

Blue Halo S – Blue Ecosystem Adaptation Mechanism (BEAM)

ANNEX 11: Monitoring and Evaluation Plan

Introduction

This document describes the framework Monitoring and Evaluation Plan (MEP) for the proposed GCF Project: “Blue Halo S – Blue Ecosystem Adaptation Mechanism (BEAM)”. The MEP focuses on measuring the delivery of Project outputs / outcomes and defines key aspects of how monitoring and evaluation approaches will be implemented to accurately and efficiently measure and report Project progress against defined indicators. The MEP provides guidance to the Project team, particularly to the M&E teams, on how data collection will be undertaken to assess Project impacts, how monitoring data will be analysed, and the dissemination of results to the AE, GCF, NDA, and internally for program improvement and adaptive management.

This MEP is a living document that will be reviewed and updated as necessary in response to changes in Project context and dynamics.

The Project Theory of Change

The Project Theory of Change (ToC) illustrates the relationships between activities, outputs, and intended outcomes. The ToC illustrates in diagrammatic form the linkages between program activities and outputs, and how these will lead to achieving desired outcomes, co-benefits, and ultimately, the transformational paradigm shift. The ToC is set out in the Funding Proposal and in the Feasibility Study (Annex 2), and is presented in Figure 1, below.

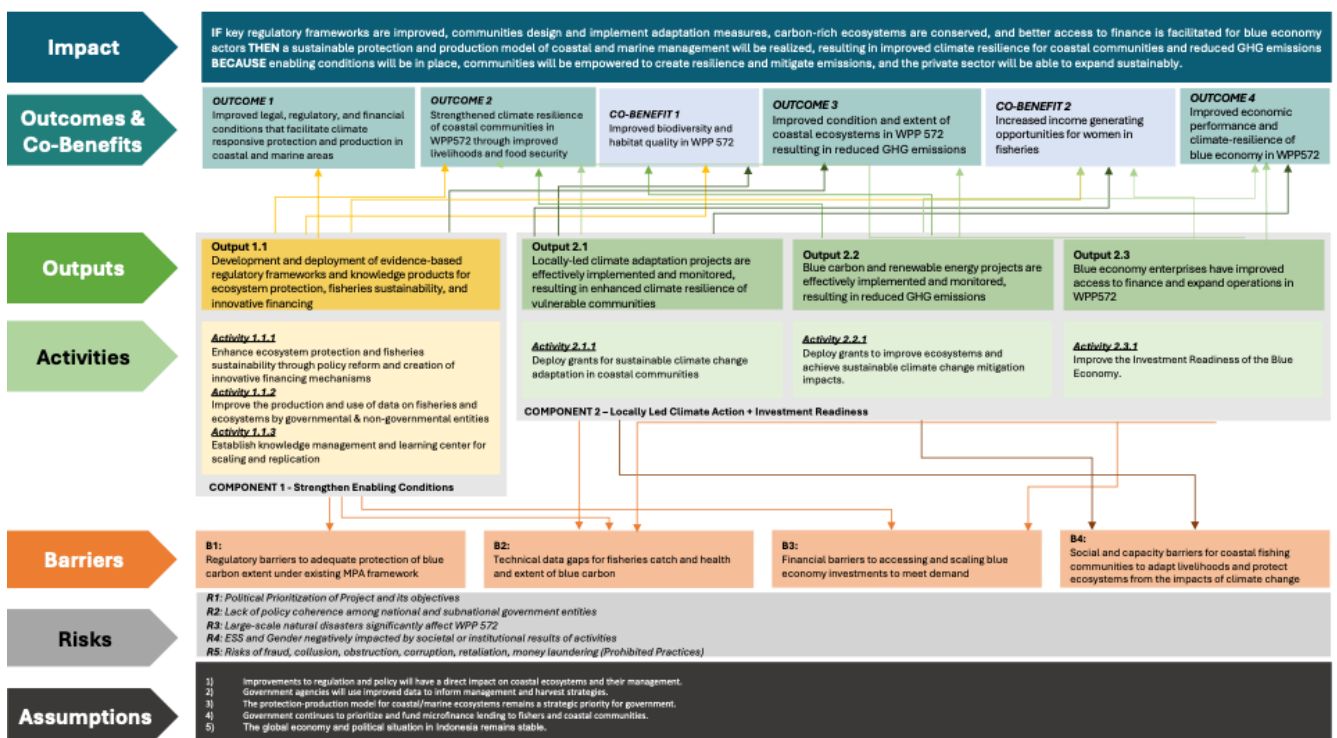


Figure 1. BEAM Project Theory of Change

Project Goal Statement:

IF key regulatory frameworks are improved, communities design and implement adaptation measures, carbon-rich ecosystems are conserved, and better access to finance is facilitated for blue economy actors THEN a sustainable protection and production model of coastal and marine management will be realized, resulting in improved climate resilience for coastal communities and reduced GHG emissions BECAUSE enabling conditions will be in place, communities will be empowered to create resilience and mitigate emissions, and the private sector will be able to expand sustainably.

Logical Framework:

The logical framework (logframe) describes the Project structure (Outcomes, Outputs, Activities, Sub-Activities, Deliverables, and means of verification). The project includes four Outcomes under two Components, which are summarized below.

Project Outcomes and Co-Benefits:

Outcome 1. Improved legal, regulatory, and financial conditions that facilitate climate responsive protection and production in coastal & marine areas

Outcome 2. Strengthened climate resilience of coastal communities in WPP 572 through improved livelihoods and food security

Outcome 3. Improved condition and extent of coastal ecosystems in WPP572 resulting in reduced GHG emissions

Outcome 4. Improved economic performance and climate resilience of blue economy in WPP572

Co-Benefit 1. Improved biodiversity and habitat quality in WPP 572

Co-Benefit 2. Increased income generating opportunities for women in fisheries

Project Components:

Component 1 - Strengthen Enabling Conditions

Component 1 focuses on creating the enabling conditions for the GoI's regulatory and policy environment to allow for effective protection and production in WPP 572, providing a model to scale these interventions across Indonesia. This strategic approach will improve the effectiveness of the grant-based support delivered under Component 2. Component 1 activities will equip relevant stakeholders with adequate training and resources to sufficiently support fisheries science, evidence-based fisheries policy, and marine ecosystem management. These activities are captured in the logframe under the following Output:

