Jurisdictional and Nested REDD+ (JNR) Requirements

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1 | Introduction

This document provides the VCS Program requirements for jurisdictional REDD+ programs and nested projects focused on Reduced Emissions from Deforestation and Degradation, Improved Forest Management and Afforestation, Reforestation and Revegetation (collectively referred to as REDD+), including requirements for jurisdictional boundaries, crediting periods, eligible activities, GHG sources and carbon pools, baseline determination, leakage calculations and GHG emission reductions and removals calculations. The document is intended to assist governments, private entities, civil society organizations, local stakeholders and validation/verification bodies in developing and auditing jurisdictional programs and nested projects.

In addition to the requirements set out in this document, jurisdictional programs and nested projects shall adhere to all applicable VCS requirements and rules set out in the VCS Program documents. In particular, readers are referred to the *VCS Program Guide*, the *VCS Standard*, the *AFOLU Requirements* and the *Jurisdictional and Nested REDD+ (JNR) Non-Permanence Risk Tool*. Such rules and requirements apply *mutatis mutandis* (e.g., where the *VCS Standard* uses the term project proponent, it may be appropriate to read this as jurisdictional proponent), unless otherwise noted in this document. Where this document references the *VCS Standard* or the *AFOLU Requirements* and those documents require specific criteria or procedures to be set out in a methodology, such requirements should be read as requirements to be fulfilled in the jurisdictional program description[1]. For example, where the *AFOLU Requirements* states, "The methodology shall establish criteria and procedures for monitoring, and specify the data and parameters to be monitored, as set out in the *VCS Standard*", this shall be read as "The jurisdictional program description shall establish criteria and procedures for monitoring, and specify the data and parameters to be monitored, as set out in the *VCS Standard*". Where external documents are referenced, such as the *IPCC 2006 Guidelines for National GHG Inventories*, and such documents are updated periodically, the most recent version of the document shall be used.

This document was developed by the VCS Jurisdictional and Nested REDD+ Initiative (JNRI), overseen by an advisory committee and technical expert groups, comprising representatives from national and subnational governments, leading experts in REDD+ and representatives from NGOs and the private sector[2].

This document will be updated from time-to-time and readers shall ensure that they are using the most current version of the document.

[1] Throughout this document, *jurisdictional program description* refers to the jurisdictional program description (for jurisdictions registering under Scenario 2 or 3) and/or the jurisdictional baseline description (for jurisdictions registering under Scenario 1).

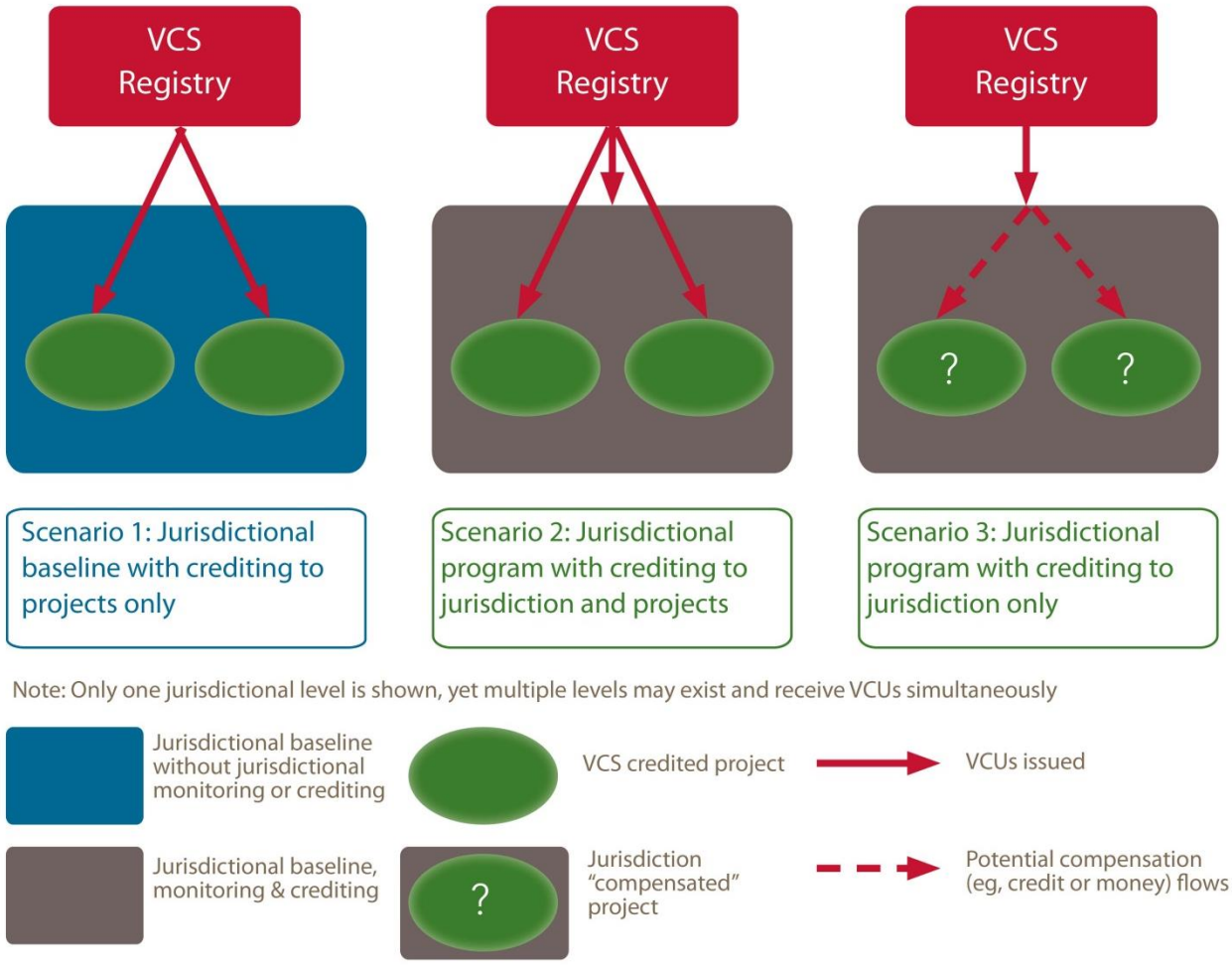
[2] The JNR advisory group members and contributors to this document are available on the VCS website.

2 | Jurisdictional and Nested REDD+ Program Specific Issues

2.1 OVERVIEW OF JURISDICTIONAL AND NESTED REDD+ PROGRAM CYCLE AND CREDITING SCENARIOS

2.1.1 The jurisdictional and nested REDD+ requirements set out in this document may be applied at the national and/or subnational levels and may or may not include nested projects. There are three eligible scenarios for applying the requirements, including two fully jurisdictional approaches (Scenarios 2 and 3), and a third scenario (Scenario 1), that while itself not a complete jurisdictional approach, could be a useful precursor to developing a full jurisdictional approach. Jurisdictional proponents (e.g., national or subnational governments) may determine which scenario is to be applied within the jurisdiction, and may move from one scenario to another over time. For example, a jurisdiction may start with Scenario 1, by defining a jurisdictional baseline to support projects only, and may subsequently develop a jurisdictional REDD+ program at the national and/or subnational levels under Scenarios 2 or 3. Each scenario may be applied at the national or subnational level, and different scenarios may be applied at different levels. For example, the national government may follow Scenario 2, and a subnational jurisdiction may follow a different scenario (e.g., Scenario 3). The full rules and requirements for each scenario are set out in Section 3. Diagram 1 provides an overview of the three scenarios, which are further expanded upon below.

Diagram 1: Simplified Crediting Scenarios:



1) Scenario 1: Jurisdictional baseline with standalone project crediting. Where jurisdictions follow Scenario 1, the following applies:

   a) Jurisdictional proponents (or authorized representatives, see VCS document *Program Definitions* for definition of authorized representative) may develop and register a jurisdictional baseline, as set out in Section 3.11 and VCS document *Jurisdictional and Nested REDD+ (JNR) Registration and Issuance Process*. Where this document (the *Jurisdictional and Nested REDD+ (JNR) Requirements*) refers to the registration of a jurisdictional program element, such registration may be completed by either the jurisdictional proponent or the authorized representative.

   b) Where the jurisdictional baseline has been registered, projects within such jurisdiction shall apply the jurisdictional baseline to the relevant project activities, following the baseline requirements set out in Section 3.11.

   c) Where the jurisdictional baseline has been registered, projects within such jurisdiction shall follow VCS document *AFOLU Requirements* and the applied (project)

methodology, including requirements related to monitoring, leakage, non-permanence risk and the calculation of total GHG emission reductions and removals.

d) No monitoring is required at the jurisdictional level and no GHG credits shall be issued for areas outside of project areas (i.e., no VCUs shall be issued for GHG emission reductions and removals achieved in non-project areas within the jurisdiction).

For example, a jurisdictional baseline is developed for province A. Each individual project within the province uses the registered jurisdictional baseline in accordance with Sections 3.11.14 and 3.11.15. Projects are then developed, validated, registered, monitored and verified in accordance with VCS document *AFOLU Requirements* and the relevant methodology (not including the baseline requirements), and may request issuance of VCUs. The jurisdictional proponent does not conduct monitoring and does not seek issuance of VCUs. Note that projects may also be registered prior to the registration of a jurisdictional baseline and in such case shall be subject to the grandparenting requirements set out in Section 3.11.14.

Scenario 1 allows for standalone projects to benefit from the establishment of a consistent, broader scale jurisdictional baseline. The jurisdictional baseline helps reduce the transaction costs and promotes environmental integrity across the aggregate of REDD+ projects being developed within the jurisdiction. Furthermore, the establishment and registration of jurisdictional baselines facilitates migration to Scenario 2 or 3, should a jurisdictional proponent choose to do so.

Note - Projects not yet nested in a full jurisdictional program are referred to as *standalone projects*. All projects in a jurisdiction following Scenario 1 are considered standalone projects, as are projects developed under other (i.e., non-VCS) GHG programs in jurisdictions following Scenarios 2 or 3. Registered VCS projects in jurisdictions following Scenarios 2 and 3 may be either grandparented (i.e., during the grandparenting period) or nested (i.e., fully integrated in the jurisdictional program).

Scenario 1 also applies where a national jurisdictional baseline is developed and registered, and a subnational jurisdictional program is developed, using the national jurisdictional baseline, but with crediting only to the subnational jurisdiction. In such case, there is no accounting or crediting at the national level, and a subnational jurisdictional proponent may develop and register a subnational jurisdictional program (that may follow Scenario 2 or 3).

Scenario 1 is not a full jurisdictional approach, in that it does not require monitoring across the entire jurisdiction and therefore does not strive to achieve the same overall objective of maintaining environmental integrity at the jurisdictional level as Scenario 2 or 3. Scenario 1 is included in the Jurisdictional and Nested REDD+ requirements because the requirements for setting the jurisdictional baseline are contained in this document and because Scenario 1 may be the first phase of jurisdictional program development.

2) Scenario 2: Jurisdictional program with crediting to the jurisdiction and direct crediting of nested projects. Where jurisdictions follow Scenario 2, the following applies:

a) Jurisdictional proponents shall develop and register a jurisdictional baseline and

jurisdictional program, in accordance with Section 3.11 and VCS document *JNR Registration and Issuance Process*, respectively.

b) Jurisdictional proponents may register a jurisdictional baseline simultaneously with a full jurisdictional program (including program elements as described in Section 3.2.2) or register the jurisdictional baseline and jurisdictional program sequentially. Where the baseline is registered in advance of the jurisdictional program, project development in the jurisdiction shall operate according to Scenario 1, until the jurisdictional program is registered.

c) Where a jurisdictional baseline has been registered, projects or lower-level jurisdictional proponents within the jurisdiction shall apply the higher-level jurisdictional baseline to the relevant project activities or to the lower-level jurisdictional program, following the baseline requirements (including those related to grandparenting) set out in Sections 3.11.14 and 3.11.15, and may register such projects or lower-level jurisdictional programs.

d) GHG emission reductions and removals shall be accounted for across the entire jurisdiction (i.e., across all included carbon pools, activities and areas) and GHG credits may be claimed by the jurisdictional and/or project proponents for emission reductions and removals achieved at their respective level.

e) Monitoring shall be conducted across the entire jurisdiction (i.e., across all included carbon pools, activities and areas) and may also be conducted at lower jurisdictional and project levels, as set out in Section 3.14.

f) GHG credits for emission reductions and removals achieved by each level, after accounting for leakage (where required, as set out in Section 3.12) and any non-permanence risk buffer withholding, may be issued directly to the entity with rights over such reductions and removals.

g) A jurisdiction following Scenario 2 may allow crediting to projects only (i.e., where the jurisdictional proponent chooses not to claim credit for GHG emission reductions and/or removals achieved in non-project areas), or may allow crediting to both non-project areas within the jurisdiction as well as to projects.

   Such jurisdictions may establish internal allocation or benefit-sharing mechanisms to share benefits or further distribute GHG credits to stakeholders in the jurisdiction.

