has a completed monitoring record.
Purpose / Relevance to Adaptation	Measures coverage of routine oversight for community forest by-laws and management agreements.
Metric / Unit of Measurement	Count
Calculation Method	Compile the relevant records, apply the qualifying criterion, deduplicate unique CFM sites and count those meeting the criterion.
Formula	$\text{Count} = \sum I_i$, where $I_i = 1$ when CFM site i meets the qualifying criterion, otherwise 0
Numerator	Number of unique qualifying CFM sites.
Denominator	Not applicable (absolute count indicator).
Baseline	<100
Baseline Year	2024
Target	≥500
Target Year	2030
Data Source(s)	CFM monitoring reports; District Forest logs; site monitoring registers.
Means of Verification	Community Forest Management (CFM) monitoring reports; District Forest logs
Data Collection Method	Compile monitoring logs, apply the agreed definition of “regularly monitored,” deduplicate sites, and count unique sites meeting the frequency requirement.
Disaggregation	District; CFM site; monitoring date; compliance status; monitoring modality.
Reporting Frequency	Semi-annual implementation tracking with annual consolidated reporting.
Responsible Institution(s)	Proposed functional lead: District Forestry Offices with Department of Forestry oversight and CFM/VNRMC participation.
Data Quality / Verification	Verify dates, site identifiers and completed monitoring instruments; distinguish site visits from full compliance monitoring and avoid duplicate counts.
Methodological Notes / Assumptions	Define the minimum monitoring frequency (for example, at least once per reporting year or as specified by protocol) before reporting.
Link to Adaptation Result	Provides the monitoring foundation needed to enforce community forest governance arrangements.

Field	Description
Indicator Level	Outcome
Indicator Name	% of monitored CFM sites demonstrating active enforcement of by-laws and agreements
Indicator Definition	Percentage of the defined assessment universe that satisfies the indicator's agreed minimum performance/coverage criterion during the reporting period.
Purpose / Relevance to Adaptation	Measures whether monitoring translates into actual enforcement of community forest rules and agreements.
Metric / Unit of Measurement	Percent (%)
Calculation Method	Define the reporting universe and the minimum qualifying standard, assess each eligible unit, count qualifying units and divide by all eligible units assessed.
Formula	Percentage (%) = (Number meeting standard ÷ Total eligible units assessed) × 100
Numerator	Number of monitored CFM sites with documented evidence of active by-law/agreement enforcement meeting the agreed standard.
Denominator	Total CFM sites monitored and assessed for enforcement during the reporting period.
Baseline	Low
Baseline Year	2024
Target	≥80%
Target Year	2030
Data Source(s)	Enforcement and compliance logs; VNRMC reports; District Forestry Office monitoring records.
Means of Verification	Enforcement and compliance logs; VNRMC reports
Data Collection Method	Review monitored sites using a standard enforcement checklist and classify whether evidence demonstrates active enforcement.
Disaggregation	District; CFM site; enforcement action/type; violation type; resolution status.
Reporting Frequency	Annual; remote-sensing or field reassessment may be aligned with the relevant seasonal monitoring window.
Responsible Institution(s)	Proposed functional lead: District Forestry Offices and CFM/VNRMC governance structures, with Department of Forestry oversight.
Data Quality / Verification	Verify enforcement evidence (warnings, sanctions, resolved cases, patrol records) and apply consistent pass criteria across sites.
Methodological Notes / Assumptions	The source baseline "Low" must be quantified as a 2024 percentage using the same enforcement standard that will be used for target assessment.
Link to Adaptation Result	Shows operational community governance capable of reducing unsustainable forest use.

Field	Description
Indicator Level	Impact
Indicator Name	% reduction in illegal forest activities in CFM areas
Indicator Definition	Percentage reduction from baseline in the rate or count of verified illegal forest activity incidents in the same defined CFM area and reporting period.
Purpose / Relevance to Adaptation	Measures the ultimate effectiveness of CFM monitoring and enforcement in reducing illegal forest use.
Metric / Unit of Measurement	Percent reduction (%)
Calculation Method	Establish a numeric baseline count/rate using the fixed event definition and reporting coverage, measure the comparable current count/rate, and calculate the proportional reduction.
Formula	$\text{Reduction (\%)} = ((\text{Baseline incidence} - \text{Current incidence}) \div \text{Baseline incidence}) \times 100$
Numerator	Decrease in the standardized incident count/rate from baseline to the reporting period.
Denominator	Numeric baseline incident count/rate.
Baseline	High
Baseline Year	2024
Target	≥60%
Target Year	2030
Data Source(s)	Incident records; patrol reports; enforcement logs; forest condition tracking.
Means of Verification	Incident records; Patrol reports; Forest condition tracking
Data Collection Method	Compile and deduplicate verified incidents within a fixed CFM site set, standardize exposure/reporting period, and compare the current incidence with the baseline.
Disaggregation	District; CFM site; illegal-activity type (cutting, charcoal, grazing, fire, other); severity; case outcome.
Reporting Frequency	Annual; remote-sensing or field reassessment may be aligned with the relevant seasonal monitoring window.
Responsible Institution(s)	Proposed functional lead: Department of Forestry/District Forestry Offices with CFM/VNRMC patrol and reporting structures.
Data Quality / Verification	Use consistent incident definitions and reporting coverage; cross-check patrol logs with case records and forest-condition evidence; flag changes in detection effort.
Methodological Notes / Assumptions	The source baseline is qualitative (“High”). Establish a numeric 2024 incident count or rate before calculating the ≥60% reduction. Increased patrol effort can initially increase detected incidents and should be interpreted separately from true incidence.
Link to Adaptation Result	Demonstrates reduced pressure on community-managed forests and improved protection of forest resources.