Output 1.1. Development and deployment of evidence-based regulatory frameworks and knowledge products for ecosystem protection, fisheries sustainability, and innovative financing

Component 2 – Locally Led Climate Action + Investment Readiness

Component 2 will provide targeted support to local communities, CSOs, private-sector enterprises, and institutions through complementary grant windows and technical assistance that respond directly to climate threats as identified by beneficiaries. The grant windows and technical assistance will provide financial resources to support climate change adaptation, mitigation, and support the growth and financial inclusion (investment readiness) of climate responsive blue-economy enterprises. These interventions are captured in the logframe under the following Outputs:

Output 2.1. Locally-led climate adaptation projects are effectively implemented and monitored, resulting in enhanced climate resilience of vulnerable communities

Output 2.2. Blue carbon and renewable energy projects are effectively implemented and monitored, resulting in reduced GHG emissions

Output 2.3. Blue economy enterprises have improved access to finance and expand operations in WPP572

Contributions to GCF's Integrated Results Management Framework

Detailed descriptions of the project impacts and outcomes can be found in sections E.2 and E.3 of the logframe within the Funding Proposal. Please also see **Annex 22** (GHG emissions reductions) and **Annex 24** (adaptation beneficiary calculations). The following is a summary of the alignment of the Project with the GCF's Mitigation and Adaptation Results Areas:

MRA4 Forestry and land use

The Project will target enhanced carbon sequestration and storage and lead to decreased greenhouse gas (GHG) emissions

MRA1 Energy Generation and Access

The Project will provide grants for solar chillers / ice machines to be installed on fishing vessels to reduce spoilage / waste of catch, while reducing GHG emissions.

Core 1: GHG emissions reduced, avoided or removed/sequestered.

ARA1 Most vulnerable people and communities

Vulnerable coastal fishing communities will be the primary beneficiaries of grant-based assistance for activities that will strengthen their resilience to climate change by diversifying and improving incomes (Outcomes 1 and 3).

Supplementary 2.1: Beneficiaries (women/men) adopting improved and/or new climate-resilient livelihood options

ARA2 Health, well-being, food and water security

Participatory improvement of ecosystem services, economic activities that preserve fish quality, and improvements to fish catch yields will improve the food security of local communities (Outcome 3).

Supplementary 2.2: Beneficiaries (women/men) with improved food security

ARA4 Ecosystems and ecosystem services

As outlined under MRA 4, the Project will improve the state of marine and coastal ecosystems, which will increase provision of ecosystem services, such as improved habitats for fish species (Outcomes 1 and 2).

Supplementary 4.1: Hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal marine areas brought under restoration and/or improved ecosystems

1.1 Monitoring Plan

GCF IRMF Outcome level monitoring (IRMF core indicators 1-4)

Data/Source	Collection Tool	Frequency	Indicator	Indicative Budget (USD)
Project's database management system (DBMS) development, update, and maintenance.	Survey/questionnaire Key informant interviews GIS data	Annually	The database will cover (but not be limited to) the number of beneficiaries, grantees, blue economy enterprise partners, adaptations, mitigation, etc., as the project intervenes.	M&E Staff time; Consultants to support database for overall indicators and project data.
MRA 1 Energy generation and access				
Core 1: GHG emissions reduced, avoided or removed/sequestered				
Regular monitoring and activity reports on small scale renewable energy deployment/installation, produced by grantees; grantee reports will be used for monitoring GHG reductions	Document review	Annually	Avoided/reduced GHG emissions	M&E Staff time; Consultants to support database for overall indicators and project data.

MRA 4. Forestry and land use				
Core 1: GHG emissions reduced, avoided or removed/sequestered				
- The GoI (MMAF) GIS data on mangrove and seagrass in the targeted area. - Mangrove and seagrass mapping using remote sensing - Hectare areas of nature restoration, reduced deforestation/degradation - Data on the improved MPA will be obtained by using EVIKA (<i>Evaluasi Efektivitas Pengelolaan Kawasan Konservasi</i> - Evaluation of Conservation Area Management Effectiveness)¹.	<i>GIS data</i> <i>Field observation visits</i> <i>EVIKA data (as baseline and endline)</i>	In the beginning of the project, midline, and at endline of Project implementation	Avoided GHG emissions	<i>M&E Staff time; EE: KI</i> <i>Consultant to calculate avoided Emissions.</i> <i>Consultant to calculate avoided Emissions.</i> <i>Results will be used for multiple indicators included in the M&E Plan.</i>
ARA 1. Most vulnerable people and communities				
Supplementary 2.1: Beneficiaries (women/men) adopting improved and/or new climate-resilient livelihood options				
Disaggregated data on grantee's beneficiaries who have adopted improved or new climate-resilient livelihoods	<i>Survey/questionnaire</i> <i>Grantee data collection</i>	In the beginning and at the end of sub-grant implementation (midline possible)	Number of people with increased income. (women/men) resilient livelihood options (50% men and 50% women).	<i>KI M&E Staff time and staff travel.</i> <i>EE: KI</i>
Supplementary 2.5: Beneficiaries (female/male) adopting innovations that strengthen climate change resilience				
The data used will be a combination of: The latest national population survey and national socio-economic survey (susenas). Source: BPS Annual assessment throughout the project implementation period.	<i>Government data/records</i> <i>Survey/questionnaire</i>	Annually	Beneficiaries (female/male) adopting innovations that strengthen climate change resilience	<i>M&E Staff time; EE: KI</i>
ARA 2. Health, well-being, food and water security				
Supplementary 2.2: Beneficiaries (women/men) with improved food security				
- Food security status of grantee's beneficiaries, with gender-disaggregated data. - Waste management interventions will also result in improved health, well-being, food, and water security per Supplementary 2.2. Data collection will be undertaken by the grant recipients.	<i>Survey/questionnaire</i>	In the beginning and at the end of sub-grant implementation (midline possible)	Number of people with improved food security	<i>KI M&E Staff time and staff travel.</i> <i>EE: KI</i>
ARA 4. Ecosystems and ecosystem services				
Supplementary 4.1: Hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal marine areas brought under restoration and/or improved ecosystems				

¹ Source: <https://www.coraltrianglecenter.org/wp-content/uploads/2021/12/Pedomar-Teknis-Evika-2020.pdf>