   For example, in the first crediting option under Scenario 2, a jurisdictional baseline is developed for Province B. Province B wants to stimulate investment into projects by the private sector but does *not* want to request issuance of VCUs for GHG emission reductions and/or removals achieved in non-project areas within the jurisdiction. Province B does, however, intend to conduct monitoring across the jurisdiction and seeks to ensure that project leakage and any reversals (see VCS document *Program Definitions* for definition of reversal) within the jurisdiction are accounted for and that environmental integrity is maintained at the jurisdictional level, and may be rewarded for jurisdictional performance under another program or agreement. This therefore

differentiates it from Scenario 1 where there is no jurisdiction-wide monitoring. The jurisdictional proponent develops a jurisdictional program that allows direct crediting for projects but does not request issuance of any VCUs for non-project areas. Individual projects apply the registered jurisdictional baseline and register their projects (applying additional rules established by the jurisdiction, as set out in Section 3.2). Both projects and the jurisdictional proponent conduct monitoring and leakage assessments, and apply the relevant non-permanence risk tool to determine their buffer withholding requirements. Both the jurisdictional program and projects undergo verification and contribute GHG credits to the jurisdictional buffer pool but only the projects request issuance of VCUs.

In the second crediting option under Scenario 2, for example, Province C develops a jurisdictional baseline. Province C intends to request issuance of VCUs for GHG emission reductions and removals achieved across the entire jurisdiction by the REDD+ policies and programs it implements, and seeks to stimulate private-sector investment in projects. Province C develops a jurisdictional program that allows crediting to both the jurisdiction and projects simultaneously. Projects apply the registered jurisdictional baseline and are registered following the requirements in Section 3 and the additional rules established by the jurisdiction. Both projects and the jurisdiction conduct monitoring and leakage assessments, and apply the relevant non-permanence risk tool, contribute GHG credits to the jurisdictional buffer pool and request issuance of VCUs.

3) Scenario 3: Jurisdictional program with crediting only to jurisdiction and no direct crediting of nested projects. Where jurisdictions follow Scenario 3, the following applies:

   a) Jurisdictional proponents shall develop and register a jurisdictional baseline and jurisdictional program, which may include a benefit-sharing mechanism (to distribute GHG credits or other benefits to stakeholders or projects within the jurisdiction), in accordance with Sections 3.2, 3.11 and VCS document *JNR Registration and Issuance Process*, respectively.

   b) GHG emission reductions and removals shall be accounted for across the entire jurisdiction (i.e., across all included carbon pools, activities and areas) and GHG credits may be claimed only by the jurisdictional proponent for emission reductions and removals achieved across the jurisdiction (i.e., all credits run through the jurisdiction and no projects or lower-level jurisdictional proponents may request issuance of GHG credits directly from the VCS). Jurisdictional proponents may allocate GHG credits or benefits across the jurisdiction, as set out in their internal allocation or benefit-sharing mechanism, and in accordance with the safeguards set out in Section 3.7.

   c) Monitoring shall be conducted across the entire jurisdiction (i.e., across all included carbon pools, activities and areas).

   d) GHG credits for emission reductions and removals achieved by all levels within the jurisdiction, after accounting for leakage and any non-permanence risk, shall be issued directly to the jurisdictional proponent.

For example, a jurisdictional baseline is developed for Province D. Province D intends to claim GHG credits across the entire jurisdiction for policies and programs it implements. The jurisdictional proponent implements a payment for ecosystem services system that involves paying for the protection of forest under threat along with the conservation of less threatened forests that may not have been eligible or viable as REDD+ project activities. The jurisdictional proponent develops a jurisdictional program and internal allocation or benefit-sharing mechanism that documents such plans and demonstrates Province D has program ownership. The jurisdictional proponent conducts leakage assessments and monitoring, and undergoes verification and requests issuance of VCUs. The jurisdictional proponent then either allocates such VCUs to participants in the domestic REDD+ program or sells the VCUs and uses proceeds to fund the payment for the ecosystem services system. The jurisdictional proponent establishes the internal allocation or benefit-sharing mechanism, following the requirements for stakeholder involvement as set out in Section 3.7.

2.2 REDD+ NON-PERMANENCE RISK AND JURISDICTIONAL POOLED BUFFER ACCOUNT

2.2.1 Non-permanence risk in jurisdictional REDD+ programs and nested projects is assessed through the use of a risk analysis, using the VCS documents *AFOLU Non-Permanence Risk Tool*, for projects, and the *JNR Non-Permanence Risk Tool*, for jurisdictions. Each tool determines the number of credits to be deposited in the jurisdictional pooled buffer account. The jurisdictional pooled buffer account holds non-tradable buffer credits to cover the non-permanence risk associated with jurisdictional programs and nested REDD+ projects. It is a single account that holds the buffer credits for all jurisdictional programs and nested projects, with the exception of buffer credits from projects in jurisdictions following Scenario 1. Such stand-alone projects shall apply the non-permanence requirements set out in VCS document *AFOLU Requirements*, and shall contribute credits to the AFOLU pooled buffer account. The full rules and procedures for jurisdictional programs and nested REDD+ projects with respect to non-permanence risk are set out in Section 3.15.

2.2.2 The jurisdictional pooled buffer account is subject to periodic reconciliation, as set out in VCS document *AFOLU Requirements*.

2.2.3 Program and project non-permanence risk analyses and tools will be subject to periodic review by the VCSA, as set out in VCS document *AFOLU Requirements*.

3 | Jurisdictional REDD+ Program and Nested Project Requirements

3.1 GENERAL REQUIREMENTS

3.1.1 As set out in the *VCS Standard*, default factors and standards used to ascertain GHG emission data and any supporting data for establishing the baseline and demonstrating additionality shall be publicly available from a recognized, credible source, such as *IPCC 2006 Guidelines for National GHG Inventories* or the *IPCC Good Practice Guidance for Land Use, Land-Use Change and Forestry*. See the *VCS Standard* for the full rules and requirements for the use of default factors and standards.

3.1.2 Implementation of the jurisdictional REDD+ program and any nested project shall not lead to the violation of any applicable law, regardless of whether or not the law is enforced.

3.1.3 Where implementation partner(s) are acting in partnership with the project or jurisdictional proponent, the implementation partner(s) shall be identified in the jurisdictional program description or project description, as appropriate. The implementation partner(s) shall identify its/their roles and responsibilities with respect to the program or project, including but not limited to, implementation, management and monitoring of the program or project over the program or project crediting period.

3.1.4 Where projects are within jurisdictions that are following Scenario 1, they shall follow the requirements set out in VCS document *AFOLU Requirements* (including a methodology eligible under the VCS Program), except where, as set out in this document, jurisdictional and nested REDD+ requirements take precedent, such as those related to baselines, leakage and government approvals set out in Sections 3.11, 3.12.12 through 3.12.14 and 4.1, respectively.

3.2 JURISDICTIONAL PROGRAM AND BASELINE DESCRIPTIONS

3.2.1 The jurisdictional REDD+ program and its context shall be described in the jurisdictional program description using the *VCS JNR Program Description Template*. Jurisdictions following Scenario 1 shall complete the *VCS JNR Baseline Description Template*. The jurisdictional proponent shall adhere to all instructional text within these templates.

3.2.2 All information in the jurisdictional program description, jurisdictional baseline description and any accompanying documents shall be presumed to be available for public review, though

program sensitive information may be protected, as set out in VCS document *JNR Registration and Issuance Process*, where it can be demonstrated that such information is program sensitive. The validation/verification body shall check that any information designated by the jurisdictional proponent as program sensitive meets the VCS Program definition of program sensitive information. Information in the jurisdictional program description, jurisdictional baseline description and any accompanying documents related to the determination of the baseline scenario and monitoring of GHG emission reductions and removals shall not be considered to be program sensitive and shall be provided in the public versions of the documents.

3.3 PROGRAM AND PROJECT START DATE

3.3.1 The program start date shall not be prior to 1 January 2006.[3] The program start date is specified by the jurisdictional proponent, and is the date on or after which activities that lead to the generation of GHG emission reductions and/or removals are implemented. The program start date shall be justified based on the establishment of relevant GHG laws, policies or regulations that target GHG mitigation, and/or concrete implementation of GHG mitigation activities.

Note – Where jurisdictions follow Scenario 1, it is not necessary to justify the baseline start date because jurisdictional GHG laws, polices or regulations may not yet have been implemented.

3.3.2 Nested projects shall follow the project start date rules and requirements set out in the *VCS Standard* and *AFOLU Requirements*.

3.4 PROGRAM AND PROJECT CREDITING PERIOD

3.4.1 The project crediting period rules are set out in the *VCS Standard*. The program crediting period shall be a maximum of ten years, which may be renewed at most twice.

Note - While the crediting period for jurisdictional REDD+ programs is at most 10 years, renewable up to a total of 30 years, permanence is addressed, in part, by assessing the capacity of the program design to protect the permanence of carbon stocks in the long term. An appropriate level of buffer withholding will be determined based on the VCS document *JNR Non-Permanence Risk Tool*, as set out in Section 3.15.

3.5 JURISDICTIONAL REDD+ PROGRAM AND PROJECT LOCATION

3.5.1 A national jurisdictional proponent may determine the boundaries of subnational jurisdictions and may submit such boundaries to a VCS registry as set out in Sections 3.2 and 4.1. All subsequent subnational jurisdictional boundaries shall conform to the boundaries submitted by the national jurisdictional proponent. Such boundaries may follow existing administrative (i.e., politically defined) boundaries, or may be based on ecosystems (i.e., ecoregions) or other designations. The determination of subnational boundaries shall be precise, and shall not result in overlapping

[3] This date is immediately after the Montreal UNFCCC Conference of Parties, after which RED discussions began under the Subsidiary Body for Scientific and Technological Advice (SBSTA).

subnational jurisdictions.

3.5.2 Where a national government has not submitted subnational jurisdictional boundaries, subnational jurisdictions shall follow existing administrative boundaries rather than developing new boundaries based on ecosystem or other forest type designations.

3.5.3 Where a subnational jurisdiction is registered and the national government subsequently defines different boundaries for subnational jurisdictions (e.g., based on ecoregions), the subnational jurisdiction shall be grandparented in accordance with Section 3.11.14, after which the subnational jurisdiction shall be included in the newly defined jurisdictional areas as set out by the national government.

3.5.4 A jurisdiction's geographic areas shall not contain gaps (i.e., areas not accounted for), except under the following cases:

1) Where parts of the jurisdictional area are subject to exceptional conditions, such as where land is:

   a) Inaccessible and not at risk of being negatively impacted by potential leakage;

   b) Not under the jurisdiction's control (e.g., due to civil unrest); or

   c) The political boundaries concerning the land are disputed.

   Disputed areas may be included if the parties subject to the dispute agree on a boundary for the purposes of the jurisdictional REDD+ program.

2) Where areas have been affected by certain large infrastructure projects or geologic or weather-related events, as set out Section 3.11.12.

Where the precise boundary of an administrative unit is unclear, the national government's jurisdictional approval authority shall provide written approval of the boundary as set out in Section 4.1. Gaps can be removed or created when a jurisdictional baseline is renewed, and the jurisdictional proponent shall justify any new areas or areas that continue to be excluded at each baseline renewal. Where GHG credits have been issued from an area that is subsequently designated a gap, buffer credits shall be cancelled for the total amount of GHG credits issued from such area on the assumption that carbon has been lost. Note that while the jurisdictional area shall not include gaps except where described above, areas on which REDD+ activities are implemented, areas that shall be monitored and areas for which jurisdictions may be credited (based on where the jurisdiction has program ownership) may be smaller than the total jurisdictional area. Rules and requirements related to areas that shall be monitored are set out in Section 3.14 and program ownership in Section 3.6.1.

3.5.5 Multiple administrative subdivisions, such as several municipalities, may form one jurisdiction for the purposes of a jurisdictional REDD+ program, provided the administrative units are adjacent to each other.

3.5.6 The lowest eligible jurisdictional level is the second administrative level below the national level.

For example, in Brazil this would be a municipality (i.e., one administrative unit below the state) or, in Indonesia, a regency (i.e., one administrative level below the province).[4]

A country shall have no more than two registered jurisdictional levels (e.g., national and state, or state and municipality), and the higher-level jurisdictional proponent shall be responsible for determining how jurisdictional and project nesting occurs within the jurisdiction. Where a higher-level jurisdictional REDD+ program is developed after lower levels have been registered, the highest level shall determine how to address any ineligible subnational jurisdictions, subject to the grandparenting rules set out in Section 3.11.14.

3.5.7 The geographic location of a jurisdiction shall be specified in the jurisdictional program description in terms of its geographic area. The spatial extent of the jurisdiction shall be clearly specified to facilitate accurate monitoring, reporting and verification of GHG emission reductions and removals. The location description of the jurisdiction shall include the following information:

1) Name of the jurisdiction.

2) Maps of the jurisdictional area.

3) Geodetic coordinates of the jurisdictional area boundary, provided in the format specified in the *VCS Standard*.

4) Total area of the jurisdiction.

3.5.8 The geographic boundary of a jurisdiction may be changed under the following conditions:

1) A border dispute that affected the boundary when the jurisdictional baseline was initially set has been resolved. Adjustments to the geographic boundary due the resolution of such conflicts may be made at any time.

2) A new border dispute that affects the boundary has arisen since the boundary was initially set. Adjustments to the geographic boundary due to such conflicts may be made at any time.

3) Where projects straddle a jurisdictional boundary, as set out in Section 3.5.9. Adjustments that would expand the geographic boundary to fully encompass such projects may only be made at the next update to the jurisdictional baseline. Until such time, projects shall be subject to the grandparenting requirements set out in Section 3.11.14.