Adaptation Action 6: Conduct capacity building for Village Natural Resource Committees

IDS F-23 — Output

Field	Description
Indicator Level	Output
Indicator Name	# of Village Natural Resource Committees (VNRMCs) trained in forest governance, monitoring, and by-law enforcement
Indicator Definition	Number of unique VNRMCs that has completed the approved training package covering forest governance, monitoring and by-law enforcement.
Purpose / Relevance to Adaptation	Measures the reach of institutional capacity building for VNRMCs across the core governance competencies needed for CBFM.
Metric / Unit of Measurement	Count
Calculation Method	Compile the relevant records, apply the qualifying criterion, deduplicate unique VNRMCs and count those meeting the criterion.
Formula	$\text{Count} = \sum I_i$, where $I_i = 1$ when VNRMC i meets the qualifying criterion, otherwise 0
Numerator	Number of unique qualifying VNRMCs.
Denominator	Not applicable (absolute count indicator).
Baseline	~100
Baseline Year	2024
Target	≥1,200
Target Year	2030
Data Source(s)	Training attendance registers; District Forest office reports; training completion records.
Means of Verification	Training attendance registers; District Forest office reports
Data Collection Method	Consolidate training records by unique VNRMC, verify completion of the required modules and count each committee once when the package is completed.
Disaggregation	District; VNRMC; training module; completion status; participant sex/age where available.
Reporting Frequency	Semi-annual implementation tracking with annual consolidated reporting.
Responsible Institution(s)	Proposed functional lead: Department of Forestry/District Forestry Offices and approved training providers.
Data Quality / Verification	Reconcile attendance with VNRMC membership; verify curriculum and completion; distinguish refresher training from first qualifying completion.
Methodological Notes / Assumptions	The approximate baseline “~100” is retained. Establish a unique VNRMC identifier and a clear completion threshold to avoid double counting.
Link to Adaptation Result	Builds community-level capability to govern, monitor and protect forest resources.

Field	Description
Indicator Level	Outcome
Indicator Name	% of trained VNRMCs demonstrating improved governance and forest management practices
Indicator Definition	Percentage of the defined assessment universe that satisfies the indicator's agreed minimum performance/coverage criterion during the reporting period.
Purpose / Relevance to Adaptation	Tests whether training translates into observable improvements in VNRMC governance and management practice.
Metric / Unit of Measurement	Percent (%)
Calculation Method	Define the reporting universe and the minimum qualifying standard, assess each eligible unit, count qualifying units and divide by all eligible units assessed.
Formula	Percentage (%) = (Number meeting standard ÷ Total eligible units assessed) × 100
Numerator	Number of trained VNRMCs assessed as demonstrating improvement against the approved governance and forest-management performance criteria.
Denominator	Total trained VNRMCs assessed after the defined post-training interval.
Baseline	Low
Baseline Year	2024
Target	≥75%
Target Year	2030
Data Source(s)	Post-training evaluations; VNRMC action plans; supervisory/field assessment records.
Means of Verification	Post-training evaluations; VNRMC action plans
Data Collection Method	Conduct standardized post-training assessments after a defined interval, compare performance with pre-training or baseline criteria, and calculate the share showing improvement.
Disaggregation	District; VNRMC; performance criterion; training cohort; time since training.
Reporting Frequency	Annual; remote-sensing or field reassessment may be aligned with the relevant seasonal monitoring window.
Responsible Institution(s)	Proposed functional lead: Department of Forestry training/M&E function with District Forestry Offices.
Data Quality / Verification	Use a consistent assessment tool, fixed timing after training and evidence-based scoring; where possible pair baseline and follow-up assessments for the same VNRMC.
Methodological Notes / Assumptions	The qualitative baseline "Low" should be quantified using the same assessment instrument. Define "improved" as a minimum change or threshold before data collection.
Link to Adaptation Result	Shows capacity-building effectiveness rather than training attendance alone.

Field	Description
Indicator Level	Impact
Indicator Name	% increase in community-led protection and regeneration of forest resources
Indicator Definition	Percentage increase from baseline in the verified area under active community-led forest protection and/or regeneration within the target CBFM landscape.
Purpose / Relevance to Adaptation	Measures the extent to which stronger community capacity results in expanded protection and regeneration on the ground.
Metric / Unit of Measurement	Percent increase in verified area (%)
Calculation Method	Measure the qualifying area at baseline and in the reporting year using the same spatial criteria, then calculate the relative increase from baseline.
Formula	$\text{Increase (\%)} = ((\text{Current qualifying area} - \text{Baseline qualifying area}) \div \text{Baseline qualifying area}) \times 100$
Numerator	Increase in qualifying hectares compared with baseline.
Denominator	Baseline qualifying hectares.
Baseline	Low
Baseline Year	2024
Target	≥60%
Target Year	2030
Data Source(s)	Community forest monitoring reports; ground condition assessments; georeferenced community-management records.
Means of Verification	Community forest monitoring reports; Ground condition assessments
Data Collection Method	Establish the baseline verified area under community-led protection/regeneration, repeat geospatial and field verification, and calculate relative increase.
Disaggregation	District; CFM/VFA; protection vs regeneration; land/forest type; community institution.
Reporting Frequency	Annual; remote-sensing or field reassessment may be aligned with the relevant seasonal monitoring window.
Responsible Institution(s)	Proposed functional lead: Department of Forestry/District Forestry Offices with VNRMC/CFM reporting structures.
Data Quality / Verification	Use georeferenced boundaries and fixed qualification criteria; remove overlaps between protection and regeneration categories where an aggregate area is reported.
Methodological Notes / Assumptions	The source baseline “Low” is qualitative. A numeric 2024 hectare baseline is required as the denominator for the ≥60% increase calculation.
Link to Adaptation Result	Demonstrates sustained community action that protects and regenerates forest resources.

Adaptation Action 7: Install climate-informed wildfire detection systems.