- MMAF data and legal documents on mangroves, seagrass, MPA, and OECM. - Baseline, mid-term, and end-line studies conducted by a third-party contractor, and grantees' monitoring report. - Data on the improved MPA will be obtained by using EVIKA (<i>Evaluasi Efektivitas Pengelolaan Kawasan Konservasi</i> - Evaluation of Conservation Area Management Effectiveness)². - Formal recognition of OECM establishment. - Mangrove, seagrass, and coral reef mapping using remote sensing	<i>Government data/records</i> <i>Field observation visits</i> <i>GIS data</i> <i>Document review</i>	Annually	Hectares of mangrove, seagrass, and coral reefs restoration, Improved MPAs, New expansion of MPAs and OECMs	<i>KI M&E Staff time and staff travel.</i> <i>EE: KI</i> <i>See indicator Core 1.</i>
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Supplementary 4.3: Tonnes of fish stock brought under sustainable management practice

- MMAF data on fisheries production - Project reports of KI on the Sub-Activity 1.1.2.2	<i>Survey/questionnaire</i>	Mid-Term and Final	Catch Per Unit Effort and Exploitation Rate	<i>KI M&E Staff time and staff travel.</i> EE: KI
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Project-level Output monitoring

Data/Source	Collection Tool	Frequency	Indicator	Indicative Budget
Outcome 1. Improved legal, regulatory, and financial conditions that facilitate climate responsive protection and production in coastal & marine areas				
Output 1.1. Development and deployment of evidence-based regulatory frameworks and knowledge products for ecosystem protection, fisheries sustainability, and innovative financing.				
• Baseline, mid-term, and end-line studies analyzing government legal instruments, reports, institutional and regulatory frameworks • National and regional planning documents such as RPJMN, RPJMD, Renstra. • Ministerial regulations related to integrated protection-production, non-conventional funding resources, management of conservation grant. • Development and management of Marine Protected Areas (MPAs). • Development and management of other area-based conservation measures. • Fisheries Management Plan (Fisheries Management Plan or Rencana Pengelolaan Perikanan - RPP WPP 572,	<i>Government data/records</i>	Annually	Number of regulatory frameworks on ecosystem protection, fisheries sustainability, and innovative financing developed.	<i>M&E Staff time, staff travel, and meetings with stakeholders for data verification.</i> EE: KI

² Source: <https://www.coraltrianglecenter.org/wp-content/uploads/2021/12/Pedoman-Teknis-Evika-2020.pdf>

Data/Source	Collection Tool	Frequency	Indicator	Indicative Budget
- Fisheries Harvest Strategy - HS, Fisheries Harvest Control Rule - HCR). - Interregional Area Zoning Plan or Rencana Zonasi Kawasan Antarwilayah - RZ KAW; Coastal Areas and Small Islands Zoning Plan - Those related to innovative financing include, but are not limited to, blue bonds and blended finance.				
- Regular monitoring and activity reports on the data sets produced, updated, consolidated, and used by governments (e.g., BRIN), non-governments, and civil society organizations. - Government and non-government documents e.g., planning, regulations, policies, etc., that utilize the data sets for improved decision-making.	<i>Government data/records</i> <i>Document review</i>	Annually	Number of data sets on fisheries and relevant coastal marine ecosystems produced, updated, consolidated, and better used by government and non-government entities.	<i>M&E staff time, staff travel, and meetings with stakeholders for data verification.</i>
Regular monitoring and activity reports on knowledge and learning center establishment produced by consultants, government agencies, non-government agencies, and KI.	<i>Document review</i>	Evaluated at mid-term and endline of the Project implementation period	Number of knowledge and learning centers established for enhanced ecosystem management and sustainable fishing practices.	<i>M&E staff time, staff travel, and meetings with stakeholders for data verification.</i>
Regular monitoring and activity reports on the lesson learned developed and published. The reports will be produced by KI and grantees.	<i>Document review</i>	Evaluated at Mid-term and endline of the Project implementation period	Number of lessons learned documents on grant operations, pipeline development and successful blue economy interventions for scaling up and replicability	<i>M&E Staff time.</i>
Meeting attendance records and surveys of participants / visitors to KLC	<i>Document review</i>	Annually	Number of beneficiaries adopting innovations to strengthen climate finance	<i>M&E Staff time.</i>
Outcome 2. Strengthened climate resilience of coastal communities in WPP 572 through improved livelihoods and food security				
Output 2.1: Locally-led climate adaptation projects are effectively implemented and monitored, resulting in enhanced climate resilience of vulnerable communities				
Regular monitoring and activity reports on the adaptation interventions, produced by grantees, and verified through the	<i>Field observation visits</i>	Annually	Number of vulnerable coastal community members who receive direct	<i>M&E staff time and staff travel.</i> EE: KI

Data/Source	Collection Tool	Frequency	Indicator	Indicative Budget	
Project's M&E planned activities	<i>Document review</i>			benefits of improved livelihoods and improved food security from supported activities under the grant facility pertaining to adaptation interventions in WPP 572	
• Regular monitoring and activity reports on mitigation intervention, produced by grantees, and verified through the Project's M&E planned activities	<i>Document review</i>			Number of individuals with improved climate resilience resulting from mitigation interventions	<i>M&E staff time EE: KI</i>
• Regular monitoring and activity reports on the small scale renewable energy deployment/installation produced by grantees.	<i>Document review</i>			Kilowatt-hour small-scale renewable energy deployed/installed.	<i>M&E staff time EE: KI</i>
Outcome 3. Improved condition and extent of coastal ecosystems in WPP572 resulting in reduced GHG emissions					
Output 2.2: Blue carbon and renewable energy projects are effectively implemented and monitored, resulting in reduced GHG emissions					
• Mangrove and seagrass mapping using remote sensing • Seagrass mapping using remote sensing and field visit for confirmation adhere to SNI 7716.2012	<i>Field observation visits GIS data</i>	Annually	Hectares of carbon rich ecosystems conserved and rehabilitated, and GHG emissions avoided intervention in WPP 572	M&E Staff time EE: KI	
• Regular monitoring and activity reports on mitigation, interventions, produced by grantees and verified through project's M&E planned activities	<i>Document review</i>		Number of beneficiaries with improved climate resilience resulting from mitigation interventions (improved livelihood and or food security)	M&E Staff time EE: KI	
• Regular monitoring and activity reports on the small scale renewable energy deployment/installation produced by grantees.	<i>Document review</i>	Annually	Kilowatt-hour small-scale renewable energy deployed/installed.	M&E Staff time EE: KI	
Outcome 4. Improved economic performance and climate resilience of blue economy in WPP572					
Output 2.3: Blue economy enterprises have improved access to finance and expand operations in WPP572					
• Training attendance records; • Post training competency assessments. • Progress reports from service providers/consultants	<i>Document review</i>	Annually	Number of BLU LPMUKP extension officers trained in simplified disbursement method	M&E Staff time and travel. EE: KI	