4) Where the geographic boundary of a jurisdiction is changed the following applies:

   a) All changed areas shall be noted in the monitoring report.

   b) The new geographic boundary shall be validated at the time of the next verification.

   c) Updated geodetic coordinates of the jurisdictional boundaries shall be submitted to the

[4] No minimum size of a jurisdiction is imposed because (i) this may be difficult to set and apply to smaller countries and, (ii) the complexity of jurisdictional crediting and approval requirements will likely lead to a de facto minimal size.

VCS registry administrator prior to the issuance of any further VCUs.

3.5.9 Where a pre-existing project crosses the jurisdictional boundary of the jurisdiction in which it becomes nested, it shall be grandparented in accordance with the grandparenting rules set out in Section 3.11.14. Where the grandparenting period has expired, the following applies:

1) Where the project proponent has received written approval or no-objection from all relevant government representatives with authority over the forests where the project is located (including from every jurisdiction with a jurisdictional baseline registered under the VCS Program or eligible to register a jurisdictional baseline under the jurisdictional REDD+ program that overlaps with the project boundary) the boundary of the subnational jurisdiction that contains the greatest percentage area of the project shall be extended to include the project.

2) Where the jurisdiction that has the greatest percentage area of the project has not registered a jurisdictional baseline under the VCS Program the project may be excluded from both jurisdictions and continue as an independent project, subject to the *VCS Standard* and *AFOLU Requirements*, or may become part of the registered jurisdiction where the jurisdiction approves inclusion of the project.

3) Where no approval has been secured to include the entire project area in one jurisdiction, the project shall be divided along jurisdictional boundaries (i.e., the project shall be split into two or more independent projects). Each portion shall be treated as an independent project, noting the following:

   a) Where each portion of the project falls within a jurisdiction with a registered jurisdictional REDD+ program, each portion of the original project shall be incorporated within the respective jurisdiction.

   b) Where one or more portions of the project fall within a jurisdiction with a registered jurisdictional REDD+ program, and one or more portions of the project fall within a jurisdiction with no registered jurisdictional program, all portions falling within the registered jurisdictional program shall be incorporated within the applicable jurisdiction, and all portions not within a registered jurisdictional program may continue as an independent project subject to the *VCS Standard* and *AFOLU Requirements*, and shall be revalidated and registered as independent projects.

4) Where one or more portions of the project continue as independent projects not operating under a jurisdictional REDD+ program, such areas shall be revalidated and registered as independent projects.

3.6 OWNERSHIP AND OTHER GHG PROGRAMS

Program Ownership

3.6.1 Documentary evidence shall be provided by the jurisdictional proponent establishing program ownership (see VCS document *Program Definitions* for definition of program ownership), as set out in the *VCS Standard*. Such program ownership shall be demonstrated with respect to those areas for which the jurisdictional proponent intends to seek VCU issuance.

The physical boundaries of such areas where program ownership is established shall be specified in accordance with the requirements for project location in the *VCS Standard*. Such boundaries may be equal to or smaller than the boundary of the jurisdictional baseline. Where the jurisdiction has program ownership for an area that is smaller than the boundary of the jurisdictional baseline, all other requirements (e.g., on monitoring) shall continue to apply to all areas included in the jurisdictional baseline.

3.6.2 Where a higher-level jurisdictional REDD+ program is registered subsequent to a lower-level jurisdictional program, the higher-level jurisdictional proponent shall determine which jurisdictional level is accorded program ownership over which elements of the program (i.e., over which areas, activities or policies), in consultation with lower-level jurisdictional proponents noting the requirements for stakeholder involvement set out in Section 3.7.

3.6.3 Nested projects shall follow the project ownership requirements set out in the *VCS Standard*.

Participation Under Other GHG Programs

3.6.4 Where jurisdictional REDD+ programs reduce GHG emissions from activities that are included in an emissions trading program or any other mechanism that includes GHG allowance trading, evidence shall be provided that the GHG emission reductions and removals generated by the jurisdictional program have not and will not be otherwise counted or used under the trading program or mechanism. Acceptable forms of evidence are set out in the *VCS Standard*. Likewise, where jurisdictional programs have sought or received another form of GHG-related environmental credit, jurisdictional proponents must follow the requirements set out in the *VCS Standard* with respect to reporting the details of such credits.

3.6.5 Jurisdictional proponents shall not claim credit for the same GHG emission reduction or removal under the VCS Program and another GHG program. Jurisdictional REDD+ programs issuing GHG credits under both the VCS Progam and another GHG program shall also comply with the rules and requirements set out in VCS document *JNR Registration and Issuance Process.*

3.6.6 Jurisdictional proponents shall deduct from their net GHG benefit (i.e., the total change in GHG emissions minus leakage) the non-permanence risk deduction and any GHG emission reductions and removals achieved or anticipated during the same period by or for other GHG programs or non-VCS (standalone) projects encompassing the same jurisdictional boundary

(i.e., covering the same or overlapping area(s) and GHG pools and sources). Where jurisdictional proponents allow projects to be developed under other (i.e., non-VCS) GHG programs, it is recommended that jurisdictions apply consistent rules for such projects with respect to grandparenting, baseline setting and updating, and monitoring, and it is the responsibility of the jurisdiction to ensure such projects are properly integrated in the jurisdictional REDD+ program.

3.6.7 Any GHG emission reductions and removals achieved or anticipated by non-forestry carbon projects (e.g., fuel efficient stove projects) that are associated with significantly reducing pressure on forests within the geographic boundary of the jurisdiction shall be deducted from the total change in GHG emissions associated with avoided deforestation or degradation across the jurisdiction, to prevent double counting. This applies to non-forestry projects (e.g., fuel efficient stove projects) that generate GHG credits under the CDM, VCS or any other GHG program.

3.7 SAFEGUARDS

3.7.1 Jurisdictional REDD+ programs, baselines and crediting options shall be developed and documented in a transparent manner, and in consultation with relevant stakeholders. Relevant stakeholders include project proponents of existing AFOLU projects, private land owners, local communities and indigenous peoples as well as relevant government agencies. Principle 6 of the REDD+ Social & Environmental Safeguards (SES)[5] ; the *Guidelines on Stakeholder Engagement in REDD+ Readiness* of the Forest Carbon Partnership Facility; or the UN-REDD Programme may be used to guide the stakeholder consultation process.

3.7.2 Jurisdictional programs shall comply with all UNFCCC decisions on safeguards for REDD+[6] and any relevant jurisdictional (national and subnational) REDD+ safeguards requirements. The jurisdictional program (or baseline) description shall describe how the program meets these requirements. Jurisdictional proponents shall also provide information in the monitoring report with respect to how, during the design and implementation of the program, UNFCCC decisions on safeguards and any relevant jurisdictional (national and subnational) REDD+ safeguards requirements have been met, and in particular how the safeguards have been addressed and respected.

Jurisdictional proponents shall ensure such information is made readily accessible to all relevant stakeholders throughout implementation of the jurisdictional REDD+ program. The nature of stakeholder consultations related to the design and implementation of the jurisdictional program,

[5] Principle 6 is titled All relevant rights holders and stakeholders participate fully and effectively in the REDD+ program.

[6] Jurisdictional proponents should refer to the most recent UNFCCC decisions. As of the publication of this document, the most relevant decisions include Decision 1/CP.16, appendix I, paragraph 2; Decision 1/CP.16, paragraph 69; Decision 2/CP.17, paragraph 63; Decision 1/CP.16, paragraph 71(d); Decision 9/CP.19, paragraph 3; Decision 9/CP.19, paragraph 3; Decision 12/CP.17, paragraph 2; Decision 12/CP.17, paragraph 3; Decision 2/CP.17, paragraph 64; Decision 9/CP.19, paragraph 4; and Decision 12/CP.19, paragraph 1.

including who was consulted, the manner in which the consultations occurred (including input received and how this was considered) and the outcomes of the consultations, shall be included in the jurisdictional program description. Additional standards such as the REDD+ Social & Environmental Standards (REDD+SES), Climate, Community & Biodiversity Standards (CCBS) and Forest Stewardship Council (FSC) certification may be used, where appropriate, to provide such information.

3.7.3 Jurisdictions following Scenario 2 or 3 shall develop a mechanism for receiving, screening, addressing, monitoring and reporting feedback on grievances and concerns submitted by affected stakeholders relating to the design, implementation and evaluation of the jurisdictional REDD+ program at the local, subnational and national levels. Principle 6.6 of the REDD+ Social & Environmental Safeguards (SES) may be used to guide development of grievance mechanisms.

3.7.4 Nested projects shall follow the environmental and socio-economic impact requirements set out in VCS document *AFOLU Requirements*.

3.8 ELIGIBLE ACTIVITIES

3.8.1 Jurisdictional REDD+ programs and nested projects may include the following VCS AFOLU categories:

1) Reduced Emissions from Deforestation and Degradation (REDD).
2) Improved Forest Management (IFM).
3) Afforestation, Reforestation and Revegetation (ARR).

For the purposes of jurisdictional and nested REDD+, these categories are defined in terms of the UNFCCC REDD+ activities, as follows (see Appendix 1: Comparison of IPCC, UNFCCC and VCS Components of REDD+ for a full classification of activities):

1) Reduced emissions from deforestation (including most REDD activities, set out in VCS document *AFOLU Requirements*).
2) Reduced emissions from degradation (which may include some REDD and most IFM activities set out in VCS document *AFOLU Requirements*).
3) Carbon stock enhancement (e.g., ARR, assisted natural regeneration and IFM Low-productive to High-productive Forest set out in VCS document *AFOLU Requirements*).

Note - Activities and requirements for wetlands (including peatlands) are set out in Section 3.9.4, on carbon pools. Activities falling under the UNFCCC category of conservation of non-threatened carbon stocks are not eligible under the VCS Program.

3.8.2 Jurisdictional proponents may determine which activities set out in Section 3.8.1 will be accounted for within their jurisdictional REDD+ program, noting the following:

1) GHG emissions from deforestation shall always be accounted for, regardless of which other activities are (or are not) included. Accounting for degradation and enhancements is optional.

2) Where jurisdictions are required to account for degradation (due to their participation under other GHG programs or sources of demand (e.g., the Forest Carbon Partnership Facility (FCPF) Methodological Framework (MF))) but do not yet have the capacity or data to fully account for it, degradation may be included and accounted for using IPCC Tier 1 methods. Where accounted for using Tier 1 methods, any increase in GHG emissions from degradation compared to the baseline shall be subtracted from the total emission reductions and removals achieved by the jurisdiction. However, any emission reductions and removals accounted for using Tier 1 shall be assumed to be zero in the final emission reductions and removals quantification (i.e., no credits shall be issued based on Tier 1 accounting).

3) Where deforestation is accounted for but degradation is not, procedures shall be established to account for possible leakage from deforestation to degradation, in accordance with Section 3.12.8.

3.8.3 Projects registered with a jurisdictional baseline may include activities not included in the jurisdictional baseline, following the VCS project-level requirements set out in VCS document *AFOLU Requirements*. For example, a project occurring in a jurisdiction with a jurisdiction-wide deforestation baseline may develop a project baseline for degradation and generate both GHG emission reductions from deforestation (accounted for within the jurisdictional REDD+ program) and emission reductions from degradation (accounted in accordance with VCS document *AFOLU Requirements*) in the same project boundary. In such cases, the geographic areas of the two baselines shall not overlap for the same time period. For example, areas defined as subject to deforestation in the jurisdictional baseline and those subject to degradation in the project baseline shall not overlap.

3.9 SCOPE AND JURISDICTIONAL REDD+ PROGRAM BOUNDARY

3.9.1 Where requisite precision requirements set out in Section 3.14.11 can be achieved, jurisdictions following Scenario 3 (i.e., where projects are not directly credited) may use land-based accounting approaches, and where results from land-based accounting can be separated by activity, jurisdictions following Scenario 2 may also use land-based accounting. Where a jurisdiction follows Scenario 1, jurisdictions shall use activity-based accounting to develop their jurisdictional baseline.

Note - Activity-based accounting will not prevent a jurisdiction from accounting for its forests in accordance with IPCC categories of forest converted to non-forest, forest remaining forest, and conversion of non-forest to forest.

3.9.2 The relevant carbon pools for REDD+ activities are aboveground tree biomass (or aboveground woody biomass, including shrubs), aboveground non-tree biomass (aboveground non-woody biomass), belowground biomass, litter, dead wood, soil (including peat) and wood products.

Jurisdictional proponents may determine which pools and sources will be accounted for. The choice of carbon pools and sources shall be conservative (i.e., pools that are at risk of decreasing, relative to the jurisdictional baseline, due to jurisdictional REDD+ program or project activities shall not be excluded, where deemed above *de minimis* in accordance with Section 3.9.5).

3.9.3 Subnational jurisdictions and nested projects may include additional carbon pools that are not accounted for at a higher level and, where included, shall follow the requirements for such pools set out in Section 3.11.14.

3.9.4 Where a jurisdiction contains forested wetlands, such as peatlands (or forested wetlands would be created by afforestation or reforestation activities and/or by changes in drainage), soil carbon shall be accounted for, at minimum, within such wetland areas, except where deemed *de minimis* or where it is conservative to exclude the pool, as set out in Section 3.9.5. Where peat is included in the jurisdictional REDD+ program boundary, the rules and requirements with respect to peatlands set out in VCS document *AFOLU Requirements* are required for jurisdictional baseline setting and monitoring. Emission factors for wetlands shall be conservative and based on empirical data or other sources published in scientific peer-reviewed literature.