IDS F-26 — Output

Field	Description
Indicator Level	Output
Indicator Name	# of forest sites equipped with operational climate-informed wildfire detection systems (e.g., sensors, satellite-linked tools)
Indicator Definition	Number of unique forest sites that has an installed climate-informed wildfire detection system that is commissioned, functional and able to transmit/produce alerts under the approved protocol.
Purpose / Relevance to Adaptation	Measures deployment of the detection infrastructure needed for earlier wildfire identification and response.
Metric / Unit of Measurement	Count
Calculation Method	Compile the relevant records, apply the qualifying criterion, deduplicate unique forest sites and count those meeting the criterion.
Formula	$\text{Count} = \sum I_i$, where $I_i = 1$ when forest site i meets the qualifying criterion, otherwise 0
Numerator	Number of unique qualifying forest sites.
Denominator	Not applicable (absolute count indicator).
Baseline	TBD
Baseline Year	2024
Target	≥200
Target Year	2030
Data Source(s)	Forestry ICT asset/system records; installation and commissioning reports; site inventory.
Means of Verification	Forestry ICT records; Installation verification reports
Data Collection Method	Maintain a site-level system inventory, verify installation and operational tests, and count unique sites meeting all operational criteria.
Disaggregation	District; forest site/type; detection technology; installation date; operational status.
Reporting Frequency	Quarterly operational tracking; consolidated annually and before/after the main fire season where relevant.
Responsible Institution(s)	Proposed functional lead: Department of Forestry ICT/fire-management function with District Forestry Offices/site managers.
Data Quality / Verification	Verify equipment identity, location, commissioning and system uptime/test evidence; remove decommissioned or non-functional sites from the count.

Field	Description
Methodological Notes / Assumptions	“Operational” should require successful commissioning and evidence of functioning within the reporting period, not installation alone. Baseline remains TBD until the 2024 inventory is completed.
Link to Adaptation Result	Expands operational early-detection coverage in climate-exposed forest sites.

Field	Description
Indicator Level	Outcome
Indicator Name	% of fire incidents detected and reported through climate-informed wildfire detection systems
Indicator Definition	Percentage of the defined assessment universe that satisfies the indicator's agreed minimum performance/coverage criterion during the reporting period.
Purpose / Relevance to Adaptation	Measures the practical detection performance of installed wildfire systems.
Metric / Unit of Measurement	Percent (%)
Calculation Method	Define the reporting universe and the minimum qualifying standard, assess each eligible unit, count qualifying units and divide by all eligible units assessed.
Formula	Percentage (%) = (Number meeting standard ÷ Total eligible units assessed) × 100
Numerator	Number of verified forest fire incidents in monitored sites that generated a qualifying detection/alert through the climate-informed system and were reported under protocol.
Denominator	Total verified forest fire incidents occurring in monitored sites during the reporting period.
Baseline	Low
Baseline Year	2024
Target	≥85%
Target Year	2030
Data Source(s)	System alert logs; forest incident reports; control-room/communications records.
Means of Verification	Alert logs; Forest incident reports
Data Collection Method	Reconcile incident records with system alert logs using site, date/time and event identifiers; classify each incident as detected/reported or not.
Disaggregation	District; monitored site; detection technology; incident severity; detection/reporting time.
Reporting Frequency	Incident-based during the fire season, with annual consolidation and trend reporting.
Responsible Institution(s)	Proposed functional lead: Department of Forestry fire-management/ICT function with district incident reporting.
Data Quality / Verification	Synchronize timestamps, investigate unmatched alerts/incidents, distinguish false alarms and document system downtime.
Methodological Notes / Assumptions	The qualitative baseline “Low” requires a numeric 2024 detection rate. The denominator should include all independently verified fire incidents in sites expected to be covered by the system.
Link to Adaptation Result	Shows whether detection infrastructure is actually identifying and communicating fire incidents early enough to support response.

Field	Description
Indicator Level	Impact
Indicator Name	% reduction in area of forest lost to fire in monitored locations
Indicator Definition	Percentage reduction from baseline in the verified forest area burned/lost to fire within the fixed monitored-location boundary during the reporting period, derived from comparable area measurements.
Purpose / Relevance to Adaptation	Measures whether earlier detection and response reduce the physical extent of forest loss from wildfire.
Metric / Unit of Measurement	Hectares (ha) observed; percent reduction (%) derived for target tracking
Calculation Method	Measure the relevant affected area at baseline and in the reporting year using the same spatial definition, then calculate the percentage reduction from baseline hectares.
Formula	$\text{Reduction (\%)} = ((\text{Baseline affected area (ha)} - \text{Current affected area (ha)}) \div \text{Baseline affected area (ha)}) \times 100$
Numerator	Reduction in affected hectares compared with baseline.
Denominator	Baseline affected area in hectares.
Baseline	High
Baseline Year	2024
Target	≥60%
Target Year	2030
Data Source(s)	Satellite fire/burned-area monitoring; District fire incident records; forest boundary layers.
Means of Verification	Satellite fire monitoring data; District fire incident records
Data Collection Method	Map burned area within fixed monitored locations using consistent satellite/fire records, validate incidents with district records and compare annual burned area with the baseline.
Disaggregation	District; monitored site; forest type; fire cause where known; fire severity; season.
Reporting Frequency	Incident-based during the fire season, with annual consolidation and trend reporting.
Responsible Institution(s)	Proposed functional lead: Department of Forestry fire-management/NFMS function with District Forestry Offices.
Data Quality / Verification	Use consistent burned-area methodology and forest boundaries; remove non-forest burns; reconcile multiple satellite detections of the same event.
Methodological Notes / Assumptions	The source baseline “High” is qualitative. Establish numeric 2024 burned hectares for the monitored locations before calculating the ≥60% reduction.
Link to Adaptation Result	Demonstrates reduced wildfire damage and greater resilience of monitored forest landscapes.