Data/Source	Collection Tool	Frequency	Indicator	Indicative Budget
IT system deployment reports; system usage logs verified against BLU LPMUKP internal records	<i>Document review</i>	Annually	Deployment of digitized loan management system operational and actively used to process loan applications / number of new loans issued through system Number of total loans approved in new IT system to be monitored	<i>M&E Staff time and travel.</i> <i>EE: KI</i>
Published research papers; dissemination event reports (workshops, webinars, policy briefs); list of recipient organizations	<i>Document review</i>	Annually	Number of action-oriented research papers produced and disseminated to financial intermediaries, development partners and policymakers.	<i>M&E Staff time</i> <i>EE: KI</i>
Reports number of loans issued by BLU LPMUPK and meeting reports	<i>Public expenditure reporting</i>	Annually	Number of individuals with improved climate resilience from improved and diversified livelihoods.	<i>M&E Staff time</i> <i>EE: KI</i>
Co-Benefit				
Co-Benefit 1. Improved biodiversity and habitat quality in WPP 572				
Habitat quality survey by consultant and grantees and MPA management units in targeted MPAs.	<i>Document review</i> <i>Field observation visits</i>	Baseline, midline, and End of Project	Coral reef habitat quality (coral cover within targeted MPAs)	<i>M&E Staff; Consultant and grantees to monitor coral cover and mangrove density at MPAs (3 new MPAs and 2 existing provincial MPAs)</i> <i>EE: KI</i>
Mangrove monitoring surveys conducted by consultant and grantees and relevant government agencies in targeted sites	<i>Document review</i> <i>Field observation visits</i>	Baseline, midline, and End of Project	Mangrove habitat quality (mangrove density)	<i>Staff, consultants, and government agencies</i>
Co-Benefit 2. Increased income generating opportunities for women in fisheries				
Household livelihood surveys of targeted beneficiaries on changes in income, with sex disaggregated data	<i>Survey/questionnaire</i> <i>Document review</i>	Biannually	Percent of targeted women (particularly women-headed household and other vulnerable groups) in blue economy sectors and fisheries with increased income	<i>M&E Staff;</i> <i>EE: KI</i>

Note: As indicated in the table, some of the indicators are derived from information on mangrove coverage changes and so the costs have only been budgeted once (under *Supplementary 4.1: Hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal marine areas brought under restoration and/or improved ecosystems by the project*).

A summary of costs for Project M&E activities is below; details can be found in Annex 04. Additional staff time and travel for other project activities, not listed here, will also support project M&E. Most significantly, staff and consultant time related progress monitoring of grants issued under the BEAM Grant Mechanism in Component 2 will feed into M&E reporting but is budgeted under grant management in Component 2 activities.

Summary of costs for Project M&E activities

Cost category	Description	Amount (USD)
Staff Costs	M&E staff, Safeguards & Gender staff	597,536
Local consultants	- Database Management System (DBMS) consultant at startup, Y1, Y3, and Y5 (USD 107,349) - Evaluation Data Consultant at Y1, Y3, and Y5 (USD 51,843) - GHG Emissions Consultant at Y1, Y3, and Y5 (USD 156,776) - Co-benefit Indicator Consultant at Y1 and Y5 (USD 81,251)	397,219
Equipment & Supplies	IT equipment for M&E staff, and supplies related to M&E activities	26,140
Travel, Meetings, and Workshops	M&E staff and Regional Managers travel related to M&E, and M&E-related meetings	223,560
Professional Services	Professional services related to M&E staff hiring	36,327
Other	Other Direct Costs related to M&E activities	129,851
Total		1,410,633

Monitoring, Reporting, Verification (MRV), Data Management, Quality Assurance and Quality Control (QA/QC), and Verification Framework

The project will establish a data quality assurance and quality control (QA/QC) system to ensure that monitoring data are accurate, complete, consistent, timely, and fit for reporting against the project's logical framework and indicators. Standardized data collection protocols, indicator definitions, data verification procedures, and reporting templates will be applied across all implementing partners and grantees. Routine data quality checks will be conducted as part of regular monitoring, including verification of source documents, consistency checks, and periodic field verification.

Greenhouse gas (GHG) emission reductions and removals will be estimated using the methodologies described in Annex 22. and verified by an independent third-party verifier in accordance with internationally recognized standards. Measures to minimize the risk of double-counting between policy-driven protection (Activity 1.1.1) and community-driven field grants (Activity 2.1.1), including the application of the Effectiveness Index (EI), are described in Annex 22.

Adaptation outcomes, including improvements in climate resilience, livelihoods, food security, and ecosystem condition, will be validated through independent baseline, mid-term, and end-line assessments conducted by qualified third-party consultants, complemented by routine project monitoring and field verification. Ecosystem indicators such as mangrove extent, seagrass coverage, and marine protected area effectiveness will be verified using a combination of remote sensing, field surveys, and government monitoring systems, while socio-economic indicators will be validated through statistically representative household and beneficiary surveys. Methodologies for mitigation and adaptation impact estimation will follow the approaches described in Annex 22 and Annex 24 respectively, ensuring transparency, traceability, and consistency between calculation methodologies and project-level reporting.

The EE will have overall responsibility for implementing the QA/QC system, coordinating data collection, and ensuring compliance with reporting requirements. Implementing partners and grantees will be responsible for primary data collection and submission, while independent experts will conduct verification of GHG emissions and key adaptation outcomes. All supporting datasets, calculation spreadsheets, GIS layers, survey instruments, and monitoring records will be maintained to facilitate third-party verification, independent evaluation, and reporting to the AE and GCF.

The table below summarizes the monitoring, reporting, verification, data management, quality assurance, and verification arrangements for key mitigation and adaptation indicators, including measurement methodologies, data sources, management of assumptions and uncertainties, and independent verification procedures.

