

PREFACE

Updated MRV Protocol under the Indonesia–Norway Partnership on Climate Change, Forests and Peatlands.

The Government of the Republic of Indonesia and the Government of the Kingdom of Norway reaffirm their shared commitment to addressing climate change and reversing the loss of biodiversity through strengthened cooperation in the forestry and land use sector, including the sustainable management of forests and peatlands. This commitment is grounded in mutual respect, transparency, and a common ambition to contribute meaningfully to the objectives of the Paris Agreement and the United Nations Framework Convention on Climate Change (UNFCCC) and the Kunming-Montreal Global Biodiversity Framework.

This Updated MRV Protocol has been developed through an inclusive and collaborative process. Following the Joint Consultation Group and Joint Technical Working Group (JCG–JTWG) discussions in April 2025, Indonesia and Norway conducted a series of technical consultations and iterative reviews to ensure that the updated protocol is scientifically robust, institutionally sound, and aligned with national and international frameworks. This process demonstrates the strong partnership, mutual trust, and shared responsibility that underpin the Indonesia–Norway cooperation.

The Updated MRV Protocol is designed to ensure consistency with UNFCCC decisions, the latest guidance of the Intergovernmental Panel on Climate Change (IPCC), and relevant international good practices. At the same time, it remains firmly anchored in Indonesia’s national circumstances and institutional mandates. The protocol strengthens the principles of transparency, accuracy, consistency, completeness, and comparability, and promotes continuous improvement of methodologies and systems over time.

This protocol serves as the agreed framework for measuring, reporting, and verification of emission reduction results under the Indonesia–Norway partnership for the relevant period. It provides the technical and methodological basis for the assessment and recognition of emission reduction results during 2020–2025 and constitutes a key reference for future contributions from Norway.

The Updated MRV Protocol is intended not only as a technical reference, but also as a living framework that can evolve in response to future scientific, methodological, and policy developments.

The Governments of Indonesia and Norway express their appreciation to the technical teams and experts from both countries whose dedication and collaboration have made this update possible. They reaffirm their shared resolve to continue strengthening transparency, environmental integrity, and ambition in climate action, and to advance a long-term partnership that delivers measurable and impactful contributions to global climate goals.

Updated MRV protocol for the Indonesia-Norway partnership on climate, forests and peat

1. General principles for measuring, reporting and verification

- Measuring, reporting and verification (MRV) of REDD+ shall be guided by the principles of transparency, accuracy, completeness, comparability, and consistency, in line with UNFCCC decisions.
- A learning-by-doing approach and improvements in MRV over time are encouraged.
- MRV will be in accordance with relevant UNFCCC decisions on REDD+ and IPCC Good Practice Guidance and Guidelines, and where appropriate, take into account methodologies and guidance from GFOI, GOF-C-GOLD, and other internationally recognized sources.
- Emissions reductions from gross deforestation are prioritized over other performance indicators.
- Conservative accounting approach shall be applied.
- In line with UNFCCC decisions on safeguards, the conservation of natural forests will be promoted and supported. Indonesia will continue to distinguish natural forests from other forest types in all relevant aspects of REDD+ MRV.

2. Forest reference emissions level and results based payment baseline

Reductions in emissions from performance indicators will be compared to a results based payment baseline to report results under the Indonesia-Norway bilateral agreement. A results based payment baseline of the partnership may be an adapted version of Indonesia's Forest Reference Emission Level submission to the UNFCCC. The results based payment baseline will be updated periodically, indicatively every 5 years, but also taking into account any updated FREL Indonesia might submit to the UNFCCC. The following points will be addressed in the results based payment baseline. For further detail on how results based payments will be calculated, please refer to the Annex.

2.1. Main principles - methodologies

- There is methodological consistency in the estimation of emissions and removals, between the forest reference emissions level submitted to the UNFCCC and the results based payment baseline applied in the Indonesia-Norway bilateral agreement.
- The results based payment baseline is expressed in tonnes of CO₂ equivalents per annum. Estimates of emissions will be based on IPCC 2006 guidelines for GHG inventories, or more recent guidelines as they are developed.
- All significant pools and sources of greenhouse gas emission associated with relevant performance indicators are included in the results based payment baseline. If a major carbon pool/ or gas is excluded, this will be explained and justified, provided it is not a significant pool. Excluded pools and gases must collectively represent less than 10% of overall emissions that are included in the performance indicators of the Indonesia-Norway bilateral agreement. If a

significant pool or gas cannot be included due to lack of data, steps will be taken to include it over time. Once a pool or gas is included in the results based payment baseline, it shall not be excluded at a later stage or period.

- The data sets, methods, models and assumptions ensure transparency, completeness, consistency, accuracy and comprehensiveness.