3.9.5 All significant sources of GHG emissions related to the activities accounted for shall be included, except where a source is deemed *de minimis* or conservative to exclude. Excluded sources, including emissions from leakage that have not been accounted for (in accordance with Section 3.12.2), shall not collectively represent more than 10 percent of total emissions, and their exclusion shall be adequately justified.

3.9.6 Specific carbon pools and GHG sources, including those that cause project, jurisdictional or leakage emissions, are deemed *de minimis* and do not have to be accounted for where together the omitted decreases in carbon stocks (in carbon pools) and increases in GHG emissions (from GHG sources) collectively amount to less than 10 percent[7] of the total GHG emission reductions and removals generated by the jurisdiction. *De minimis* exclusions shall be demonstrated and justified at validation only; new *de minimis* exclusions are not permitted at verification. Where jurisdictions follow Scenario 2, the jurisdiction shall establish the criteria and procedures by which a carbon pool or GHG source may be determined to be *de minimis* for projects developed within the jurisdiction.

3.9.7 Specific carbon pools and GHG sources do not have to be accounted for if their exclusion leads to conservative estimates of the total GHG emission reductions and removals generated. Where jurisdictions follow Scenario 2 or 3, the jurisdictional proponent shall establish criteria and

[7] VCS document *AFOLU Requirements* sets *de minimis* (insignificance) at 5 percent (i.e., individual emissions sources need not be accounted for where they represent less than 5 percent of total project emissions), and allow methodologies to determine how this is calculated. To allow more flexibility for jurisdictions, significance is defined as 10 percent rather than 5 percent for jurisdictional accounting. While 10 percent is consistent with IPCC guidelines for projects, the IPCC guidelines do not clearly state what significance is at a national level.

procedures to determine if a carbon pool or GHG source may be conservatively excluded, including, under Scenario 2, criteria and procedures by which projects may make such determination. Such conservative exclusion may be determined by using tools from an approved GHG program, such as the CDM A/R methodological tool *Procedure to determine when accounting of the soil organic carbon pool may be conservatively neglected in CDM A/R project activities*, or based upon peer-reviewed literature.

3.10 ADDITIONALITY AND ELIGIBILITY

3.10.1 Additionality is factored into the jurisdictional baseline by taking account of all existing constraints and land areas where deforestation, forest degradation and carbon stock enhancement is feasible given the activities considered in the baseline, as set out in Section 3.11. The onus is on rigorous baseline determination to provide a conservative benchmark for measuring reductions in GHG emissions such that any emission reductions and removals relative to the baseline are considered additional. Relevant commitments to reduce GHG emissions or increase sequestration shall be included in the baseline estimation, in accordance with Section 3.11.13. There are no further additionality requirements for jurisdictions.[8]

3.10.2 Project additionality shall be addressed as follows:

1) Where jurisdictions follow Scenario 1, projects shall demonstrate additionality in accordance with the procedures set out in the methodology applied by the project.

2) Where jurisdictions follow Scenario 2 and have set a spatially explicit baseline, projects are not required to demonstrate additionality for any activities that use the spatially explicit jurisdictional baseline (i.e., where they include the same activities and carbon pools). Additionality shall be demonstrated for any project activities or carbon pools not included in the spatially explicit baseline, in accordance with the procedures set out in the methodology applied by the project.

3.10.3 Where jurisdictions and nested projects can be issued VCUs (i.e., following Scenario 2, whether or not GHG credits have been issued to the jurisdiction), the jurisdiction may set requirements for project eligibility and for approving nested (lower-level) jurisdictional and/or project baselines. Jurisdictions shall only approve nested projects that meet such eligibility criteria. Jurisdictions have authority to manage approval of projects based on the recognition that the jurisdiction has responsiblity for all GHG emissions that occur within its boundaries.

[8] Jurisdictional REDD+ programs differ from projects in that there are not specific activities that can be demonstrated to have occurred only due to climate finance. Jurisdictions following Scenarios 2 and 3 are responsible for all GHG emissions that occur within the jurisdictional boundary.

3.11 JURISDICTIONAL BASELINE

3.11.1 A jurisdictional baseline shall be established for the purpose of estimating baseline GHG emissions or removals.

3.11.2 The jurisdictional baseline shall be fixed for a period of 5 to 10 years as defined by the jurisdiction in the jurisdictional program description, and shall be updated according to such frequency. Additional rules and requirements with respect to updating jurisdictional baselines are set out in Section 3.11.16.

3.11.3 A jurisdictional baseline may be broken down into any of the broad activities set out in Section 3.8.1. Such baseline may also be further divided into specific (VCS) AFOLU activities[9] (see Appendix 1: Comparison of IPCC, UNFCCC and VCS Components of REDD+ for a comparative breakdown of these different activities). Activities may overlap spatially within a given jurisdictional baseline period where measures are in place to ensure that the emission reductions and/or removals achieved by one activity are not counted towards the emission reductions and/or removals achieved by another activity (i.e., that no double counting occurs).

Where broad UNFCCC REDD+ activities are divided into specific AFOLU activities, the following applies:

1) Deforestation activities shall be comprehensively accounted for (e.g., a jurisdictional proponent shall not select only large–scale commercial deforestation, as described in Section 3.11.13, or ignore such deforestation).
2) Degradation and carbon stock enhancement do not need to be comprehensive, and individual activities may be included. For example, within the category of degradation a jurisdiction may elect to include timber harvesting but not fuelwood collection, or afforestation may be included but not the enhancement of stocks of existing forests.

3.11.4 Jurisdictional proponents shall demonstrate how the development of the jurisdictional baseline has achieved, or is expected to achieve, consistency with the data and methods used to account for forest-related GHG emission reductions and removals contained in the country's existing or emerging UNFCCC GHG inventory.

Historical GHG Emissions and Removals

Activity-Based Accounting

3.11.5 A historical level of GHG emissions across the historical reference period shall be calculated for each selected activity. Such historical level shall form the basis of the baseline projection as set out in Section 3.11.13.

[9] Dividing the baseline amongst further activities may provide jurisdictional proponents with flexibility and potential cost savings in carbon accounting.

3.11.6 Historical rates for gross deforestation shall be determined using remote sensing (RS) imagery, except for large-scale commercial deforestation where it is required to be separated out in accordance with Section 3.11.13, which may (optionally) use RS imagery. Historical rates for all other activities may (optionally) use RS imagery. Examples of other data sources that may be used include surveys, relevant statistics and inventories.

3.11.7 Where the jurisdiction is nested within a higher-level jurisdiction, the activity rates shall be assigned in accordance with Section 3.11.16 or 3.11.17, as appropriate.

3.11.8 Where remote sensing imagery is used to estimate activity rates, the following applies:

1) All land use and land-use change (LULC) maps created using RS imagery and used for calculating activity rates shall have a final spatial resolution of no coarser than 100m x 100m. Imagery with a coarser resolution (e.g., 300m x 300m) may be used to verify forest cover in areas with very low probability of deforestation such as areas distant from roads and forest frontiers (e.g., in unmanaged forests). Imagery with a coarser resolution may also be used where it is required to be consistent with a national baseline established by law.

2) The minimum mapping unit size of the LULC maps created using RS imagery shall not be more than one hectare irrespective of forest definition. A larger minimum mapping unit size may be used where it is required to be consistent with a national baseline established by law.

3) Land cover maps shall be created using a forest stratification and LULC system[10] of distinguishable and non-overlapping LULC classes and forest strata. Lands may be further divided into sub-classes where each class is distinct and distinguishable. Areas where forest systems are present that have cyclical changes in forest cover, such as slash-and-burn systems, short-rotation managed forests and temporarily unstocked forests, shall be shown in a separate strata from similar forests not under these cycles where their average carbon stock is significantly lower than the stock in not similarly impacted forest.

4) A series of remotely-sensed spatial data from at least three points in time taken from a similar season within the historical reference period (as set out in Section 3.11.12) shall be used. The season in which data is collected may vary for different strata within the jurisdiction. For example, areas with high cloud cover will likely be examined during the dry season and areas of deciduous forests shall be examined during a season when leaves are present. At least two years shall separate each of the three data points. Additional data points (including older data points) beyond the required three may be included in the series. Where data from more than three points in time are available within the historical reference period, but not used to estimate the jurisdictional baseline, reasons for excluding any additional data points from the final analysis shall be justified.

5) Areas of a LULC map within the historical series may be classified as *unknown* where the

[10] A land-use and land cover (LULC) class is a broad land class, while a forest stratum is a subdivision within the forest LULC class.

jurisdictional proponent justifies that unavoidable gaps exist in the original RS data due to, *inter alia*, cloud cover, dust, smoke or banding. One of the following approaches may be used to fill such gaps:

a) Multiple RS images within a 14-month period may be combined to create one single LULC map.

b) Rates may be calculated by averaging pixel-based rates calculated from a large set of individual images.

c) Where optical data archives remain inadequate within a 14-month period, gaps may also be filled using RADAR (such as SAR) imagery of appropriate spatial resolution, to extend the boundaries of relevant forest classes across areas of otherwise persistent cloud cover.

In addition, forest areas may be systematically excluded where it can be justified that the forest area is *unmanaged*. Unmanaged forests are defined as forests that are located more than 50 km from roads, navigated rivers and/or from existing cleared forests. Alternatively, a jurisdictional proponent may create its own definition of unmanaged forest where it leads to a conservative jurisdictional baseline.

d) Where available, data from global forest cover datasets may be used to fill such gaps (e.g., data from the University of Maryland's Global Land Cover Facility[11]).

e) In addition to the above, other approaches may be used where justified by the jurisdictional proponent.

Where it is not feasible to fill gaps or to define forest areas as *unmanaged*, areas may remain categorized as *unknown* until categorization as forest or non-forest becomes feasible (i.e., until images covering the area, or other means as described above, become available to fill such gaps).

6) The most recent point in time of the historical series shall be within two years of the start date of the (current) jurisdictional baseline period. The LULC map created from such most recent data point shall serve as the *benchmark map*, indicating which areas are forest and non-forest at the start of the jurisdictional baseline period. Such forest benchmark map shall have an accuracy of at least 75 percent for distinguishing forest versus non-forest classes.

7) Calculated rates of LULC change shall be gross rates (i.e., not including any reforestation or natural regeneration that may have subsequently occurred).

3.11.9 Where remote sensing imagery is not used to estimate activity rates in accordance with Section 3.11.8, historical activity data may be based on other data sources including social surveys, governmental and non-governmental records. Such data sources may be used where it can be

[11] Available at: http://glcf.umd.edu/data/landcover. See also Hansen, M., R. DeFries, J.R.G. Townshend, and R. Sohlberg (2000), *Global land cover classification at 1km resolution using a decision tree classifier, International Journal of Remote Sensing*. 21: 1331-1365.

demonstrated (e.g., through ground verification surveys) that they yield conservative activity rates.

3.11.10 Activity data shall be converted to GHG emission levels using an emission/removal factor, noting the following:

1) Jurisdictions may reference the IPCC 2006 Guidelines for National GHG Inventories to establish procedures for quantifying GHG emissions/removals, in particular with respect to the development of emission factors associated with the following carbon pools:

   a) Litter.

   b) Dead wood.

   c) Soil.

   d) Belowground biomass.

   Emission factors for aboveground biomass shall be derived from direct measurement with quantifiable uncertainty.

2) Calculated GHG emission and removal factors shall meet the uncertainty requirements set out in the VCS Standard, *mutatis mutandis*. Locations of new field measurements used to calculate carbon stocks shall be selected without bias (i.e., plots shall be allocated using a statistically valid method). Allocation may be random or systematic and it shall be demonstrated that measurements are representative of all included areas. Existing inventory data may be used as long as it can be demonstrated that the data are accurate and representative of existing strata within the jurisdiction.

3) Field measurements used to calculate carbon stocks shall have been collected within 10 years prior to the start of the (current) jurisdictional baseline period.

4) Default data (e.g., from IPCC or those established in the scientific literature) may be used for minor pools in the determination of GHG emission and removal factors, where minor pools are defined as pools representing less than 15 percent of the total carbon stock.

Land-based Accounting

3.11.11 Where land-based accounting[12] is elected by jurisdictional proponents operating under Scenario 2 or 3, historical GHG emissions shall be calculated from changes in carbon stocks. Such accounting shall meet the uncertainty requirements set out in Section 3.14.12.

Under land-based accounting, changes within and between all land-use categories shall be regularly monitored, using methods to ensure the consistent treatment of land areas over time. Land-based accounting may use sample plots, remote sensing techniques, modeling

[12] Land-based accounting is not yet well established. While it is allowed in certain cases in Scenario 2 and 3, further specification is not included. The VCS may set out further requirements on landscape accounting in the future.

approaches, or some combination of these to produce an estimate of emissions and removals for the entire geographic area over the specified time period.

Baseline GHG Emission Reductions and Removals

3.11.12 Where no baseline (or reference level) has been established under the UNFCCC for the purposes of crediting or compensation in a market-based mechanism, alternative jurisdictional baselines shall be identified and developed based on the historical reference period, and may be adjusted as noted below. The jurisdictional proponent shall select the most plausible jurisdictional baseline scenario, or a scenario that is more conservative than the most plausible,[13] and shall provide justification of the criteria and procedures used to determine the selected scenario. The following applies to the development of jurisdictional baselines:

1) Jurisdictional proponents shall, at a minimum, develop two alternative jurisdictional baselines for the current jurisdictional baseline period based on the following:

   a) The historical annual average GHG emissions or removals over the period of 8 to 12 years ending within two years of the start of the current jurisdictional baseline period;

   b) The historical trend of GHG emissions or removals (which may be increasing or decreasing) based on land use changes over at least the 10 years ending within two years of the start of the current jurisdictional baseline period.