MRV, QA/QC, and Verification Framework for Mitigation and Adaptation Indicators

Result Area / Indicator	Activity/Sub-Activity	Measurement Methodology & Parameters	Data Sources	QA/QC and Data Validation	Assumptions & Uncertainty Management	Verification Arrangements
MRA4. GHG Emission Reductions – Improved MPA/OECM Management	- Activity 1.1.1/ Sub-Activity 1.1.1.2	IPCC Wetlands Supplement methodology using mangrove extent, seagrass extent, ecosystem loss rates, carbon stock values, sequestration rates, and EVIKA management effectiveness scores.	Global Mangrove Watch, Allen Coral Atlas, EVIKA assessments, MPA management reports, GIS datasets.	GIS consistency checks, review of EVIKA scoring, spreadsheet validation, avoidance of double counting between intervention areas.	Assumptions on ecosystem loss rates, carbon stocks, sequestration rates, and effectiveness of management improvements are documented and reviewed periodically.	Periodic technical review and independent verification of reported emission reductions.
MRA4. GHG Emission Reductions – Community Adaptation Grants	- Activity 2.1.1/ Sub-Activities 2.1.1.1, 2.1.1.2, 2.1.1.3	Estimation of avoided ecosystem degradation and associated emission reductions within MPAs and adjacent buffer zones using Annex 22 methodologies.	Grantee monitoring reports, GIS monitoring, ecosystem condition assessments.	Spatial overlap analysis and validation of conservation outcomes.	Assumptions regarding grant effectiveness and ecosystem pressure reduction are documented.	Independent review of calculations and supporting evidence.
MRA4. GHG Emission Reductions – Ecosystem Restoration	- Activity 2.1.1/ Sub-Activity 2.1.1.1	Restored hectares multiplied by approved sequestration and burial rates for mangroves and seagrass ecosystems.	Restoration monitoring reports, GPS coordinates, field surveys, drone imagery.	Verification of restoration area, survival rates, and location data.	Assumptions regarding restoration performance and sequestration rates are tracked through an assumptions register.	Field verification and independent technical review.
MRA1. GHG Emission Reductions – Renewable Energy Investments	- Activity 2.1.1/ Sub-Activity 2.1.1.2	Renewable electricity generation and displaced grid electricity calculated using grid emission factors and operational performance data.	Equipment records, energy generation logs, maintenance records.	Equipment verification, operational data review and consistency checks.	Assumptions regarding energy generation and equipment utilization are documented and updated as monitoring data become available.	Independent verification of operational and emission reduction data.
ARA1 Supplementary Indicator 2.1 – Beneficiaries adopting climate-resilient livelihoods	- Activity 2.1.1/ Sub-Activities 2.1.1.1, 2.1.1.2, 2.1.1.3 - Activity 2.3.1/ Sub-Activity 2.3.1.1	Beneficiary tracking using approved grant applications, and grantee reporting following Annex 24 methodology.	Beneficiary registries, grant records, grantee reports.	Duplicate beneficiary screening and verification of beneficiary records.	Assumptions regarding household size, overlap rates and beneficiary estimates are documented and periodically reviewed.	Verification through field visits and report review.
ARA1 Supplementary Indicator 2.5 – Beneficiaries adopting resilience innovations	- Activity 1.1.1 - Activity 1.1.2 - Activity 1.1.3 - Activity 2.1.1 - Activity 2.2.1 - Activity 2.3.1	Training records, participation records, KLC and KMIS usage data	Attendance sheets, workshop reports, KLC visitor logs, KMIS analytics.	Validation of participation records and duplicate participant screening.	Assumptions regarding visitor numbers and user engagement are periodically reviewed.	Verification through attendance records, analytics and independent assessments.

Result Area / Indicator	Activity/Sub-Activity	Measurement Methodology & Parameters	Data Sources	QA/QC and Data Validation	Assumptions & Uncertainty Management	Verification Arrangements
ARA2 Supplementary Indicator 2.2 – Beneficiaries with improved food and water security	- Activity 2.1.1/ Sub-Activities 2.1.1.2, 2.1.1.4 - Activity 2.2.1/ Sub-Activity 2.2.1.1	Fisheries production records, food security monitoring and grantee reporting following Annex 24 methodology.	Fish landing data, mariculture records, grantee reports.	Cross-checking production data, and beneficiary records.	Population, consumption and overlap assumptions documented and reviewed through periodic assessments.	Verification through field surveys and independent evaluations.
Cross-cutting Data Management and Reporting	NA	Centralized project database and reporting system covering all mitigation and adaptation indicators.	PMU databases, monitoring systems, GIS repositories, survey datasets.	Data completeness checks, version control, audit trails, outlier detection and annual data quality assessments.	All key assumptions and methodological changes documented within a maintained assumptions register.	Internal audits and external evaluation missions.

1.2 Evaluation Plan

Type	Activity/Action	Timing	Independent/Self-evaluation	Indicative Budget (USD)
<i>Process</i>	Interim evaluation and report	Year 3	Independent	\$79,568 - Covered by AE fees
<i>Summative</i>	Final evaluation and report	Year 5/6	Independent	\$86,946- Covered by AE fees

An independent final evaluation will be conducted at the end of the project to assess the overall performance, results, and sustainability of the intervention, and to determine the extent to which the project has achieved its intended objectives and contributed to the Green Climate Fund's mitigation and adaptation results. The evaluation will assess the relevance, effectiveness, efficiency, coherence, impact, and sustainability of the project, covering achievements across all outcomes and outputs, including policy and institutional strengthening, ecosystem conservation and restoration, climate-resilient livelihoods, blue economy financing, and knowledge generation. The evaluation will also assess the effectiveness of GESI integration, environmental and social safeguards, stakeholder engagement, and the project's contribution to long-term institutional capacity and replication of successful approaches.

The final evaluation will be undertaken by an independent multidisciplinary evaluation team with expertise in climate change, blue economy, fisheries and coastal ecosystem management, socio-economic assessment, institutional development, monitoring and evaluation, and gender equality and social inclusion (GESI). The evaluation process will include a comprehensive desk review, field verification, stakeholder consultations, beneficiary assessments, and analysis of project achievements against the approved logical framework and GCF performance indicators. Findings will be presented during a validation workshop before finalization of the report. The evaluation is expected to be completed over approximately six months, from preparation and evaluator recruitment to submission of the final evaluation report and dissemination of lessons learned.