2.2. Results based payment baseline

- The results based payment baseline is based on the annual historical average level of each of the following performance indicators: emissions from deforestation and forest degradation.
- The results based payment baseline is developed using reference period from 2015/2016 to 2019/2020, and valid up to 2025. The results based payment baseline shall distinguish between the performance indicators.
- The emission reduction results is the difference between the results based payment baseline and the emissions in each year.
- From the reported emission reduction results, set-asides will be made to determine the maximum number of emission reductions Indonesia can be rewarded for by Norway and other financiers. These will reflect risks related to uncertainty, leakage, reversal, as well as a reflection of Indonesia's ambition to reduce national GHG emissions. The deducted volumes from set-asides cannot be rewarded or bought by other financiers.
- To avoid double counting, all issued credits from the same activities and results years will be deducted.
- See the annex for further details.

2.3. Scale

- The results based payment baseline is national in scale.

2.4. Forest definition

- The forest definition used in the construction of the results based payment baseline will be specified and will be consistent with Indonesia's FREL to UNFCCC.
- The forest definition should be consistent with international decisions and guidelines, as outlined in the General principles.

2.5. Period for historical average results based payment baseline and use of historical data

- The results based payment baseline will cover the period from 2015/2016 to 2019/2020.

2.6. Updating of the results based payment baseline

- The results based payment baseline in this *Updated MRV Protocol* is valid for the results years 2020/2021, 2021/2022, 2022/2023, 2024 and 2025.
- For the next results years 2026-2030, the use of an internationally recognized and high-integrity standard, such as TREES, will be considered as the basis for calculating emission reduction results.
- If it is agreed not to use such a standard, an update of this *Updated MRV Protocol* will serve as the basis.
- When updating this *Updated MRV Protocol*, the results based payment baseline will be moved forward by five years, with a preference for aligning the period with calendar year.
- Updates will take into account new knowledge, possible extension of scopes (e.g. inclusion of additional pools, gases, or indicators), methodological improvements, and any updated FREL and NDC Indonesia might submit to the UNFCCC.
- The updated results based payment baseline (for a new period) will reflect an increase in ambition.
- If moving the reference period forward by 5 years does not represent an increase in ambition, an appropriate qualitative or methodological adjustment will be considered to ensure consistency with overall ambition.

2.7. Inclusion of additional performance indicators

- Indonesia will continue to develop the MRV system, and over time make efforts to include emissions from other performance indicators in the results based payment baseline. Please refer to the Annex of this document for further detail.

2.8. Accounting

- A national system of accounting will be used to provide transparency and certainty that no double counting to emission reductions delivered under projects, other agreements or partnerships occurs. This includes verified results issued after verification of emissions reduction under the partnership has been completed.
- Rewarded emissions reductions should be registered in the Lima Info Hub to ensure transparency and certainty that no double counting to emission reductions delivered under other agreements or partnerships occurs.

3. Reporting on emission reductions relative to the results based payment baseline

3.1. General principles

- Reporting will be in the form of one consolidated report, covering all necessary elements described below and according to the reporting format.
- Final reports are published and publicly accessible online at the NICFI website and Ministry of Forestry website. It is encouraged to facilitate dissemination and public discussion on the reports.
- Annual reporting is the main rule (linked to annual payments).

- Reports shall be consistent with national reports to the UNFCCC (Biennial Transparency Reports and its REDD+ annex, National Communication).
- Measurement and reporting will be based on the most recent guidance from the IPCC on emissions reporting, currently IPCC 2006 guidelines for GHG inventories and incorporating updates from 2019 Refinement to the 2006 IPCC Guidelines and 2013 Wetlands Supplements where applicable, at least Tier 2.

3.2. Objectives of reporting guidance

- To ensure transparent, accurate, consistent, complete, and comparable reporting of emission reductions resulting from reduced deforestation and other performance indicators, as agreed, in Indonesia.
- To provide a basis for independent verification of emission reduction results.
- To ensure that reporting on emissions and emission reductions is comparable from one reporting period to the next.

3.3. Reporting on the National forest monitoring system

- The report shall take into account guidance from UNFCCC Decisions on National Forest Monitoring Systems.
- The report shall provide: a description of national forest monitoring system, including how it builds on existing systems; a description of the respective roles and responsibilities of institutions involved; and a description of quality control and quality assurance activities.

3.4. Scope - data material and reporting elements

- Results for agreed performance indicators (gross deforestation, agreed indicators for other activities, see Annex) are reported as tonnes CO₂-equivalents.
- Reporting shall cover:
 - All carbon pools and sources of greenhouse gas emission as reported in the FREL associated with relevant performance indicators, for the purpose of results-based payments; forest definition applied
 - Activity data; description of data sources and coverage
 - Areas covered; description of boundaries
 - Emissions factors; rationale and data sources for estimation of emission factors
 - Methods and models used for estimation of emissions over time.
 - Information on the Indonesia's FREL submitted to the UNFCCC, the methodologies and data sources used to establish this FREL, and any further information pertaining to the establishment of the results based payment baseline.