   For both historical annual average and historical trend baselines, the period chosen must be conservative and adequately justified.

   Historical annual average and historical trend activity rates are sufficient for developing the deforestation component of an alternative baseline scenario (i.e., it is not necessary to calculate GHG emissions to select the jurisdictional baseline scenario).

2) Alternative baseline scenarios may include modeled adjustments to reflect national or subnational circumstances (i.e., baseline options may include alternatives beyond those required in Section 3.11.12(1) above). For example, deforestation projections may be based on changes in variables that influence deforestation such as GDP, access to forests, commodity prices, population growth or other variables for which credible projections are available. Such adjustments shall be justified, for example, by demonstrating that there is greater certainty in projection of the correlated independent variable than direct projection of deforestation; and/or, the trends in the independent variable precede trends in deforestation. Committed national (and subnational) policies and development plans can also be used to justify adjustments.[14] For subnational jurisdictions, adjustments may be justified using data

[13] For example, where a jurisdiction applying the FCPF MF is required to use the historical average, but an increasing trend is more plausible, the jurisdiction may elect to use the more conservative historical average to fulfill the MF requirement.

[14] The 2011 Meridian Institute report “Guidelines for REDD+ Reference Levels: Principles and Recommendations.” may be used as guidance for appropriate adjustments.

from analogous jurisdictions within the same country that historically have experienced drivers and agents of deforestation and/or degradation, landscape configuration, and socio-economic and cultural conditions similar to those facing the participating jurisdiction during the projected baseline period.

Note – Methodologies, including VCS methodologies, may be used by jurisdictions to guide jurisdictional baseline development, where appropriate.

3) Projection of the spatial location of deforestation activities across a jurisdictional baseline period (i.e., a geographical allocation of the total amount of deforestation within the jurisdiction), shall be addressed as follows:

   a) Where jurisdictions follow Scenario 1 the spatial location of any large-scale commercial deforestation shall not be delineated,[15] though location analysis for all other deforestation activities shall be undertaken.

   b) Where jurisdictions follow Scenarios 2 or 3, location analysis is not recommended for large-scale commercial deforestation. The spatial location of all other deforestation may be delineated and location analysis is considered good practice for such deforestation.

   c) Where applied, location analysis shall be based on modeling the likely location of deforestation based on consideration of the impact of factors influencing deforestation in historical analyses (e.g., proximity to existing deforestation; distance from roads, rivers, mills or towns; slope and elevation).

   d) Where the location analysis predicts a specific area will be deforested in the current jurisdictional baseline period, no other activities (e.g., degradation) shall be accounted for on the same area (during the same baseline period), except for the enhancement of forest carbon stocks that would otherwise be absent.

4) The jurisdictional baseline shall take into account any relevant commitments by the jurisdictional government to reduce GHG emissions or enhance carbon stocks within the jurisdiction that are not intended to be financed via market mechanisms, including certain types of nationally appropriate mitigation actions (NAMAs) that are undertaken as a jurisdiction's independent or supported commitment to reduce emissions, such that there is no double counting.

5) In order to ensure that baseline emissions are not overestimated due to events that are unlikely to reoccur in the jurisdictional REDD+ program scenario (i.e., in the next 5 to 10 years), instances of forest loss in the historical reference period shall be excluded from the calculation and projection of the rate of deforestation and associated GHG emissions in the baseline where they represent either of the following:

   a) Large infrastructure projects (i.e., more than 1,000 ha of forest loss from the footprint of

[15] This is because large-scale commercial deforestation /degradation activities are relatively unconstrained by location. In addition, setting a location-specific baseline may influence the location of future planned deforestation activities.

the infrastructure itself, such as the flooding for a new dam or footprint of a new mine). Note that roads are not considered large infrastructure. This requirement is only relevant to infrastructure that is not part of a pattern that will likely be replicated in the future (i.e., it is unlikely to reoccur in the period in which the baseline is valid).

b) Large (i.e., more than 1,000 ha) forest loss due to geological (e.g., volcano or landslide) or weather-related (e.g., hurricane) impacts that have a return interval of greater than 10 years. Where areas of loss are not contiguous, it shall be demonstrated that all affected areas are associated with the same natural disturbance event.

Where excluded, the area associated with this historical loss shall be clearly identified and future removals from the area shall not be included in the jurisdiction's accounting, until such time as the forest has recovered to a state similar to that which existed prior to the disturbance. Where recovered, the area may be included in the jurisdictional baseline when such baseline is updated.

6) Significant future GHG emissions from large unavoidable infrastructure projects (e.g., from deforestation related to planned hydroelectric projects) may be included in the jurisdictional baseline under the following circumstances:

a) Committed forest loss is expected to exceed 1,000 ha;

b) The committed activity is included in official development plans and has received all approvals required for the activity to commence; and,

c) Either the activity causing the GHG emissions has already commenced (e.g., construction is underway) or it can be demonstrated that at least 80 percent of required finances are in place.

The area associated with this future loss shall be clearly identified when the jurisdictional baseline is developed, and any future GHG emissions or removals associated with the area shall be accounted for.

7) Where jurisdictions follow Scenario 1 and where large-scale commercial deforestation across the jurisdiction (see VCS document *Program Definitions* for definition of large-scale commercial deforestation) collectively exceeds 10 percent of historical deforestation in the historical reference period, such large-scale commercial deforestation shall be separated out from all other deforestation.[16] Such separation is recommended as good practice for

[16] The rationale for the rules and requirements separating out large-scale commercial deforestation baselines where crediting occurs directly to projects (i.e., in Scenario 1 and suggesting it as best practice in Scenario 2) is that such deforestation may bias spatial baselines and subsequent project-level carbon accounting for all other types of deforestation. This is because future large-scale commercial deforestation activities are typically much less constrained by location than other deforestation activities, and it is difficult to project with accuracy when a particular area would be deforested for large-scale commercial purposes. Projecting the location of such deforestation would mean choosing in advance which landowners are eligible for crediting, taking away the right and incentive of some landowners to be rewarded for choosing not to convert their lands. This issue is not relevant where only the jurisdictional proponent is credited (i.e., Scenario 3), since the total number of credits claimed by the jurisdictional proponent will not be influenced. Large-scale commercial deforestation has been defined to

Scenario 2. The rate of such large-scale commercial deforestation shall be based on historical analysis and shall be calculated separately from the rate of all other deforestation.

Note that nested projects may continue to include large-scale commercial (i.e., planned) activities in their spatially explicit baseline where it can be demonstrated that such activities would have occurred within the project area, in accordance with VCS document *AFOLU Requirements* and the methodology applied.

Note - Smaller-scale (i.e., less than 1000 contiguous hectares) commercial deforestation may be grouped with all other (non-commercial) deforestation. Large infrastructure and large natural disturbances are not considered large-scale commercial deforestation and shall be treated as set out in (3), above.

8) Where carbon would have been lost in the baseline due to land use conversion or disturbance, GHG emissions from soil carbon, belowground biomass, wood products and dead wood carbon pools generally occur over a period of time following the event. It shall not be assumed that all GHG emissions from these carbon pools occur instantaneously or within a short period of time.

9) Jurisdictional proponents shall use appropriate methods to reliably establish the pattern of carbon loss over time using empirical evidence, such as studies that use primary data or locally calibrated models, or shall apply an appropriate decay model (such as a linear or exponential decay function) that is scientifically sound, based on empirical evidence and not likely to overestimate early carbon losses. Jurisdictional proponents may use an approach based on the optional default decay rates in VCS document *AFOLU Requirements*.

3.11.13 Where a baseline (or reference level) has been established under the UNFCCC or another GHG program for domestic or international compliance, the following applies:

1) Where the baseline (or reference level) has been accepted and approved under the UNFCCC for the purposes of generating GHG emission reductions for market-based mechanisms, such baseline may be used for the jurisdictional REDD+ program. Where the baseline has been established under another GHG program, or has been submitted but not accepted and approved for market-based mechanisms under the UNFCCC, the (non-VCS) jurisdictional baseline shall be compared against the jurisdictional baseline determined using the steps set out in Section 3.11.12. The more conservative of the compared baselines shall be adopted as the (VCS) jurisdictional baseline.

2) Where the jurisdictional baseline (or reference level) to be used under the VCS Program was established under the UNFCCC or another GHG program the following applies:

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ensure that separating out such areas should be simple (and low cost) to undertake, based on historical remote sensing imagery.

a) The (VCS) jurisdictional baseline shall be valid for the same period of time as the baseline, reference emission level or reference level under the UNFCCC or the other GHG program.

b) Any data used to separate such (VCS) jurisdictional baseline into lower-level baselines (i.e., into subnational jurisdictional baselines or project baselines) shall be consistent with data used to develop the UNFCCC or the other GHG program baseline. All activities included in the UNFCCC or the other GHG program jurisdictional baseline shall be included in the (VCS) jurisdictional baseline.

c) Where jurisdictional proponents choose to include additional activities that are not included under such (non-VCS) baseline, a separate jurisdictional baseline for the additional activities may be developed. In addition, jurisdictional proponents may further divide the jurisdictional baseline into activities identified in Section 3.8.1, where the sum of the baselines for each of the activities remains equal to the UNFCCC or the other GHG program baseline.

d) Where a UNFCCC or other GHG program jurisdictional baseline was established, the (VCS) jurisdictional baseline shall use the activity rates and emission factors that were the basis for such baseline.

Nesting and Updating Jurisdictional Baselines

3.11.14 Where a baseline is developed at a higher level after the development and registration of a project or jurisdictional baseline at a lower level (e.g., where a subnational jurisdictional baseline has been registered and a national jurisdictional baseline is subsequently developed), the following applies:

1) The lower-level jurisdictional baseline shall be grandparented and remain valid for 18 months, and the project level baseline shall be grandparented and remain valid for the number of years remaining before such baseline is due to be updated (e.g., where the project baseline is valid for 10 years and a higher-level baseline is registered in year 4 after the project start date, the project level baseline remains valid for the 6 years remaining before it would have been due for update), before being replaced by the higher-level jurisdictional baseline. Project proponents may choose to adopt the higher-level jurisdictional baseline at any point prior to the end of the grandparenting period. During such grandparenting period the lower-level jurisdiction or project may use its original baseline for calculating GHG emission reductions and removals (i.e., prior to any leakage calculations).

2) Where the lower-level project or jurisdictional baseline has a different scope (i.e., different REDD+ category or carbon pools are included) than the higher-level baseline, the rules and requirements in Section 1) above only apply to those activities or pools overlapping with the higher level.

3) Where individual activities or pools are not overlapping, any activities or pools within the lower-level project or jurisdictional baseline that are not included in the higher-level baseline (e.g., where the lower level includes carbon stock enhancement or degradation, but the

higher level does not) may continue as independent (standalone) project or jurisdictional activities. Standalone project activities shall follow the requirements set out in VCS document *AFOLU Requirements*.

3.11.15 Where a baseline is developed at a lower level after the registration of a jurisdictional baseline at a higher level (e.g., under Scenario 1 or 2 where a national jurisdictional baseline has been registered and a subnational jurisdictional baseline is subsequently developed, or where subnational jurisdictional baseline exists and a project is developed), the following applies:

1) Where the higher-level jurisdictional baseline is spatially explicit, and a baseline is developed for a lower level (e.g., for an unplanned deforestation project, in accordance with VCS document *AFOLU Requirements*), the lower-level baseline shall be identical to the higher-level jurisdictional baseline for the relevant area (i.e., the deforestation pixels applied for each baseline year for both the higher and lower levels shall be identical). Where the lower level has more refined carbon stock data, it is recommended that such data are incorporated at the higher level for the relevant strata or, where selected, for a newly created substratum at the subsequent jurisdictional baseline update.

2) Where a baseline is developed for any other (non-spatially explicit) lower-level activities within a higher-level jurisdictional baseline (including where unplanned deforestation projects are developed within a non-spatially explicit higher-level jurisdictional baseline), the following applies:

   a) A baseline shall be developed for the lower level and shall be subject to approval by the (higher-level) jurisdiction in accordance with Section 4.1. Such baselines shall use the GHG emissions and removal factors from the higher level but shall use project- (or lower-level jurisdiction-) specific activity data. For activity data, the jurisdiction shall, where applicable, require the lower level to use the same data sources to enhance consistency between the two baselines. In addition, the lower level shall use the same method of baseline development as the jurisdiction (e.g., using a historical average, historical trend or projection based on socioeconomic factors), as appropriate. Where such an approach cannot reasonably be expected to produce a baseline applicable to the project level (e.g., planned deforestation projects as described in VCS document *AFOLU Requirements*), projects shall apply a (VCS) methodology for the development of a project-level baseline.

   b) Where the lower level has more accurate GHG emissions or removal factors, it is recommended that such factors are incorporated at the higher level at the subsequent jurisdictional baseline update.