Timetable

Stages	Indicative Timing
Preparation (ToR, evaluator recruitment)	Month 1-2
Inception Report and Desk Review	Month 2-3
Data collection and field mission	Month 4-5
Draft Evaluation Report	Month 6
Validation Workshop	Month 7
Final Report	Month 7
Dissemination and management response	Month 8

1.3 Methodologies and Tools

Indicator	Methodology	Tools reference	Notes/Assumptions
Paradigm shift: - Scale - Replicability - Sustainability	Participatory	GCF's paradigm shift scorecard	- Consult with relevant stakeholders. - The following data are routinely monitored and accessible: - the drafts of regulatory frameworks developed (indicator 1.1.a.) - data sets on fisheries and relevant coastal and marine ecosystems produced, updated, consolidated, and better used by government and non-government entities (indicator 1.1.b.). - knowledge management and learning center established for enhanced ecosystem management and sustainable fishing practice (indicator 1.1.c.) - targeted people with improved knowledge and skills in ecosystem protection, fisheries sustainability, and innovative financing (indicator 1.1.d). - BLU LPMUKP's IT loan management system fully operational and in active use by trained extension officers (indicator 2.3.a.)
Core 1: GHG emissions reduced, avoided, or removed/sequestered	Desk reviews, survey.	- Mangrove mapping using remote sensing, preferably adhering to SNI 7717 2020. - Seagrass mapping using remote sensing and field visits for confirmation adhere to SNI 7716:2012. - Carbon assessment should be consistent with the methodology in Annex 22.	The following data are routinely monitored and accessible: - regulation on the MPA and OECM developed. - hectares of carbon-rich ecosystems conserved and rehabilitated (indicator 2.2.a.). - collaborative MPA management - kilowatt-hour renewable energy deployed/installed (indicator 2.2.b.)
All adaptation result areas (ARA1, ARA2, ARA 4) Core 2: Direct and indirect beneficiaries reached	Regular monitoring or activity report	Project's DBMS	Data on all Component 2 beneficiaries disaggregated by results area/interventions, direct and indirect, sex, and location are routinely monitored and updated (monthly).
ARA1: Most vulnerable people and communities Core 2: Direct and indirect beneficiaries reached.	Annual self-assessment	- Project's DBMS	Beneficiaries' data from the following interventions are routinely monitored and updated (monthly): - Ecotourism enterprise for community development - Collaborative MPAs management - Sustainable and diversified fishing livelihoods (Community-Based Economic Activities) - Sustainable waste management.

Indicator	Methodology	Tools reference	Notes/Assumptions
Supplementary 2.1: Beneficiaries (women/men) adopting improved and/or new climate-resilient livelihood options			- Carbon-rich ecosystems conservation and rehabilitation - Small-Scale Renewable Energy Deployment - Technical assistance to BLU LPMUKP to improve IT-based loan management system
ARA2: Health, well-being, food and water security Core 2: Direct and indirect beneficiaries reached. Supplementary 2.2: Beneficiaries (women/men) with improved food security	Food Security Index in the targeted area Baseline and Endline	Food Security Index by <i>Bapanas</i> (National Food Agency); National Nutrition Data (Survei Status Gizi Nasional) by BPS. Baseline and Endline	Beneficiaries' data from the following interventions are routinely monitored and updated (monthly): - Ecotourism enterprise for community development - Collaborative MPAs management - Sustainable and diversified fishing livelihoods (Community-Based Economic Activities) - Sustainable waste management. - Carbon-rich ecosystems conservation and rehabilitation - Small-Scale Renewable Energy Deployment
ARA4: Ecosystems and ecosystems services Core 2: Direct and indirect beneficiaries reached Core 4: Hectares of natural resources brought under improved low-emissions and/or climate-resilient management practice Supplementary 4.1. Hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal marine areas brought under restoration and/or improved ecosystems.	- Desk reviews. - Observation - Government data and regulation on the MPA and OECM developed. - Survey.	- Data on the improved MPA will be obtained by using EVIKA (<i>Evaluasi Efektivitas Pengelolaan Kawasan Konservasi</i> - Evaluation of Conservation Area Management Effectiveness)³. - Data on OECM will be obtained from formal recognition of OECM establishment. - Mangrove mapping using remote sensing, preferably adhering to SNI 7717 2020. - Seagrass mapping using remote sensing and field visits for confirmation adhere to SNI 7716:2012. -	The following data are routinely monitored and accessible: - regulation on the MPA and OECM developed. - hectares of carbon-rich ecosystems conserved and rehabilitated (indicator 2.2.a.). - collaborative MPA management.
ARA4: Ecosystems and ecosystems services Core 2: Direct and indirect beneficiaries reached. Core 4: Hectares of natural resources brought under improved	- Analysis of the GOI's data on the Total Allowable Catch (TAC) and Exploitation rate - Fisheries surveys on surveys on fishing	- MMAF data on TAC and Exploitation rate. - MMAF decree on the <i>Estimasi Potensi, Jumlah Tangkapan yang Diperbolehkan, dan Tingkat Pemanfaatan Sumber Daya Ikan di Wilayah Pengelolaan Perikanan Negara Republik Indonesia</i> (Potential	The following data are routinely monitored and accessible: - regulation on sustainable fishing management practice - sustainable fishing equipment and catches. - targeted beneficiaries of sustainable and diversified fishing livelihoods.

3 Source: <https://www.coraltrianglecenter.org/wp-content/uploads/2021/12/Pedoman-Teknis-Evika-2020.pdf>

Indicator	Methodology	Tools reference	Notes/Assumptions
low-emissions and/or climate-resilient management practice. Supplementary 4.3. Tonnes of fish stock brought under sustainable management practice	equipment that complies with government regulations used, the size of fish caught.	Estimation, Amount of Allowed Catch, and Level of Utilization of Fish Resources in the Fisheries Management Area of the Republic of Indonesia). - Fishery survey.	
Enabling Environment: Core Indicator 5: Degree to which GCF investments contribute to strengthening institutional and regulatory frameworks for low emission climate-resilient development Core Indicator 7: Degree to which GCF Investments contribute to market development/transformation at the sectoral, local, or national level Core indicator 8: Degree to which GCF investments contribute to effective knowledge generation and learning processes, and use of good practices, methodologies and standards	Participatory evaluation.	GCF's enabling environment scorecard	- Consult with relevant stakeholders. - All data under Component 1 and Component 2 are routinely monitored and accessible.
Outcome 1. Improved legal, regulatory and financial conditions that facilitate climate responsive protection and production in coastal and marine areas Indicator 1.a. Number of improved policy and regulatory frameworks on ecosystem protection, fisheries sustainability, and innovative financing as a result of BEAM interventions.	Stakeholder consultations, desk reviews.	Stakeholder consultations, analysis of government legal instruments, reports, and institutional and regulatory framework that are consistent with Output 1.1.	All data under Component 1 are routinely monitored and accessible.
Outcome 2: Strengthened climate resilience of coastal communities in	Desk reviews, observation, survey.	- Mangrove mapping using remote sensing, preferably adhering to SNI 7717 2020.	The following data are routinely monitored and accessible: - regulation on the MPA and OECEM developed.