3.5. Description of methodologies will include:

- Methods used to establish the FREL/Results based payment baseline.

- Description of methodologies used to develop forest area estimates and forest type maps, forest change analysis, biomass and carbon stock estimation and the approaches for estimation of emission reductions.
- Description of methodologies (including the reference data) used to analyze the uncertainty of the estimates of the change detection.
- Descriptions of the methodological details of the applied steps for calculating emission reductions, in a manner that allows reproduction of the calculation of emission reductions.

3.6. Reporting on uncertainty and bias

- Measurement and reporting will be built on IPCC's "Good Practice Guidance", including the principle of "neither over- nor under-estimates so far as can be judged, and uncertainties reduced so far as is practicable". Conservative approaches will be applied when completeness and accuracy is lacking.
- Estimation of accuracy, precision and/or confidence level for sources, activity data (including user and producer accuracies for forest area categories and potential area change biases) and emission factors.
- Discussion of key uncertainties, their sources and impacts on reported result.
- Discussion on, and implications of, potential biases in the estimations.
- Description of MRV and National Forest Monitoring System (NFMS), including planned and implemented improvements.

4. Verification of emission reduction results achieved

4.1. Background and rationale

Verification of the reported results from reduced deforestation and forest degradation, and other performance indicators as agreed, is a necessary part of the process of results-based payment. A sound verification process ensures that the reported results are based on consistent use of appropriate methodologies, and thus gives confidence for public financing.

This section forms the basis for developing more specific Terms of Reference (ToR). The final ToR will establish details regarding the timelines of processes, possible consultations, data requests and other issues, and form the basis for a contract with a designated verification team.

4.2. Objectives of guidance on verification

- Ensure an independent, credible and high-quality verification process, aligned with UNFCCC decisions and taking into account international standards and good practices for results-based payments.
- Validate the consistency of the methodology used to estimate emissions reductions in relation to the methodology established in the development of the Reference Level/results based payment baseline.
- Allow reconstruction of reported emission reductions.

- Verify the results on estimated emission reductions from reduced deforestation and the other agreed performance indicators in order to avoid errors, omissions or misrepresentations that could influence the overall results, and thereby decisions for payments.
- Provide recommendations for improvements in the MRV system.
- Analyze and discuss proposed and implemented MRV improvement options. The decision to implement methodological changes or adjustments lies with Indonesia.

4.3. Basis for verification

- The report on estimated emission reductions relative to the results based payment baseline is subject to verification.

4.4. Reference documentation

- Reporting requirements and agreed format for reporting, as agreed in the MRV-protocol Section 3.
- The reference level submitted to the UNFCCC, including the historical average deforestation level and the results based payment baseline of the Indonesia-Norway bilateral agreement.
- The technical assessment of the latest FREL submitted to the UNFCCC.
- REDD decisions and MRV decisions under the UNFCCC.
- Most recent IPCC Guidelines for GHG inventories as adopted by the UNFCCC COP, and 2013 Wetland Supplement.
- Global Observation of Forest and Land Cover Dynamics (GOFC-GOLD) REDD+ Source Book (2015).
- Global Forest Observation Initiative (GFOI) Methods and Guidance Documents and supplementary modules.
- Good Practice Guidance and Uncertainty Management in National GHG Inventories (2000).

The reference documentation may be updated if new guidance from the IPCC or other relevant international sources is developed.

4.5. Access to data and further information

- Methods and data material used will be made available to the verification team to allow reconstruction of FREL/results based payment baseline and emission reduction estimate reports, and publicly available at the same time if technically possible and according to confidentiality restrictions¹.
- The verification team shall be given access² to additional data, if this is requested in order to ensure a sound verification outcome. If data is confidential, the verification team shall maintain confidentiality.

¹ Confidentiality might apply, for instance, to raw data from research institutions and individual researchers.

² Access here does not imply release or disclosure of confidential data and information.

- The verification team may ask questions and discuss findings with relevant institutions in Indonesia that have participated in reporting and/or have responsibilities under Indonesia's national forest monitoring system.

4.6. Process of consultation

- The verification team shall include an in-country visit as part of the verification process.
- Indonesia will be consulted on the planned verification process by the verification team, according to a timeline agreed in the Terms of Reference for verification.
- Indonesia will have the opportunity to provide clarifications and comments to a draft verification report.
- Input from Indonesia on the draft verification report will be included in the final verification report. The report will include a written response to how Indonesia's comments have been considered.

4.7. Output from verification process

- The verification team delivers a verification report according to the ToR, to Indonesia and Norway.
- The report is the responsibility of the verification team.
- The report is publicly available on the NICFI and Ministry of Forestry website.
- The verification report is the central basis for payment for emission reductions under the agreement.