3.11.16 Jurisdictional baselines shall be updated and revalidated every 5 to 10 years. The following jurisdictional baseline components shall be updated:

1) The GHG emissions and removal factors that are more than 10 years old shall be updated, calculated in accordance with Section 3.11.13;

2) The activity rates shall be updated, noting the following:

a) The activity rate for large-scale commercial deforestation shall be updated using procedures that are consistent with those used in the initial jurisdictional baseline development.

b) Activity rates for all other deforestation shall be updated by adjusting the previous baseline to reflect any changes in variables that influence deforestation, such as GDP, access to forests, commodity prices or population growth. Such adjustment factors shall be based on empirical data available at the time the jurisdictional baseline is updated.

c) The activity rate for all other activities shall be updated using procedures that are consistent with those used in the initial jurisdictional baseline development.

d) For any activity, the historical rate may be adjusted to add back in the GHG emissions reductions (or to subtract out the removals) achieved by the jurisdictional REDD+ program during current and previous baseline periods. Such adjustments[17] may be made only where such emission reductions or removals are attributable to the jurisdictional program.

3) The spatial component (i.e., the specific location of baseline activity), where applicable, shall be updated taking into account any areas that were targeted for REDD+ activities in the previous jurisdictional baseline period, to prevent double counting of the same reduction on the same area.

Where an applicable baseline (or reference level) is approved under the UNFCCC after a VCS jurisdictional baseline has been registered, and where the VCS jurisdictional REDD+ program will continue, the VCS jurisdictional baseline shall be updated and harmonized with the UNFCCC baseline and revalidated within 18 months of the UNFCCC approval.

3.11.17 Where a jurisdictional baseline has not been updated (e.g., where such baseline has expired), projects and subnational jurisdictions that have been registered under the higher-level jurisdictional REDD+ program may continue to use the higher-level jurisdictional baseline for a grace period of 18 months after such jurisdictional baseline expires. Any registered projects or lower-level jurisdictions shall develop and register a new baseline for the relevant level and shall have registered such baseline prior to the expiration of the grace period. The effective date of the new lower-level baseline shall be the expiration date of the higher-level jurisdictional baseline.

3.11.18 The scope of the jurisdictional baseline may be broadened at any time (i.e., not only at the 5 to 10 year periodic update) to include either additional REDD+ activities set out in Section 3.8, and/or carbon pools. Where such updates are undertaken separate from required periodic updates, only the additional pools or activities and associated emission factors, where necessary, may be updated. All other baseline elements (such as unrelated emission factors)

[17] Allowing such adjustments is intended to remove the perverse incentive to delay early REDD+ action due to the risk that success would result in being penalized with a lower baseline in future program crediting periods.

shall be updated only as part of required periodic updates.

3.11.19 Where the scope of the jurisdictional baseline has been expanded in advance of the required periodic update, the entire baseline shall be updated at the subsequent periodic update (i.e., all activities shall be updated, not only those activities included in the scope of the original jurisdictional baseline).

3.11.20 The scope of the jurisdictional baseline may be narrowed at the time of baseline update only where it can be demonstrated that the category, activity or carbon pool to be removed is (or has become) insignificant, or that it is conservative to exclude it and this will remain the case for the duration of the new jurisdictional baseline period. A project-specific or subnational jurisdiction-specific baseline may be developed and registered to allow smaller levels to continue claiming GHG emission reductions and removals from such eliminated activities.

3.11.21 Where any relevant grandparenting period set out in Section 3.11.13 has expired and projects or subnational jurisdictions are nested within a higher-level jurisdictional baseline (i.e., under Scenario 1 or 2), nested baselines shall be updated and revalidated, noting the following:

1) Where a subnational jurisdictional baseline is nested within a national-level jurisdictional baseline, the frequency of update of the subnational baseline shall follow the frequency of update of the national baseline. Subnational updates shall be completed and validated within a grace period of 18 months following the update of the national jurisdictional baseline. The updated jurisdictional baseline shall be used to estimate any GHG emission reductions and removals occurring during such grace period.

2) Where the project is nested within a jurisdiction, all project-based baseline components that are dependent on jurisdictional baseline components shall be updated and validated within a grace period of 18 months after the lowest-level, relevant jurisdictional baseline is updated.

3) Where a subnational jurisdiction becomes nested within a national jurisdiction, the lower-level jurisdiction shall adopt all relevant activities and carbon pools included in the higher-level baseline and these components of the lower-level baseline shall be updated and validated within 18 months of the registration of the higher-level baseline.

3.12 LEAKAGE

General

3.12.1 All relevant leakage from the jurisdiction shall be quantified. The three types of leakage (activity shifting, market leakage and ecological leakage) described in VCS document *AFOLU Requirements* shall be considered. In addition, jurisdictions shall quantify any leakage from deforestation to degradation in accordance with Section 3.12.8(3)(c)(iii) and any leakage to wetland areas in accordance with Sections 3.12.4 and 3.12.8(3)(d).

Leakage occurring outside the host country (i.e., international leakage) does not need to be accounted for or deducted from a country's domestic GHG emission reductions and removals[18], noting, however, the requirements with respect to international leakage set out in Section 3.12.6.

Projects in a jurisdiction following Scenario 1 shall follow the leakage requirements set out in VCS document *AFOLU Requirements*.

3.12.2 Leakage that is deemed *de minimis* in accordance with Section 3.9.5 does not need to be included in GHG emissions accounting.

3.12.3 GHG emissions from leakage may be determined either directly from monitoring, or indirectly when leakage is difficult to monitor directly but where scientific knowledge or research provides credible estimates of likely impacts. Jurisdictional proponents may apply the *Jurisdictional and Nested REDD+ (JNR) Leakage Tool* or may develop their own methods to account for such leakage.

3.12.4 Where a jurisdiction contains non-forested wetlands, including peatlands, the jurisdictional proponent shall identify the potential for leakage from forested wetlands to non-forested wetlands (eg where GHG emissions increase or removals decrease on non-forested wetlands), Such leakage risk shall be mitigated and procedures shall be established to account for any such leakage in accordance with Section 3.12.8. Emission factors for wetlands shall be conservative and based on empirical data or other sources published in scientific peer-reviewed literature.

3.12.5 Projects and jurisdictions shall not account for positive leakage (i.e., where GHG emissions decrease or removals increase outside the project or jurisdictional REDD+ program area due to project or jurisdictional program activities, respectively), although such emission reductions and removals will be captured (and may be credited) in the broader accounting level in which they occur, assuming that the relevant level is registered under the VCS Program or another GHG program.

National Jurisdictions (Scenario 2 and 3)

3.12.6 National jurisdictions following Scenario 2 or 3 shall identify potential sources of international leakage and mitigate leakage risk where practicable (within the country), following steps 1 and 2 set out in Section 3.12.8 on subnational leakage, but are not required to monitor and account for such leakage, as set out in Section 3.12.1.

Subnational Jurisdictions (Scenario 2 and 3)

3.12.7 Subnational jurisdictions following Scenario 2 or 3 shall establish procedures to quantify all

[18] This follows established precedent under the UNFCCC and the VCS Program, is practical, and avoids the political and technical challenges of assessing international leakage and determining attribution.

significant sources of leakage outside the jurisdiction.

3.12.8 Where subnational jurisdictions may be credited directly, leakage outside the jurisdiction shall be addressed as follows:

1) Jurisdictions shall identify the baseline drivers of deforestation or degradation and their potential for leakage.

2) Jurisdictional proponents shall develop and implement appropriate measures to avoid or reduce the risk of leakage where possible, taking into account the feasibility of such implementation within the jurisdiction, or where relevant, in neighboring jurisdictions.

3) Any residual leakage (i.e., after implementing mitigation measures) shall be accounted for as follows:

   a) Where leakage from one jurisdiction may result in an increase in GHG emissions in another jurisdiction within the same country registered under the VCS Program or another GHG program, each jurisdictional proponent shall be fully responsible for GHG emissions and reductions within its own jurisdiction, regardless of whether some emissions are the result of leakage from the other jurisdiction. Jurisdictional proponents are not required to monitor or account for any leakage in neighboring jurisdictions.

   b) Where there is a national REDD+ program in place that includes countrywide leakage monitoring and a framework for determining and assigning leakage impacts, subnational jurisdictions shall use the leakage estimates attributed to them according to the national framework.

   c) Where leakage from the jurisdiction may result in an increase in GHG emissions in a neighboring jurisdiction that does not have monitoring in place or is not registered under the VCS Program or another GHG program, such increase in GHG emissions in the neighboring jurisdiction shall be accounted for using one or more of the following methods:

      i) A leakage belt or other method (e.g., directly tracking displaced deforestation agents) of monitoring and accounting for leakage outside the jurisdiction, using a VCS methodology or tool, or a method developed by the jurisdiction. A leakage belt is an area surrounding the border of the jurisdiction that is subject to monitoring in order to quantify any leakage. Leakage mitigation activities may or may not be carried out within the leakage belts. Jurisdictions shall demonstrate that the leakage belt is correctly placed and sufficiently large to capture displaced activities, or that the leakage belt is used in conjunction with other methods such that all potential leakage is captured. Where a jurisdictional REDD+ program uses a leakage belt method for monitoring and reporting leakage a baseline for the leakage belt shall be established. Portions of the leakage belt falling in neighbouring jurisdictions shall be excluded from the leakage belt where a neighbouring jurisdictional program is registered under the VCS Program or another GHG program.

      ii) A leakage deduction tool for estimating leakage potential (i.e., *JNR Leakage Tool*).

Additional tool(s) may be developed in the future by the VCSA or by a third-party subject to approval via the VCS methodology approval process.

iii) For activity shifting leakage within the jurisdiction, identification of likely shifts in activities and monitoring of such activities that are not included in the jurisdictional baseline but that are at risk of causing leakage (e.g., where deforestation is accounted for and degradation is not, leakage may occur from areas that would have been deforested, causing degradation).

d) Where the host country contains forested or non-forested wetlands, including peatlands, procedures shall be established to account for any leakage to such wetlands from the jurisdiction, in accordance with this Section 3.12.8. Emission factors for wetlands shall be conservative and based on empirical data or other sources published in scientific peer-reviewed literature.

4) Any resulting leakage, either monitored or estimated, shall be subtracted from the total jurisdictional GHG emission reductions and removals achieved by the jurisdiction during the monitoring period.

Nested Projects (Scenario 2)

3.12.9 Jurisdictions may determine how leakage from project activities within a jurisdiction is addressed.[19]

3.12.10 Where projects and jurisdictions may be directly credited, jurisdictions shall set out clear policies and procedures for withholding leakage from projects or lower-level jurisdictions that will be registered under the VCS Program such that total GHG emission reductions and removals may be calculated appropriately. A jurisdiction may choose not to require leakage accounting from projects or lower-level jurisdictions, however it should be noted that doing so increases the risk that leakage from lower-level activities may impact the total emission reductions and removals achieved by the jurisdiction in non-project areas. Where such option is chosen, the jurisdiction shall clearly set out such policies. Jurisdictions may choose to require that projects apply the leakage requirements set out in VCS document *AFOLU Requirements* to calculate project leakage. Leakage policies set by the jurisdiction shall be developed in accordance with the stakeholder involvement requirements set out in Section 3.7.

3.12.11 Leakage from projects that have the potential to displace GHG emissions outside the jurisdiction in which they are located shall account for such leakage, and may use the [forthcoming] VCS leakage tool for nested projects, or another approved leakage tool.

[19] Such an approach provides the greatest flexibility and allows jurisdictional proponents to choose an option they deem appropriate to their jurisdiction's circumstances. This gives jurisdictional proponent's the flexibility to develop their own policies or procedures, which may include any of the options set out in Section 3.12.8.

Projects (Scenario 1)

3.12.12 Where projects are applying a jurisdictional baseline, but there is no jurisdictional REDD+ program (with crediting to the jurisdiction) registered under the VCS Program or another GHG program, projects shall follow the leakage requirements set out in VCS document *AFOLU Requirements*.

3.12.13 Projects that are adjacent to or within the vicinity of other projects such that their project or leakage areas overlap, may agree among themselves on the boundaries of their leakage belts, where such agreements avoid gaps and overlaps, and account for leakage within the agreed boundaries. Where in the future any project under such an agreement has not submitted a verification report for more than five consecutive years or such project's crediting period has ended, the remaining project(s) shall follow VCS document *AFOLU Requirements* for stand-alone projects covering leakage monitoring, accounting and reporting, or where more than one project from such an agreement remains, the continuing projects may renegotiate an agreement.

3.12.14 Where projects that are adjacent to or within the vicinity of other projects such that their project or leakage areas overlap do not define leakage belts to avoid overlap or gaps with other registered VCS projects (e.g., where the leakage belt area of the project includes the area or part of the areas of other VCS projects or their leakage belts), the following applies:

1) Where the leakage belt of new Project B overlaps with the project area of one or more already registered VCS projects (referred to individually and collectively as Project A), the following applies:

    a) Project B's leakage accounting shall exclude the project area of Project A.

    b) An excluded area shall again be included in the leakage belt area of Project B where Project A has not submitted a verification report for more than five consecutive years, or when it ends its project crediting period under the VCS Program. Any changes shall be noted in the subsequent monitoring report.