Indicator	Methodology	Tools reference	Notes/Assumptions
WPP572 through improved livelihoods and food security Indicator 2.a. Percent of reduced loss in the extent of blue carbon ecosystems in WPP 572		- Seagrass mapping using remote sensing and field visits for confirmation adhere to SNI 7716:2012.	- hectares of carbon-rich ecosystems conserved and rehabilitated (indicator 2.2.a.). - collaborative MPA management.
Outcome 3: Improved condition and extent of coastal ecosystems in WPP572 resulting in reduced GHG emissions Indicator 3.a. Percent of targeted coastal households, businesses, and institutions with improved assets (such as financial/ economy capital, human capital, social capital, natural capital, or physical capital).	Survey to targeted coastal households, businesses, and institutions.	- Sustainable livelihood framework (IDS ^{4,5} , DFID ⁶ , UNDP ⁷) - International Fund for Agriculture Development's (IFAD's) Multidimensional Poverty Analysis Tool (MPAT) ⁸ . - CARE's Climate Vulnerability and Capacity Assessment (CVCA) ⁹ . - Household Livelihood Resilience Approach (HLRA) ¹⁰	Data on Component 2 beneficiaries are routinely monitored and accessible.

4 Scoones, I. (1998). Sustainable Rural Livelihoods: A Framework for Analysis. In *IDS Working Paper* (No. 72; Vol. 72). <https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/3390/Wp72.pdf?sequence=1>

5 Chambers, Robert., Conway, G. R. (1991). Sustainable rural livelihoods: practical concepts for the 21st century. *IDS Discussion Paper*, 296. <https://www.ids.ac.uk/download.php?file=files/Dp296.pdf>

6 DFID. (1999). *Sustainable livelihoods guidance sheet*. Department for International Development. <https://www.livelihoodscentre.org/documents/114097690/114438878/Sustainable+livelihoods+guidance+sheets.pdf>

7 UNDP. (2017). *Application of the Sustainable Livelihoods Framework in Development Programme*. United Nations Development Programme. https://www.undp.org/sites/g/files/zskgke326/files/migration/latinamerica/UNDP_RBLAC_Livelihoods-Guidance-Note_EN-210July2017.pdf

8 IFAD. (2014). *The Multidimensional Poverty Assessment Tool: User's Guide*. International Fund for Agricultural Development.

<https://www.ifad.org/documents/38714170/40302999/The+Multidimensional+Poverty+Assessment+Tool+User%27s+guide.pdf/2fa7cc27-343b-4c22-93f2-eeef5b17f1c8>

9 Dazé, A., Ceinos, A., & Deering, K. (2019). *Climate Vulnerability and Capacity Analysis Handbook*. CARE International. <https://careclimatechange.org/wp-content/uploads/2016/06/CARE-CVCA-Handbook-EN-v0.8-web.pdf>

10 Quandt, A. (2018). Measuring livelihood resilience: The Household Livelihood Resilience Approach (HLRA). *World Development*, 107, 253–263. <https://doi.org/10.1016/j.worlddev.2018.02.024>

Indicator	Methodology	Tools reference	Notes/Assumptions
Outcome 4: Improved economic performance and climate resilience of blue economy in WPP572 Indicator: a. Number of loans from WPP 572 provinces awarded by BLU LPMUKP above the pre-project period baseline b. Number of direct beneficiaries with improved climate-resilient livelihoods through increased access to blue economy finance and investment readiness support	Administrative portfolio-data analysis of BLU LPMUKP, Desk review of BLU LPMUKP performance and operational reports, Desk review of beneficiaries' reports, Survey, participatory assessment	• BLU LPMUKP loan application/management information system records; BLU LPMUKP annual performance report. • IT loan management system deployed under Sub-Activity 2.3.1.1 (origination, disbursement, portfolio monitoring and repayment tracking modules). • Project DBMS beneficiary register • GCF enabling environment scorecard (Core Indicator 7); GCF IRMF Results Handbook. • Training attendance registers and post-training competency assessment instruments. • Household and enterprise income and livelihood survey instruments, sex-disaggregated, consistent with the Sustainable Livelihood Framework tools used for Outcome 2 and the ILO employment and income survey approach used for Co-Benefit 2. • Published research papers, dissemination event reports and list of recipient organisations (Sub-Activity 2.3.1.2) Service provider and consultant progress reports; IT system deployment and usage-log reports.	• A data-sharing agreement with MMAF / BLU LPMUKP is required for access to loan-level disaggregated data. The pre-project disbursement level in the six WPP 572 provinces must be documented and fixed during Year 1.
Environmental Co-benefit: Improved biodiversity and habitat quality in WPP 572. Indicator: a. Number of biodiversity in WPP 572.	Biodiversity and ecosystem assessments.	- Indonesian MPA management effectiveness tool (EVIKA) by MMAF - Mangrove mapping using remote sensing, preferably adhering to SNI 7717:2020. - Seagrass mapping using remote sensing and field visits for confirmation adhere to SNI 7716:2012.	The following data are routinely monitored and accessible: - regulation on the MPA and OECM developed. - hectares of carbon-rich ecosystems conserved and rehabilitated (indicator 2.2.a.). - Collaborative MPA management.

Indicator	Methodology	Tools reference	Notes/Assumptions
b. Percent of habitat with good quality in WPP 572			
Social Co-benefit: Increased income generating opportunities for women in fisheries. Indicator: a. Percent of targeted women (particularly women-headed households and other vulnerable groups) in blue economy sectors and fisheries with increased income	Women beneficiaries employment and income survey	ILO's surveys of economically active population, employment, unemployment and underemployment.	Data on targeted women beneficiaries are routinely monitored and accessible.