Strategy 4: FIRE PREVENTION AND CONTROL

Adaptation Action 8: Introduce firebreaks and early warning protocols

IDS F-29 — Output

Field	Description
Indicator Level	Output
Indicator Name	Distance (Kilometers) of firebreaks established and maintained with corresponding early warning protocols
Indicator Definition	Total verified kilometres of firebreak segment that is established, maintained to the approved standard and linked to an active early warning protocol within the reporting period/cumulative programme inventory, as specified.
Purpose / Relevance to Adaptation	Measures the extent of physical and procedural wildfire prevention coverage established in priority forest landscapes.
Metric / Unit of Measurement	Kilometres (km)
Calculation Method	Verify each qualifying segment, map or GPS-record its length, remove duplicate/overlapping segments, and sum the verified lengths.
Formula	Total qualifying length (km) = $\sum$ verified segment length _i (km)
Numerator	Total verified qualifying firebreak length in kilometres.
Denominator	Not applicable (absolute length indicator).
Baseline	TBD
Baseline Year	2024
Target	≥3,000 km
Target Year	2030
Data Source(s)	Forestry Department field reports; community fire-prevention logs; GIS/GPS firebreak records.
Means of Verification	Forestry Department field reports; Community fire prevention logs
Data Collection Method	Map or GPS-survey firebreak segments, verify maintenance condition and linked early-warning protocol, remove overlaps and sum qualifying kilometres.
Disaggregation	District; forest/site; firebreak type; establishment/maintenance year; early-warning protocol status.
Reporting Frequency	Quarterly operational tracking; consolidated annually and before/after the main fire season where relevant.
Responsible Institution(s)	Proposed functional lead: Department of Forestry/District Forestry Offices with community fire-management structures.
Data Quality / Verification	Use georeferenced line data, fixed maintenance criteria and unique segment IDs; do not double count the same segment after repeated maintenance.

Field	Description
Methodological Notes / Assumptions	Count only kilometres satisfying both the physical firebreak and corresponding early-warning protocol requirements. Baseline remains TBD until the 2024 inventory is established.
Link to Adaptation Result	Tracks implementation of preventive infrastructure and early-warning arrangements that reduce wildfire spread.

Field	Description
Indicator Level	Outcome
Indicator Name	% of forest areas with active firebreak and early warning coverage
Indicator Definition	Percentage of the defined forest-area denominator that meets the specified active management or coverage conditions during the reporting period.
Purpose / Relevance to Adaptation	Measures how much of the priority forest estate is effectively protected by both firebreaks and active warning arrangements.
Metric / Unit of Measurement	Percent of area (%)
Calculation Method	Use the fixed spatial denominator, identify and verify the area satisfying all required conditions, and divide qualifying hectares by total eligible hectares.
Formula	$\text{Coverage (\%)} = (\text{Qualifying area (ha)} \div \text{Total eligible area (ha)}) \times 100$
Numerator	Hectares of the defined priority forest area meeting the approved active firebreak and early-warning coverage criterion.
Denominator	Total hectares of priority forest area designated for firebreak and early-warning coverage.
Baseline	Very low
Baseline Year	2024
Target	≥70%
Target Year	2030
Data Source(s)	GIS firebreak maps; monitoring reports; priority forest/risk-zone spatial layers.
Means of Verification	GIS firebreak maps; Monitoring reports
Data Collection Method	Overlay verified firebreak and early-warning coverage zones with the fixed priority forest area and calculate the proportion meeting both conditions.
Disaggregation	District; forest/site; risk class; firebreak status; early-warning status.
Reporting Frequency	Incident-based during the fire season, with annual consolidation and trend reporting.
Responsible Institution(s)	Proposed functional lead: Department of Forestry GIS/fire-management function with District Forestry Offices.
Data Quality / Verification	Use an approved spatial coverage rule (e.g., protected polygon/buffer logic), fixed denominator boundary and current operational-status checks.
Methodological Notes / Assumptions	The source baseline “Very low” must be quantified as a 2024 coverage percentage using the same GIS rule applied through 2030.
Link to Adaptation Result	Shows operational prevention coverage rather than kilometres of infrastructure alone.

Field	Description
Indicator Level	Impact
Indicator Name	% decrease in uncontrolled forest fires
Indicator Definition	Percentage reduction from baseline in the number or standardized rate of verified uncontrolled forest fires within the defined target forest area.
Purpose / Relevance to Adaptation	Measures whether firebreaks and early warning reduce the frequency of uncontrolled forest fire events.
Metric / Unit of Measurement	Percent reduction (%)
Calculation Method	Establish a numeric baseline count/rate using the fixed event definition and reporting coverage, measure the comparable current count/rate, and calculate the proportional reduction.
Formula	$\text{Reduction (\%)} = ((\text{Baseline incidence} - \text{Current incidence}) \div \text{Baseline incidence}) \times 100$
Numerator	Decrease in the standardized incident count/rate from baseline to the reporting period.
Denominator	Numeric baseline incident count/rate.
Baseline	High
Baseline Year	2024
Target	≥50%
Target Year	2030
Data Source(s)	Fire occurrence reports; satellite fire data (MODIS, VIIRS); district incident logs.
Means of Verification	Fire occurrence reports; Satellite fire data (MODIS, VIIRS)
Data Collection Method	Compile verified fire events from administrative and satellite sources, classify uncontrolled events using a fixed definition, deduplicate incidents and compare the standardized annual count/rate with baseline.
Disaggregation	District; forest/site; fire season; cause where known; severity; controlled vs uncontrolled classification.
Reporting Frequency	Incident-based during the fire season, with annual consolidation and trend reporting.
Responsible Institution(s)	Proposed functional lead: Department of Forestry fire-management function with District Forestry Offices.
Data Quality / Verification	Reconcile satellite hotspots with incident records, apply a stable uncontrolled-fire definition and account for changes in monitoring sensitivity/coverage.
Methodological Notes / Assumptions	The source baseline “High” is qualitative. Establish a numeric 2024 incident count or area-normalized rate before calculating the ≥50% decrease.
Link to Adaptation Result	Demonstrates reduced wildfire incidence and improved protection of forest ecosystems.