5. Selection and composition of independent verification team

5.1. Background and rationale

The verification team that conducts the verification has a key role. Selection of the verification team will ensure independence, high quality, relevant expertise, credibility and trust. It is important that the verification team has the trust of both Norway and Indonesia.

5.2. Principles for composition of verification team

- Experts in the verification team shall not be a national of Indonesia or Norway nor be nominated by Indonesia or Norway to the UNFCCC roster of experts.
- Experts have not been directly involved in the preparation of the reference emission level or the report on emission reductions from Indonesia.
- The team shall include both developing country and developed country experts.
- Competence – the verification team shall include:
 - Expertise in tropical forests and carbon stocks.
 - Expertise in MRV for REDD+ and LULUCF sector.
 - Expertise on peatlands and fires is preferable.
 - Expertise in auditing/verification procedures.

5.3. Responsibility for selecting verification team

- Terms of reference for the verification process are agreed between Indonesia and Norway.
- Selection of a verification team will be done through an open tender process.
- The verification team can be selected from acknowledged firms with required expertise, or a consortium of independent experts, or a combination (firm + independent experts).

Annex: Detailed steps for calculating results based payments under the Indonesia-Norway forest partnership

Basis

The basis for the results based payment model is Indonesia's most recent FREL submission to the UNFCCC of December 2022. The reporting will follow methodologies consistent with the most updated FREL. However, as described in the *Updated MRV Protocol*, a few additions and modifications to the FREL will be included in the bilateral results based payment model (hereinafter referred to as the "results based payment baseline").

Reference period

The reference period used for calculating the Results based payment baseline will be the years 2015/2016 – 2019/2020.

Activities, pools and gases included in the results based payment baseline

The following performance indicators will be included in the results based payment baseline under the partnership:

- 1) Emissions from deforestation
- 2) Emissions from forest degradation

Data and methodology for the above performance indicators should be aligned with the most recent Indonesia's FREL.

The carbon pools included for estimating emission reductions are above ground biomass and below ground biomass.

Emissions from the soil carbon pool from peat decomposition and peat fires will be measured and reported on using the best available methods and data, and the goal is to phase these into the bilateral results based payment model over time.

Improvements to data and methodology, as well as the inclusion of additional activities, pools and gases are encouraged over time provided that these improve completeness, comprehensiveness, and accuracy. Such improvements should be specified in the MRV improvement plan prepared for results based payment baseline updates in line with point 2.6 of the *Updated MRV Protocol*.

Treatment of statistical uncertainty, reversal risk, and possibly other risk factors, and inclusion of Indonesia's ambition

A conservative, simplified and grouped mechanism for accounting for statistical uncertainty, leakage and permanence risk, and reflecting Indonesia's ambition, will be used.

- Emission reductions relative to the agreed results based payment baseline is reported.
- From the reported emission reduction results, the following set-asides/deductions will be made to determine the maximum number of emission reductions Indonesia can be rewarded for by Norway and other financiers:
 - 20% to reflect the risk of uncertainty in estimates;
 - 0% is deducted to reflect risk of leakage (due to national level accounting);
 - 15% is deducted to reflect Indonesia's ambition to reduce national GHG emissions.
- The deducted volumes cannot be rewarded or bought by other financiers.

As systems are developed over time and policies and strategies are put in place to reduce permanence risk and statistical uncertainty, the set aside factor can be reduced.

Peat Fire emission proxy reporting

Years of extreme emissions from peat fires are treated differently depending on normalcy or extreme events. Two separate peat fire emission baselines are calculated, separated by a threshold of extremity.

The two peat fire baselines are calculated accordingly:

Years of extreme peat fire emissions, where emissions are more than 2 standard deviations above the mean, are excluded. This process is repeated until no extreme years are found. The result is the normal peat fire year baseline. This approach is consistent with guidance from the IPCC.

The average annual emissions in the extreme years identified in this process form the basis for the extreme year baseline. Future yearly peat fire emission results that exceed the 2 standard deviations threshold (i.e. are above extreme peat fire threshold) are treated as extreme events and results are calculated against the extreme peat fire baseline. As an additional requirement, the extreme peat fire baseline shall only be used if the year in question is classified as an El Nino.

Safeguards

In line with relevant UNFCCC decisions on REDD+ Safeguards, parties engaged in results-based payments are encouraged to demonstrate that the Safeguards are being

addressed and respected.

Indonesia will continue to ensure transparency and participation in the Safeguards implementation through the following measures:

- Prepare and make publicly available a draft Summary of Information on Safeguards.
- Facilitate stake-holder engagement concerning the draft Summary of Information on Safeguards.
- Submit the Summary of Information on Safeguards to UNFCCC covering the relevant result period.