Capacity on M&E

Conservation International (CI), as the AE, has established procedures for project monitoring, evaluation, quality assurance, safeguards, and adaptive management. KI as EE has a dedicated Monitoring and Evaluation (M&E) team and utilizes digital dashboards to monitor implementation progress, track key performance indicators, and support adaptive management. KI currently serves as the administrator of the TFCCA program and is developing an integrated digital platform for M&E and grant management, which will be further strengthened with the BEAM Project. Prospective grantees have not yet been selected, and their M&E capacities will be assessed during the grantee selection process.

1.4 Brief description of the monitoring and evaluation system of Blue Halo S – BEAM

Monitoring

a. Database Monitoring System (DBMS)

The project management unit will engage a database specialist (during the startup period of the project) to develop a project DBMS and ensure regular updates, maintenance (data backup, security, etc.), and sharing. The DBMS will cover data of and be disaggregated by the following, or as agreed upon by the stakeholders: (i) indicators as per the log frame; (ii) beneficiaries by result area/intervention, sex, location; (iii) grantee organization information; (iv) blue economy enterprise partners by name, sex of the owner, location, scale of business, monthly income, and assets; (v) adaptations by activity, location; (vi) mitigation by activity, unit, location (vii) other relevant information including participation by indigenous peoples / other marginalized groups. All personally identifiable information (PII) will be removed / encoded in accordance with data privacy practices.

b. Output monitoring

The project management unit (PMU) will appoint a Project M&E teams (from KI) to ensure an integrated monitoring and evaluation system from activity to outcome level. The M&E teams will develop guidelines and formats for monthly and field monitoring that aligns with the log frame and allows for reporting at the Output and Outcome levels. For example, data on hectares of carbon-rich ecosystems conserved and rehabilitated for Output 2.2 will also be used for measuring the Outcome indicator Core 1: GHG emissions reduced, avoided, or removed/sequestered (see Notes/Assumption in 11.3. Evaluation Methodologies and Tools and Annex 22).

The monitoring guidelines and formats to be developed will align with the M&E frameworks of KI . Together with the database specialist, the M&E teams will ensure that data from routine monitoring is entered into the DBMS properly (including reporting directly from grantees under the Component 2 grant facility). They may assign the grantees or other team members as agreed upon to enter the data. The data will be used to develop annual and completion reports, as well as inform interim and final evaluations.

c. Roles of CI, KI, and grantees in the monitoring

Grantees and the EE (KI) will monitor the progress, implementation challenges, and financial status and submit to KI for consolidation on a pre-determined schedule and in accordance with the guidelines and formats developed by the M&E Teams. KI will conduct field monitoring to qualitatively and quantitatively assess the Project's actual progress. Grantees will monitor progress of their interventions and report this information as appropriate to KI, who will compile reporting to ensure that all logical framework targets are met. Information on grantee performance will also flow to the PMU and Grants Committee so that appropriate selection of grantees can take place to ensure that logical framework targets for the overall Project are met.

Evaluation

a. Evaluation coverage

The evaluations will cover the criteria of relevance, coherence, effectiveness, efficiency, impact and sustainability. They will also cover inclusion analysis, i.e., whether the project involves the most vulnerable groups including full participation by women, marginalized groups, and indigenous communities.

b. Project self-assessment vs external evaluation

A project self-assessment to estimate and analyse the progress of some outcome indicators will be done annually using the data that are routinely monitored. External evaluations will be conducted at Project midpoint and endline to ensure the objectivity of results. The external evaluation will employ robust methodologies and tools (see 11.3. Evaluation Methodologies and Tools for reference) as agreed upon with the evaluation reference group (ERG) to measure the actual project's outcomes. The ERG which consists of NDA, CI, KI, grantees, representatives of the line ministries, and CSOs; and will be consulted at every stage of the evaluation process.

c. Baseline, interim and final evaluation

Baseline and target values according to the indicator methodology are agreed with the GCF Secretariat during funding proposal development. If baseline data are unavailable (e.g. food security¹¹ and fishery surveys on sustainable management practices), the project will collect baseline data during year 1 of implementation¹². Mid-term or interim evaluation will be conducted in quarter three of year three. Final evaluation will be conducted in quarter four of year five (the last full year) of the Project.

d. Roles of CI, KI, and grantees in the Evaluation

CI will lead the project evaluations, confirm the results, and submit the evaluation reports to the GCF according to the timeline agreed upon in the Funding Activity Agreement (FAA). Grantees (including the EE: KI) will be responsible for self-assessing the progress they are making on the outcome indicators annually and working closely with the independent evaluators during their assessment of Project results.

Reporting

a. Annual Performance Report, Completion Report

Annual Performance Reports will be submitted in quarter one (Q1) annually in accordance with the Project FAA. The report will cover the cumulative project performance, including financial status and lessons learned from the earlier year. The APR will include paradigm shift and enabling environment indicators, which are qualitatively self-assessed in consultation with stakeholders through Key Informants

¹¹ Green Climate Fund. (2022). *Integrated Results Management Framework: Results Handbook*. 54–56. <https://www.greenclimate.fund/sites/default/files/document/draft-results-handbook-v11-01092023.pdf>

¹² Green Climate Fund. (2020). *GCF Programming Manual: An Introduction to the Green Climate Fund project cycle and project development tools for full size projects*. 127. <https://www.greenclimate.fund/document/programming-manual>

interviews and Focus Group Discussions using a three-point scale. Completion report will be developed in quarter three of year six. All reports will use formats as agreed with CI and the GCF.

b. Roles of CI, KI, and grantees in reporting

Grantees under Component 2 will provide information to the EE (KI) regularly (frequency may vary per grant), including on sex disaggregated number of beneficiaries, level of income of beneficiaries (if applicable), output/deliverables achieved, challenges, plans for the following quarter, along with ESS / grievance / gender and social inclusion reporting. This will ensure comprehensive tracking of progress against logical framework targets. GHG emissions reductions will be tracked / monitored by both grantee reports (restoration and protection activities) and by a consultant engaged by KI to undertake GHG calculations. All reporting requirements will be captured in sub-grant agreements.

KI as EE will prepare reports of their respective Outputs and Activities. KI will submit reports to CI as AE (quarterly and annually). KI will compile Annual Project Reports (APRs) from project information (including KI's grantees' performance) and provide them to CI. In the APR, CI will confirm that baselines, targets and previously reported data are still correct. CI will report to the NDA annually on project progress and key indicators. CI will lead the development of the completion report one year before the project closes. KI, and grantees will assist with the report's development as necessary. The report will involve consultations with relevant stakeholders as described in Annex 07.