Adaptation Action 9: Strengthen the capacity of local communities in fire management

IDS F-32 — Output

Field	Description
Indicator Level	Output
Indicator Name	# of community fire management teams (VNRMCs/forest block members) trained and equipped
Indicator Definition	Number of unique community fire management teams that has completed the approved fire-management training and received the minimum required equipment package.
Purpose / Relevance to Adaptation	Measures community fire-response capacity created through combined training and equipment provision.
Metric / Unit of Measurement	Count
Calculation Method	Compile the relevant records, apply the qualifying criterion, deduplicate unique community fire management teams and count those meeting the criterion.
Formula	Count = $\sum I_i$, where $I_i = 1$ when community fire management team i meets the qualifying criterion, otherwise 0
Numerator	Number of unique qualifying community fire management teams.
Denominator	Not applicable (absolute count indicator).
Baseline	Few
Baseline Year	2024
Target	≥800
Target Year	2030
Data Source(s)	Training registers; equipment distribution logs; community team registers.
Means of Verification	Training registers; Equipment distribution logs
Data Collection Method	Match training completion records with equipment distribution records using a unique team identifier and count only teams satisfying both criteria.
Disaggregation	District; team/community; VNRMC/forest-block affiliation; training date; equipment status; team membership sex/age where available.
Reporting Frequency	Quarterly operational tracking; consolidated annually and before/after the main fire season where relevant.
Responsible Institution(s)	Proposed functional lead: Department of Forestry/District Forestry Offices with VNRMC/forest-block structures.
Data Quality / Verification	Verify team identity and roster, training completion and equipment receipt/availability; prevent double counting teams receiving refresher training or replacement equipment.
Methodological Notes / Assumptions	The baseline “Few” is qualitative and retained. Define the minimum equipment package and training completion standard before reporting.
Link to Adaptation Result	Builds local readiness to prevent, report and respond quickly to forest fires.

Field	Description
Indicator Level	Outcome
Indicator Name	% of fire outbreaks in which community teams respond within 2 hours
Indicator Definition	Percentage of the defined assessment universe that satisfies the indicator's agreed minimum performance/coverage criterion during the reporting period.
Purpose / Relevance to Adaptation	Measures timeliness of community response after wildfire detection or notification.
Metric / Unit of Measurement	Percent (%)
Calculation Method	Define the reporting universe and the minimum qualifying standard, assess each eligible unit, count qualifying units and divide by all eligible units assessed.
Formula	Percentage (%) = (Number meeting standard ÷ Total eligible units assessed) × 100
Numerator	Number of qualifying forest fire outbreaks where the designated community fire team initiated on-site or formally recorded response within 2 hours of the agreed alert/notification time.
Denominator	Total qualifying forest fire outbreaks requiring community-team response during the reporting period.
Baseline	Low
Baseline Year	2024
Target	≥80%
Target Year	2030
Data Source(s)	Fire response logs; incident reports; alert/communication timestamps.
Means of Verification	Fire response logs; Incident reports
Data Collection Method	Match each qualifying incident to alert and response timestamps, calculate elapsed time and classify whether response began within 2 hours.
Disaggregation	District; team; fire site; alert source; response time band; incident severity.
Reporting Frequency	Incident-based during the fire season, with annual consolidation and trend reporting.
Responsible Institution(s)	Proposed functional lead: District Forestry Offices/community fire-management structures with Department of Forestry oversight.
Data Quality / Verification	Use synchronized time records, a consistent definition of response start and documented exclusions for inaccessible/non-qualifying incidents.
Methodological Notes / Assumptions	The source baseline "Low" must be quantified as a 2024 response percentage. The clock should start from the formally defined alert/notification timestamp.
Link to Adaptation Result	Shows whether strengthened community capacity translates into rapid operational response that can limit fire spread.

Field	Description
Indicator Level	Impact
Indicator Name	% reduction in fire-related forest degradation in community-managed areas
Indicator Definition	Percentage reduction from baseline in the fire-related forest degradation index or degraded area within fixed community-managed forest boundaries.
Purpose / Relevance to Adaptation	Measures whether local fire-management capacity reduces longer-term degradation caused by recurrent or severe fires.
Metric / Unit of Measurement	Percent reduction (%)
Calculation Method	Establish a numeric baseline rate/index with a fixed measurement specification, repeat the same assessment and calculate the proportional reduction from baseline.
Formula	$\text{Reduction (\%)} = ((\text{Baseline value} - \text{Current value}) \div \text{Baseline value}) \times 100$
Numerator	Decrease in the measured rate/index relative to baseline.
Denominator	Numeric baseline rate/index value.
Baseline	High
Baseline Year	2024
Target	≥65%
Target Year	2030
Data Source(s)	NFMS; community forest health surveys; burned-area/fire-severity data where available.
Means of Verification	NFMS; Community Forest health surveys
Data Collection Method	Establish a baseline degradation measure attributable to fire, repeat the same NFMS/forest-health assessment and calculate percentage reduction.
Disaggregation	District; community-managed forest; forest type; degradation severity; fire season.
Reporting Frequency	Incident-based during the fire season, with annual consolidation and trend reporting.
Responsible Institution(s)	Proposed functional lead: Department of Forestry/NFMS with District Forestry Offices and community monitoring structures.
Data Quality / Verification	Use fixed boundaries, consistent degradation criteria and comparable season/sensor; triangulate remote-sensing change with field health observations.
Methodological Notes / Assumptions	The source baseline “High” is qualitative. Establish a numeric 2024 degradation index or affected-area baseline before calculating the ≥65% reduction.
Link to Adaptation Result	Demonstrates improved ecological condition and resilience of community-managed forests to wildfire.

Strategy 5: PEST AND DISEASE CONTROL

Adaptation Action 10: Establish biological control and pest management units

IDS F-35 — Output

Field	Description
Indicator Level	Output
Indicator Name	# of functional biological control and pest management units established in priority forestry zones
Indicator Definition	Number of unique biological control and pest management units that is established in a designated priority forestry zone and meets the approved functionality standard for staffing, surveillance, diagnostic/response capability and basic operational resources.
Purpose / Relevance to Adaptation	Measures institutional capacity available to detect and manage forest pests and diseases under changing climate conditions.
Metric / Unit of Measurement	Count
Calculation Method	Compile the relevant records, apply the qualifying criterion, deduplicate unique biological control and pest management units and count those meeting the criterion.
Formula	Count = $\sum I_i$, where $I_i = 1$ when biological control and pest management unit i meets the qualifying criterion, otherwise 0
Numerator	Number of unique qualifying biological control and pest management units.
Denominator	Not applicable (absolute count indicator).
Baseline	3
Baseline Year	2024
Target	≥10
Target Year	2030
Data Source(s)	Pest unit reports; staffing records; unit operational/asset records.
Means of Verification	MoNREM pest unit reports; Staffing records
Data Collection Method	Maintain a unit registry, assess each unit against the approved functionality checklist, and count units meeting all minimum criteria.
Disaggregation	Priority forestry zone/district; unit type; staffing level; functional-status criterion.
Reporting Frequency	Annual functionality assessment, with quarterly administrative updates where available.
Responsible Institution(s)	Proposed functional lead: Department of Forestry forest-health/pest-management function with relevant zonal/district offices.
Data Quality / Verification	Verify physical/organizational existence, current staffing and evidence of surveillance/response activity; reassess functionality annually.
Methodological Notes / Assumptions	A unit should not be counted as functional solely because it is administratively established; minimum operational criteria must be defined and consistently applied.