2) Where the leakage belts of two or more projects overlap and the same carbon pools are being monitored for the purpose of estimating leakage, the amount of leakage attributed to each project may be calculated as follows for the overlapping pools, where projects agree to conduct monitoring on the same (or similar) schedule:

    a) Each project shall estimate the amount of leakage that occurred per GHG emission reduction or removal generated by their project to determine the leakage ratio for each project, based on the non-overlapping leakage areas.

    b) The estimated leakage ratio shall then be used to apportion the amount of leakage between the projects, as monitored to have occurred in the areas of overlapping leakage belts. Where the amount of leakage estimated in the overlapping areas is different based on each project's monitoring results the highest estimate shall be used. For example, where two projects each have 1 tCO2e deducted for every 10 GHG emission reductions or removals generated, the leakage monitored in the overlapping belts will be

divided equally between the projects. Where Project A has a ratio of 2 leaked to 10 emission reductions or removals generated, and Project B has a ratio of 1 leaked to 10 emission reductions or removals generated, Project A will assume twice as much leakage in the overlapping area as Project B. For example, where Project A estimated 900 tCO2e leaked in the overlapping areas and Project B estimated 500 tCO2e, the amount of leakage will be assumed to be 900 tCO2e. In such a case, 600 tCO2e shall be assigned to Project A and 300 shall be assigned to Project B.

3) Where the leakage belts of two or more projects overlap, or where different carbon pools are monitored by projects within overlapping leakage areas, each project shall be responsible for individually monitoring and accounting for such pools, as applicable to their project.

3.13 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

3.13.1 Jurisdictions shall establish procedures for quantifying net GHG emission reductions and removals (the net GHG benefit), which shall be determined as the difference between the GHG emissions and removals from GHG sources, sinks and carbon pools in the jurisdictional baseline scenario and the jurisdictional REDD+ program scenario (including any emissions resulting from the implementation of jurisdictional program activities), minus leakage.

3.13.2 The full rules and procedures with respect to assignment of buffer credits are set out in VCS document *JNR Registration and Issuance Process*.

3.13.3 The number of GHG credits issued to the jurisdictional proponent is determined by subtracting out the buffer credits from the net GHG benefit associated with the jurisdiction, and subtracting any GHG emission reductions and removals issued (or to be issued) to lower nested levels (e.g., projects), where appropriate. The buffer credits are calculated by multiplying the non-permanence risk rating, determined in accordance with VCS document *JNR Non-Permanence Risk Tool*, by the total number of GHG credits that may be issued to the jurisdiction only. The full calculation process for determining the number of GHG credits jurisdictions and nested projects may be issued depends on the crediting scenario, as follows:

1) Under Scenario 1, where only projects nested within a jurisdictional baseline may be credited, project proponents shall follow the monitoring, non-permanence risk, validation, verification and registration requirements set out in the *VCS Standard, AFOLU Requirements* and *Registration and Issuance Process*.

2) Under Scenario 2, where a jurisdictional proponent and lower-level(s) may be credited directly, the following applies:

   a) Project and/or jurisdictional proponents shall calculate the total GHG credits a nested project or nested subnational jurisdiction may be issued according to the following procedure:

      i) Conduct monitoring as set out in Section 3.14.

      ii) Estimate and deduct for leakage in accordance with Section 3.12.

iii) Deduct any emission reductions and removals achieved or anticipated by grandparented lower-level activities during the (higher-level) monitoring period.[20]

iv) Apply the appropriate non-permanence risk tool, and deduct GHG credits to be contributed to the jurisdictional pooled buffer account as determined by the tool.

v) Complete verification in accordance with the procedures set out in VCS document *Jurisdictional and Nested REDD+ (JNR) Validation and Verification Process*.

vi) Where jurisdiction-level monitoring results are used to reconcile any discrepancies between monitoring levels (as set out in Section 3.14.4), projects shall use the jurisdiction-level monitoring results from the same period at least every five years to reconcile any discrepancies in accordance with Section 3.14.5.

For example, a subnational jurisdiction with nested projects conducts monitoring and verification for the period 1 January 2010 to 31 December 2014, and a nested project has issued credits for the period 15 May 2009 to 31 December 2011. Where the project subsequently conducts monitoring, it aligns with the jurisdiction and conducts monitoring for the period 1 January 2012 to 31 December 2014. The project uses the jurisdictional monitoring results to reconcile any discrepancies and subtracts (or adds) any change in emission reductions and removals as indicated by jurisdictional monitoring (compared to project monitoring results) from (or to) the total GHG emission reductions and removals achieved by the project.

vii) Where project-level monitoring results are used to reconcile any discrepancies between monitoring levels (as set out in Section 3.14.4), jurisdictions shall incorporate the monitoring results from lower levels from the same or overlapping periods.

For example, where a subnational jurisdiction with nested projects conducts monitoring and verification for the period 1 January 2010 to 31 December 2014, and a nested project has previously issued credits for the period 15 May 2009 to 31 December 2011, the project monitoring results from 1 January 2010 to 31 December 2011 shall be incorporated in the jurisdiction's results. Where the project subsequently conducts monitoring, it aligns with the jurisdiction and conducts monitoring for the period 1 January 2012 to 31 December 2014. Project results are incorporated into the jurisdictional monitoring results for the monitoring period.

viii) Project or subnational jurisdictional proponents shall complete registration and issuance in accordance with VCS document *JNR Registration and Issuance Process*.

3) Under Scenario 3, where only a single national or subnational jurisdiction may be credited (i.e., there is no direct crediting to nested subnational jurisdictions or nested projects), jurisdictional proponents shall do the following:

a) Conduct monitoring in accordance with Section 3.14.

[20] Grandparented activities receive credits directly from the VCS registry during their grandparenting period.

b) Estimate and deduct for leakage in accordance with Section 3.12.

c) Deduct any emission reductions and removals achieved or anticipated by grandparented lower-level activities during the (higher-level) monitoring period.

d) Apply the VCS document *JNR Non-Permanence Risk Tool* and deduct GHG credits to be contributed to the jurisdictional pooled buffer account as determined by the tool.

e) Complete verification in accordance with the procedures set out in VCS document *JNR Validation and Verification Process*.

f) Complete registration and issuance in accordance with the procedures set out in VCS document *JNR Registration and Issuance Process*.

3.14 MONITORING

3.14.1 Jurisdictions shall establish criteria and procedures for monitoring, and specify the data and parameters to be monitored, in accordance with the *VCS Standard*.

3.14.2 Jurisdictions shall monitor the activities and carbon pools that were selected in the jurisdictional baseline using the same or demonstrably equivalent methods to those used to set such baseline.

3.14.3 Nested projects shall follow the monitoring requirements set out in the *VCS Standard* and *AFOLU Requirements*, except where the requirements set out in this Section 3.14 take precedence.

3.14.4 Incorporating lower-level monitoring results (e.g., from projects or lower-level jurisdictions) into higher-level monitoring is considered best practice. Lower-level monitoring results from activities such as deforestation or afforestation can be used directly as part of high-level monitoring, and where such lower-level results are incorporated into higher-level monitoring results, there should not be any differences in GHG emission reductions and removals estimated at lower and higher levels. However, for other activity types (such as reductions in degradation) lower and higher levels may use different data and methods to estimate ex-ante GHG emission reductions and removals. This may result in discrepancies between emission reductions and/or removals at the lower- and higher-levels. Total GHG emission reductions and removals from the lower-level (within the same boundary, i.e., scope and carbon pools) shall be deducted from the higher-level's total emissions reductions and removals, to prevent any double counting.

To prevent discrepancies, the highest-level registered jurisdictional REDD+ program within a country shall determine which level of monitoring results will be used to reconcile any discrepancies between levels. For example, a jurisdiction may choose to designate the jurisdictional or the project-level monitoring results to be used for reconciliation.[21]

[21] A jurisdiction will be able to reach a high level of precision (low level of uncertainty) across the entirety of the forest area. However, for any subset of this area (such as a project area) uncertainty will likely be higher. This is due to

Where there are inconsistent results between higher- and lower-level monitoring, the selected level shall be used for both levels, on the assumption that selected level data are more accurate.

Where jurisdiction-level monitoring results are used to reconcile any discrepancies between monitoring levels and this reconciliation results in a negative number of GHG emission reductions and removals at the project level, a reversal will be assumed to have occurred within the project. Where project-level monitoring results are used to reconcile any discrepancies between monitoring levels and this reconciliation results in a negative number of GHG emission reductions and removals at the jurisdictional level, a reversal will be assumed to have occurred within the jurisdiction that was not captured by the higher-level monitoring.

3.14.5 The jurisdictional program description shall state which level has been selected to be used for data reconciliation. The selected level may be updated (e.g., where a different level has achieved a greater level of accuracy or precision) at the subsequent baseline update. Where the selected level has been changed, it shall be stated in the monitoring report and shall apply for future monitoring periods (only).

3.14.6 The geographic area to be monitored shall be the entire forested area of the jurisdiction, though certain areas may be excluded, as follows:

1) Where they are determined not to have been impacted by the jurisdictional REDD+ program's activities (including leakage from those activities) following coarse-scale analysis;

2) Where they have been excluded due to a significant natural disturbance or large-scale infrastructure project excluded in accordance with Section 3.11.12(5); or

3) Where their exclusion is otherwise permitted in accordance Section 3.5.4.

3.14.7 Monitoring results from higher levels may be used by lower levels where there is overlap in activities and boundaries. Such monitoring data may be used when they meet the minimum requirements in terms of accuracy and precision set out in Section 3.14.11 or shall be refined as necessary to achieve such accuracy and precision. Where possible, the higher-level jurisdiction may adopt monitoring results from lower-level jurisdictions and projects for relevant areas.

3.14.8 Monitoring and verification shall be conducted at least every five years, starting from the program start date or the end of the last monitoring period, as applicable.

3.14.9 Jurisdictional REDD+ programs shall undertake monitoring according to the following methods:

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the subset area only representing a proportion of collected ground data and to the reality that land use mapping and likely remote sensing will often be a higher resolution for a project area than for the full forest estate of a jurisdiction.

1) Land-use changes shall be determined according to IPCC *Approach 3*[22] for deforestation.

2) Degradation and enhancements in forest carbon stocks (including afforestation, reforestation and revegetation) may be monitored using direct methods (e.g., remote sensing or forest inventory) or indirect methods (e.g., survey data or statistical data on timber harvesting).

3) Any proxies used to measure land use change shall be transparently documented, and it shall be demonstrated that they are strongly correlated with actual land use change and that they can serve as an equivalent or better method (e.g., in terms of reliability, consistency or practicality) to determine land use change than direct measurement of land use change itself.

4) Any change in drivers of deforestation or degradation shall be considered to aid land use change analysis (e.g., changes in significance of drivers, changes in location of drivers) and any related changes to stratification based on such change shall be documented.

5) IPCC Tier 2 or higher methods shall be used to establish GHG emission factors, and jurisdictions shall document the precision level for each emissions factor. Defaults (e.g., IPCC or those established in the scientific literature) may be used for carbon pools representing less than 15 percent of total carbon stocks. Emission factors used in monitoring shall be consistent with those used to set the baseline.

6) Community-based monitoring methods are encouraged where appropriate and results of such monitoring shall be subject to the same accuracy assessment and uncertainty deductions as all methods.

7) Leakage monitoring, where applicable, shall follow the same requirements as project or activity class area monitoring.

3.14.10 The jurisdictional monitoring report describes all the data and information related to the monitoring of GHG emission reductions and removals. The jurisdictional proponent shall use the *JNR Monitoring Report Template* and adhere to all instructional text within the template.

3.14.11 The verification period of the jurisdictional monitoring report shall be a distinct time period that does not overlap with previous verification periods.

3.14.12 An assessment of accuracy and uncertainty shall be presented following IPCC guidelines, and accuracy and uncertainty may be quantified using Monte Carlo methods. Such assessment shall clearly state the assumptions, parameters and procedures that have significant uncertainty, and describe how such uncertainty shall be addressed. In addition, the following applies:

1) The accuracy of forest versus non-forest classification shall be at least 75 percent.

2) The accuracy of indirect GHG emission calculations (e.g., those based on areas of deforestation concessions, volumes of timber or fuel wood collected) shall be at least 75 percent.

[22] See the most recent version of the GOFC-GOLD Sourcebook for further information on Approach 3.

3) Where land-based accounting is elected by jurisdictions following Scenario 2 or 3, historical emissions shall be calculated from changes in stocks with a confidence interval of 95 percent. Where the width of the confidence interval exceeds 50 percent of the estimated value, an appropriate confidence deduction shall be applied.[23]

Note - The 50 percent threshold takes precedent over the thresholds set out in the VCS Standard, though all other requirements set out the VCS Standard with respect to uncertainty apply.

4) Where activity-based accounting is elected, the GHG emission and removal factors shall have a precision that meets the requirements set out in the *VCS Standard*.

For example, in Province A significant deforestation pressure exists in a given stratum. Field monitoring is conducted to develop an emission factor for activity–based accounting. The carbon stock is equivalent to 550 tCO2/ha, post deforestation land use is pasture with no remnant trees and clearance does not involve biomass burning.

High measurement effort is applied and the 95 percent confidence interval is equal to 20 percent of the mean (110 tCO2e/ha), which is within the allowable 30 percent (as set out for activity-based accounting in the VCS Standard) and so no deductions are required.

Alternatively, a lower measurement effort could be applied and the resulting uncertainty is reflected in a 95 percent confidence interval equal to 50 percent of the mean (275 tCO2e/ha). Given the allowable uncertainty of 30 percent of the mean (165 tCO2e/ha), an appropriate (i.e., conservative) uncertainty deduction could be based on the half width of the confidence interval: (275 – 165) / 2 = 55. This would give an emission factor in the baseline case of 550 – 55 = 495 tCO2e/ha, and in the monitored case 550 + 55 = 605 tCO2e/ha.