Field	Description
Link to Adaptation Result	Builds decentralized pest-management capability to protect climate-stressed forests.

Field	Description
Indicator Level	Outcome
Indicator Name	% of forest pest outbreaks managed or contained by established units
Indicator Definition	Percentage of the defined assessment universe that satisfies the indicator's agreed minimum performance/coverage criterion during the reporting period.
Purpose / Relevance to Adaptation	Measures the effectiveness of established units in responding to detected pest outbreaks.
Metric / Unit of Measurement	Percent (%)
Calculation Method	Define the reporting universe and the minimum qualifying standard, assess each eligible unit, count qualifying units and divide by all eligible units assessed.
Formula	Percentage (%) = (Number meeting standard ÷ Total eligible units assessed) × 100
Numerator	Number of confirmed forest pest outbreaks within unit coverage areas that meet the approved "managed or contained" response criterion.
Denominator	Total confirmed forest pest outbreaks within unit coverage areas during the reporting period.
Baseline	Very low
Baseline Year	2024
Target	≥80%
Target Year	2030
Data Source(s)	Pest surveillance data; response logs; diagnostic and treatment records.
Means of Verification	Pest surveillance data; Response logs
Data Collection Method	Register confirmed outbreaks, link them to response actions and outcome assessments, classify containment/management against protocol, and calculate the proportion meeting the criterion.
Disaggregation	Forestry zone/district; pest species/type; host species; outbreak severity; response method; containment status.
Reporting Frequency	Continuous/incident-based surveillance, consolidated at least annually.
Responsible Institution(s)	Proposed functional lead: Department of Forestry forest-health/pest-management units with district/site reporting.
Data Quality / Verification	Use confirmed outbreak definitions and standardized closure/containment criteria; verify response dates and outcomes through follow-up surveillance.
Methodological Notes / Assumptions	The source baseline "Very low" must be quantified as a 2024 percentage using the same managed/contained criterion used for target reporting.
Link to Adaptation Result	Shows that institutional pest-control capacity is reducing spread and impact of forest pest threats.

Field	Description
Indicator Level	Impact
Indicator Name	% reduction in tree mortality and defoliation due to pest infestations
Indicator Definition	Percentage reduction from baseline in the pest-attributable tree mortality/defoliation rate or approved combined forest-health impact index in monitored forest areas.
Purpose / Relevance to Adaptation	Measures the ultimate reduction in forest damage attributable to pest infestations.
Metric / Unit of Measurement	Percent reduction (%)
Calculation Method	Establish a numeric baseline rate/index with a fixed measurement specification, repeat the same assessment and calculate the proportional reduction from baseline.
Formula	$\text{Reduction (\%)} = ((\text{Baseline value} - \text{Current value}) \div \text{Baseline value}) \times 100$
Numerator	Decrease in the measured rate/index relative to baseline.
Denominator	Numeric baseline rate/index value.
Baseline	High
Baseline Year	2024
Target	≥60%
Target Year	2030
Data Source(s)	Forest health surveys; remote-sensing vegetation indices (NDVI); pest surveillance/diagnostic records.
Means of Verification	Forest health surveys; Remote sensing vegetation indices (NDVI)
Data Collection Method	Measure mortality and defoliation with a consistent field/remote-sensing protocol, attribute impacts to pest infestation where evidence supports attribution, and compare the current index/rate with baseline.
Disaggregation	District/forestry zone; pest species; host/tree species; mortality vs defoliation; severity class.
Reporting Frequency	Continuous/incident-based surveillance, consolidated at least annually.
Responsible Institution(s)	Proposed functional lead: Department of Forestry forest-health/NFMS function and pest-management units.
Data Quality / Verification	Use consistent sampling, causal attribution criteria and imagery season; separate drought/fire damage from pest-attributable damage where possible.
Methodological Notes / Assumptions	The indicator combines mortality and defoliation while the baseline is qualitative ("High"). Define a numeric 2024 combined index or report both components with a formally approved aggregation rule before calculating the ≥60% reduction.
Link to Adaptation Result	Demonstrates improved forest health and resilience to climate-sensitive pest pressures.

Strategy 6: AGROFORESTRY PROMOTION

Adaptation Action 11: Scale up climate-resilient agroforestry systems across vulnerable farming landscapes.

IDS F-38 — Output

Field	Description
Indicator Level	Output
Indicator Name	Farmland under climate-resilient agroforestry systems (e.g. Faidherbia, Gliricidia, pigeon pea intercropping)
Indicator Definition	Total verified, non-overlapping hectares of farmland where an approved climate-resilient agroforestry system is established and actively maintained within the defined reporting boundary.
Purpose / Relevance to Adaptation	Measures the scale of agroforestry adoption across vulnerable farming landscapes.
Metric / Unit of Measurement	Hectares (ha)
Calculation Method	Identify qualifying areas from administrative and geospatial records, verify that each area meets the indicator criteria, dissolve/remove overlaps, and sum the verified polygon area.
Formula	Total qualifying area (ha) = Σ verified non-overlapping area _i (ha)
Numerator	Total verified qualifying area in hectares.
Denominator	Not applicable (absolute area indicator).
Baseline	60,000 ha
Baseline Year	2024
Target	250,000 ha
Target Year	2030
Data Source(s)	Forestry Department plantation/agroforestry registers; GIS/remote-sensing analysis; extension records.
Means of Verification	Forestry Department plantation and agroforestry registers; GIS and remote sensing analysis
Data Collection Method	Compile georeferenced agroforestry parcels, verify active establishment using field/extension records and imagery where suitable, remove overlaps and sum qualifying hectares.
Disaggregation	District; agroforestry system/species; farm/landholding type; establishment year; vulnerability zone where available.
Reporting Frequency	Semi-annual implementation tracking with annual consolidated reporting.
Responsible Institution(s)	Proposed functional lead: Department of Forestry in coordination with agricultural extension and District Forestry/Agriculture offices.
Data Quality / Verification	Use a minimum tree-density/practice standard, georeferenced parcel records and unique farm identifiers; prevent double counting where multiple agroforestry practices occur on the same hectare.

Field	Description
Methodological Notes / Assumptions	Only farmland meeting the approved climate-resilient agroforestry definition should be counted; isolated tree planting below the minimum practice standard should be excluded.
Link to Adaptation Result	Tracks expansion of tree-based farming systems that buffer drought, heat, soil degradation and rainfall variability.

Field	Description
Indicator Level	Outcome
Indicator Name	Smallholder farmers adopting agroforestry practices in vulnerable districts
Indicator Definition	Number of unique smallholder farming households that is located in a designated vulnerable district and is actively applying at least one approved agroforestry practice that meets the minimum adoption standard.
Purpose / Relevance to Adaptation	Measures household-level adoption of agroforestry, complementing the area-based output indicator.
Metric / Unit of Measurement	Count
Calculation Method	Compile the relevant records, apply the qualifying criterion, deduplicate unique smallholder farming households and count those meeting the criterion.
Formula	$\text{Count} = \sum I_i$, where $I_i = 1$ when smallholder farming household i meets the qualifying criterion, otherwise 0
Numerator	Number of unique qualifying smallholder farming households.
Denominator	Not applicable (absolute count indicator).
Baseline	120,000 households
Baseline Year	2024
Target	500,000 households
Target Year	2030
Data Source(s)	Extension service records; agricultural household surveys; agroforestry programme registers.
Means of Verification	Extension service records; agricultural household surveys
Data Collection Method	Compile extension registers and/or estimate adoption from representative household surveys, apply the agreed adoption threshold and deduplicate households.
Disaggregation	District; household sex of head; agroforestry practice/species; adoption year; farm-size class; vulnerability group where available.
Reporting Frequency	Semi-annual implementation tracking with annual consolidated reporting.
Responsible Institution(s)	Proposed functional lead: agricultural extension/household survey function in coordination with Department of Forestry agroforestry programmes.
Data Quality / Verification	Use unique household identifiers where administrative data are used; validate self-reported adoption against farm observations in survey subsamples; avoid adding survey estimates to administrative counts.
Methodological Notes / Assumptions	Define “smallholder,” “vulnerable district,” and the minimum practice threshold before reporting; use one primary estimation method for the national total.
Link to Adaptation Result	Shows diffusion of climate-resilient farm practices among vulnerable smallholder households.

Field	Description
Indicator Level	Impact
Indicator Name	Increased resilience of crop production to drought and rainfall variability
Indicator Definition	Percentage improvement from the 2025 baseline in a formally defined crop-yield stability index for target smallholder production exposed to drought and rainfall variability.
Purpose / Relevance to Adaptation	Measures whether agroforestry improves the stability of crop production under drought and rainfall variability.
Metric / Unit of Measurement	Percent improvement in yield stability (%)
Calculation Method	Fix a yield-stability index and comparable crop/geographic sample at baseline, calculate the index for subsequent periods using the same method, and compute percentage improvement from the 2025 baseline.
Formula	$\text{Yield-stability improvement (\%)} = ((\text{Current stability index} - \text{2025 baseline stability index}) \div \text{2025 baseline stability index}) \times 100$
Numerator	Increase in the yield-stability index compared with its 2025 baseline value.
Denominator	2025 baseline yield-stability index value.
Baseline	Baseline yield variability in 2025
Baseline Year	2025
Target	25% improvement in yield stability
Target Year	2030
Data Source(s)	National crop assessment reports; post-season agricultural surveys; agroforestry adoption records; rainfall/drought classification data where available.
Means of Verification	National crop assessment reports; post-season agricultural surveys
Data Collection Method	Apply a fixed crop-yield stability method to comparable crop, geography and farmer groups, establish the 2025 baseline stability statistic and calculate improvement using the same method through 2030.
Disaggregation	District; crop; agroforestry system; drought/rainfall condition; farm-size class; adopter/non-adopter where data permit.
Reporting Frequency	Annual after the main crop assessment/post-season survey cycle; multi-year stability trend reviewed through 2030.
Responsible Institution(s)	Proposed functional lead: national crop-assessment/agricultural statistics function in coordination with Department of Forestry/agroforestry programme monitoring.
Data Quality / Verification	Keep crop definitions, sampling, yield estimation and climatic-season classification consistent; control or stratify for major non-climate shocks where possible and report uncertainty.

Field	Description
Methodological Notes / Assumptions	The source allows “% increase in average yields and/or stability index,” but the impact wording and target specifically concern yield stability. A single primary yield-stability index must be formally fixed at baseline; average yield may be reported as a supporting measure but should not substitute for the target metric.
Link to Adaptation Result	Demonstrates the food-production resilience benefit of climate-resilient agroforestry systems.

Adaptation Action 12: Promote protective and climate-buffer forests prioritizing native and drought-resilient species

IDS F-41 — Output

Field	Description
Indicator Level	Output
Indicator Name	Area of protective and climate-buffer forests established or restored (riparian buffers, hillslopes, windbreaks)
Indicator Definition	Total verified, non-overlapping hectares of protective or climate-buffer forest area in designated riparian, hillslope, windbreak or other priority buffer locations that is newly established or restored and meets the approved condition standard within the defined reporting boundary.
Purpose / Relevance to Adaptation	Measures the scale of protective forest buffers established to reduce erosion, runoff, wind exposure and other climate-related land degradation risks.
Metric / Unit of Measurement	Hectares (ha)
Calculation Method	Identify qualifying areas from administrative and geospatial records, verify that each area meets the indicator criteria, dissolve/remove overlaps, and sum the verified polygon area.
Formula	Total qualifying area (ha) = Σ verified non-overlapping area _i (ha)
Numerator	Total verified qualifying area in hectares.
Denominator	Not applicable (absolute area indicator).
Baseline	15,000 ha
Baseline Year	2024
Target	120,000 ha
Target Year	2030
Data Source(s)	Forest restoration reports; GIS mapping; national forest inventory; site establishment records.
Means of Verification	Forest restoration reports; GIS mapping; national forest inventory
Data Collection Method	Map qualifying buffer polygons, verify establishment/restoration condition and location, remove overlaps and sum hectares.
Disaggregation	District; buffer type (riparian/hillslope/windbreak/other); native/drought-resilient species; establishment/restoration year; catchment.
Reporting Frequency	Semi-annual implementation tracking with annual consolidated reporting.
Responsible Institution(s)	Proposed functional lead: Department of Forestry with District Forestry Offices and relevant catchment/land managers.
Data Quality / Verification	Verify spatial location against designated buffer zones, species/practice criteria and field evidence; ensure consistent area boundaries and no overlap double counting.

Field	Description
Methodological Notes / Assumptions	Define minimum width/density/condition standards by buffer type so that reported hectares represent functional protective forests rather than nominal planting area.
Link to Adaptation Result	Tracks creation/restoration of forest buffers that protect catchments, slopes, farms and ecosystem services.

Field	Description
Indicator Level	Outcome
Indicator Name	Priority catchments and vulnerable landscapes with functional forest buffer zones
Indicator Definition	Percentage of the defined assessment universe that satisfies the indicator's agreed minimum performance/coverage criterion during the reporting period.
Purpose / Relevance to Adaptation	Measures coverage of functional forest buffers across the priority landscapes where they are most needed.
Metric / Unit of Measurement	Percent (%)
Calculation Method	Define the reporting universe and the minimum qualifying standard, assess each eligible unit, count qualifying units and divide by all eligible units assessed.
Formula	Percentage (%) = (Number meeting standard ÷ Total eligible units assessed) × 100
Numerator	Number of designated priority catchments/vulnerable landscapes that meet the approved functional forest-buffer-zone standard.
Denominator	Total number of designated priority catchments/vulnerable landscapes in the fixed reporting universe.
Baseline	12%
Baseline Year	2024
Target	≥60%
Target Year	2030
Data Source(s)	Catchment management plans; Forestry Department monitoring reports; GIS buffer and catchment layers.
Means of Verification	Catchment management plans; Forestry Department monitoring reports
Data Collection Method	Assess each designated priority catchment/landscape against a standard functionality checklist and calculate the proportion meeting the threshold.
Disaggregation	District; catchment/landscape; buffer type; functional-status criterion; vulnerability class.
Reporting Frequency	Annual; remote-sensing or field reassessment may be aligned with the relevant seasonal monitoring window.
Responsible Institution(s)	Proposed functional lead: Department of Forestry in coordination with relevant catchment-management and district functions.
Data Quality / Verification	Maintain a fixed, version-controlled priority-catchment list; use consistent functionality criteria and verify status with maps and field monitoring.
Methodological Notes / Assumptions	The denominator must be the formally designated priority-catchment/vulnerable-landscape universe; changes to that universe should be versioned and reported separately.

Field	Description
Link to Adaptation Result	Shows whether protective forest interventions are sufficiently distributed to provide catchment- and landscape-scale resilience.

Field	Description
Indicator Level	Impact
Indicator Name	Reduction in climate-related land degradation and ecosystem service loss (erosion, flash floods, siltation)
Indicator Definition	Percentage reduction from baseline in the hectares of land meeting the approved climate-related degradation criterion within the intervention/priority landscape, derived from comparable area measurements.
Purpose / Relevance to Adaptation	Measures whether protective forest buffers reduce climate-related land degradation and associated ecosystem-service losses.
Metric / Unit of Measurement	Hectares (ha) observed; percent reduction (%) derived for target tracking
Calculation Method	Measure the relevant affected area at baseline and in the reporting year using the same spatial definition, then calculate the percentage reduction from baseline hectares.
Formula	$\text{Reduction (\%)} = ((\text{Baseline affected area (ha)} - \text{Current affected area (ha)}) \div \text{Baseline affected area (ha)}) \times 100$
Numerator	Reduction in affected hectares compared with baseline.
Denominator	Baseline affected area in hectares.
Baseline	Baseline degradation indicators in 2025
Baseline Year	2025
Target	40% reduction
Target Year	2030
Data Source(s)	Environmental monitoring data; river sediment monitoring; national land degradation assessments; GIS land-condition layers.
Means of Verification	Environmental monitoring data; river sediment monitoring; national land degradation assessments
Data Collection Method	Establish 2025 degraded hectares and supporting degradation indicators using a fixed method, repeat assessments in the same boundaries, and derive the percentage reduction in degraded area; retain sediment/erosion indicators as supporting evidence.
Disaggregation	District; catchment/landscape; degradation type (erosion, flood damage, siltation/other); severity; buffer type.
Reporting Frequency	Annual; remote-sensing or field reassessment may be aligned with the relevant seasonal monitoring window.
Responsible Institution(s)	Proposed functional lead: Department of Forestry with relevant environmental, land-degradation and catchment monitoring functions.
Data Quality / Verification	Use consistent degradation definitions, spatial boundaries, imagery/survey methods and event thresholds; distinguish climate-related degradation from unrelated land-use change where feasible.

Field	Description
Methodological Notes / Assumptions	The source metric is “Hectares (ha)” while the target is a “40% reduction.” Retain hectares as the primary observed quantity and derive target performance as the percentage reduction in degraded hectares from the 2025 baseline. Do not treat 40% as hectares.
Link to Adaptation Result	Demonstrates the landscape-scale resilience effect of protective forests on erosion, flash-flood and siltation impacts.