3.14.13 Where measurement plots or data from research plots are used to calibrate belowground biomass, soil carbon and dead wood decay models, sound and reliable methods for monitoring changes in carbon stocks shall be used, as set out in VCS document *AFOLU Requirements*.

3.14.14 Monitoring reports shall cover the entire jurisdiction, and any leakage belts where applicable, and shall be verified at least every five years from the program start date.

3.14.15 Nested projects and nested subnational jurisdictional REDD+ programs may undergo periodic monitoring and verification, and request issuance of credits, at different intervals than the higher (jurisdictional) level. However, such projects and subnational jurisdictional proponents shall reconcile monitoring results with the higher-level at least once every five years, except when operating within the grandparenting period, in accordance with Section 3.11.15. For example, where a jurisdictional proponent conducts monitoring and verification every five years starting in

[23] An example of a type of land-based approach is the US Government's Forest Inventory and Analysis (FIA) program which forms the basis for US reporting to the UNFCCC. The FIA costs US$80 million each year and achieves at the State level (large jurisdiction) a sampling error equivalent to the 67% confidence level, as opposed to the 95% confidence level required for projects by the VCS Standard. It should be noted that even at this high cost the US FIA does not include interior Alaska where access is limited, as is the case in many areas of tropical forests.

2015, nested projects that receive credits directly from the VCS registry may conduct monitoring more frequently, but they shall also report to the jurisdiction in the five year intervals used by the jurisdictional proponent and reconcile monitoring results.

3.15 NON-PERMANENCE RISK AND NATURAL DISTURBANCES

3.15.1 Jurisdictional REDD+ programs and nested projects shall prepare a non-permanence risk report in accordance with VCS document *JNR Non-Permanence Risk Tool* or *AFOLU Non-Permanence Risk Tool*, respectively, at both validation and verification. Where jurisdictional programs or projects are not validated and verified simultaneously, having their initial risk assessments validated at the time of validation will assist VCU buyers and sellers by providing a more accurate early indication of the number of VCUs programs and projects are expected to generate. Non-permanence risk reports shall be prepared using the appropriate project or jurisdictional *VCS Non-Permanence Risk Report Template*, which may be included as an annex to the jurisdictional program, project description or monitoring report, as applicable, or provided as a stand-alone document.

3.15.2 Buffer credits shall be deposited in the jurisdictional pooled buffer account based upon the non-permanence risk report assessed by the validation/verification body. Buffer credits are not VCUs and cannot be traded.

Projects registered prior to the registration of a jurisdictional REDD+ program that includes the project area shall transfer their existing buffer credits to the jurisdictional buffer pool once such a jurisdictional program has been registered.

Jurisdictional proponents may choose to contribute a higher proportion of credits than that determined by the VCS *JNR Non-Permanence Risk Tool* (e.g., to soften the impact of any need to repay the buffer in the event of a reversal in the future). Any deduction of additional buffer credits must take place after the quantity of buffer credits determined by the application of the *JNR Non-Permanence Risk Tool* has been deducted from the jurisdiction's net GHG benefit.

3.15.3 Where the jurisdictional proponent has not and does not intend to seek VCU issuance (i.e., in Scenario 2, where projects are nested in a jurisdiction in which the jurisdictional proponents have chosen not to seek VCU issuance), the jurisdictional proponent shall deposit buffer credits into the jurisdictional pooled buffer to cover potential reversals in non-project areas. The portion of credits that shall be deposited will be determined in accordance with the VCS document *JNR Non-Permanence Risk Tool*.

3.15.4 Recognizing that non-permanence risk ratings may change over time, jurisdictional REDD+ programs and nested projects shall perform their non-permanence risk analyses at every verification event. Jurisdictional programs and projects that demonstrate their longevity, sustainability and ability to mitigate risks are eligible to receive back a portion of the withheld buffer credits, which are released from the jurisdictional pooled buffer account and issued as VCUs. The full rules and procedures with respect to the release of buffer credits are set out in

VCS document *JNR Registration and Issuance Process*.

3.15.5 Assessment of non-permanence risk analyses may be conducted by the same validation/verification body that conducts validation or verification of the jurisdictional REDD+ program or project, and at the same time. The rules and requirements for the process of assessment by validation/verification bodies are set out in VCS document *AFOLU Requirements*.

3.15.6 Where an event occurs that is likely to qualify as a loss event (see VCS document *Program Definitions* for definition of loss event) and VCUs have been previously issued, the entity(s) that has experienced a potential loss (i.e., the project proponent(s) or jurisdictional proponent(s)) shall prepare and submit a loss event report to the VCS registry administrator, as follows:

1) The loss event report shall be prepared using the appropriate project or jurisdictional *VCS Loss Event Report Template*. It shall include a conservative estimate of the loss of previously verified emission reductions and removals due to losses in carbon stocks from the project or jurisdiction, based on monitoring of the full area affected by the loss event.

2) The loss event report shall be accompanied by a loss event representation signed by the project or jurisdictional proponent, as appropriate, and representing that the loss estimate is true and accurate in all material respects. The template for the loss event representation is available on the VCS website.

3) The loss event report shall be submitted to the VCS registry administrator within two years of the loss event. Where a loss event report is not submitted within two years of the date the loss event occurred, the project or jurisdiction shall no longer be eligible to issue VCUs, except where it can be demonstrated the loss was not detected (e.g., it was detected at the subsequent monitoring event, that may have been more than two years after the event).

4) The VCS registry administrator shall put buffer credits from the jurisdictional pooled buffer account on hold, in an amount equivalent to the estimated loss stated in the loss event report.

3.15.7 At the verification event subsequent to the loss event, the monitoring report shall restate the loss from the loss event and calculate the net GHG benefit for the monitoring period in accordance with Section 3.13.3. In addition, the following applies:

1) Where the net GHG benefit of the jurisdiction, compared to the baseline, for the monitoring period is negative, taking into account emissions, removals and leakage from all (VCS) activities within the jurisdiction (e.g., REDD and ARR), a reversal has occurred and buffer credits equivalent to the reversal shall be cancelled from the jurisdictional pooled buffer account, as follows:

   a) Where the total reversal is less than the number of credits put on hold after the submission of the loss event report, the VCS registry administrator shall cancel buffer credits equivalent to the reversal. Any remaining buffer credits shall be released from their on-hold status (though remain in the jurisdictional pooled buffer account).

   b) Where the reversal is greater than stated by the loss event report, the full amount of

buffer credits put on hold in response to the submission of the loss event report shall be cancelled, and additional buffer credits from the jurisdictional pooled buffer account shall be cancelled to fully account for the reversal.

2) Where the net GHG benefit for the monitoring period is positive, taking into account emissions, removals and leakage from all (VCS) activities within the jurisdiction (i.e., all losses have been made up over the monitoring period), a reversal has not occurred and buffer credits put on hold after the submission of the loss event report shall be released from their on- hold status (but shall remain in the jurisdictional pooled buffer account).

3) Where the loss is due to natural disturbance (see VCS document *Program Definitions* for definition of natural disturbance), except for those associated with certain geologic and weather-related events, as set out in Section 3.14.10 (noting that both are also excluded from baselines), the following applies:

   a) All GHG emissions (including anthropogenic and non-anthropogenic) shall be accounted for.

   b) Where GHG emissions resulting from natural disturbances are significant (i.e., accounting for more than five percent of total emission reductions and removals generated within the jurisdiction during a given monitoring period) and infrequent (i.e., not captured in the jurisdictional baseline period), affected areas shall be identified, and gross emissions from these disturbances shall be accounted for by cancelling the same number of buffer credits from the jurisdictional pooled buffer account. Such natural disturbance emissions will be accounted for and addressed through the buffer, rather than being subtracted from the net emissions reductions and removals generated within the jurisdiction. This will prevent such losses from affecting the number of credits available to REDD+ participants (including jurisdictional and project proponents).

   c) Removals (e.g., sequestration) from regrowth (whether natural or assisted) in the area affected by such natural disturbances shall be monitored and accounted for. Any emissions reductions or removals achieved from such areas shall be contributed to the jurisdictional buffer pool, to replenish the pool, rather than issued as tradable credits (VCUs).

   d) To maintain solvency of the buffer, no more than 20 percent of the credits contributed to the pool by the jurisdictional proponent will be cancelled in a single year due to reversals from natural disturbances. Instead, natural disturbance losses individually or collectively exceeding this 20 percent threshold shall be compensated for over time; cancelling up to 20 percent of the buffer pool each year until the loss has been fully accounted for.

3.15.8 At a verification event where a reversal has occurred, the following applies:

1) In order to track performance across the entire jurisdiction, any buffer credits cancelled from the jurisdictional pooled buffer account shall be logged as subtractions from the net total number of credits the entity that experienced the reversal has contributed to date to the jurisdictional pooled buffer account. Where the entity that experienced the reversal has

contributed insufficient credits to fully cover the loss, then any shortfall shall be logged as subtractions against the buffer contribution made to date by the next jurisdictional level up participating in the VCS Program (whether subnational or national) until the loss has been fully accounted for or no higher credited level exists.

2) Jurisdictions or projects where reversals have occurred shall make up any buffer shortfall (i.e., net deficit) that has occurred due to the loss by replenishing the jurisdictional pooled buffer account with future GHG credits before being issued further VCUs. As such replenishments are made, the buffer tracking logs of all the affected jurisdictional levels (as set out in Section 3.15.8(1) above) shall be credited accordingly.

   For example, a project has contributed 100 credits into the jurisdictional pooled buffer account and the jurisdiction above it has contributed 500 credits. Where the project experiences a reversal of 150 credits, this amount would be cancelled from the jurisdictional pooled buffer account. For tracking purposes, the project would now show a net buffer contribution of -50 credits, which would have to be paid back (with subsequent GHG credits) before the project receives any further VCUs. Until the project's -50 deficit is remedied, the jurisdiction above the project would show a net buffer contribution of 450 (i.e., 500-50). Were such jurisdiction subsequently to experience a net loss of more than 450 credits then it would not receive any further VCUs until the shortfall had been remedied. Note that this accounting approach places primary replacement responsibility on the non-performing entity, but also provides incentives for higher-level jurisdictions not to approve projects or subnational jurisdictional REDD+ programs where reversal risks are not managed effectively.

3) Where project and jurisdictional proponents may be credited directly (i.e., under Scenario 2), in the event of a *reversal*[24] in non-project areas of a jurisdiction, the reversal shall be handled as follows to avoid penalising performing entities:

   a) Buffer credits equivalent to the reversal shall be cancelled from the jurisdictional pooled buffer account.

   b) The VCS registry shall issue VCUs to the (lower-level) performing entities in an amount equal to the number of GHG emissions reductions achieved.

      Note - Such rules apply *mutatis mutandis* where reversals occur in project areas and would otherwise result in a crediting shortfall to jurisdictions. Such rules also apply to reversals within registered national jurisdictions that include nested subnational jurisdictional REDD+ programs

   c) Where the jurisdictional proponent has previously been issued VCUs, the jurisdictional proponent shall replenish the jurisdictional pooled buffer account in accordance with Section 3.15.8(2) above.

[24] The term reversal is used here even though a jurisdiction may not have elected to seek VCU issuance (e.g., when a jurisdictional REDD+ program only credits projects and not jurisdictions). In such cases, the jurisdictional buffer pool will still cover the loss in non-project areas regardless of whether the jurisdiction itself has been issued VCUs.

4) Where 25 percent of the deficit from a reversal recorded in a single monitoring report is paid back, and where there are no prior reversals for which the buffer account has not been fully replenished, jurisdictional proponents may request VCU issuance for 50 percent of subsequent GHG emissions reductions or removals achieved and shall contribute 50 percent to the jurisdictional pooled buffer account until the buffer has been fully replenished (for all credits cancelled due to the reversal).[25]

Note - Nested accounting frameworks have a potential risk for crediting shortfalls where one level performs but the other does not (e.g., where jurisdictional non-performance results in too few GHG emission reductions and removals across the jurisdiction to credit projects). However, where there are multiple crediting levels (i.e., under Scenario 2) and a reversal is compensated via the jurisdictional pooled buffer account, credit shortfall risk disappears based on the following assumptions and requirements:

1) Where there is underperformance in non-project areas, assuming no reversals, GHG credits will still be created in these areas (though the total number may be smaller than expected). The full amount of GHG credits can be issued to projects (based on their individual performance) with the remainder of GHG credits generated issued to the jurisdictional proponent. In such a case, there is no credit shortfall risk. For example, a jurisdictional proponent expects to generate 50,000 GHG credits in non-project areas but only generated 10,000. Projects generated a total of 50,000 GHG credits within the jurisdiction, with a total jurisdiction-wide achievement of 60,000. In this case, 10,000 VCUs are issued to the jurisdiction and 50,000 to the projects.

2) Credit shortfall risk only exists where there is a reversal at one level that results in fewer GHG credits generated across the jurisdiction compared to the sum of the individual claims. The reversal is compensated via the jurisdictional pooled buffer account, which should result in sufficient VCUs available for issuance to performing entities. For example, a jurisdiction generates 50,000 GHG credits in non-project areas but a reversal of 10,000 in a project results in only 40,000 GHG credits being generated across the jurisdiction. The reversal of 10,000 is addressed via the buffer account, with no VCUs being issued to the project and 50,000 VCUs being issued to the jurisdictional proponent.

3) VCUs issued to lower-levels are deducted from higher-level estimates. This means that where there is a discrepancy between the higher-level jurisdiction's verified monitoring results and the sum of the smaller levels, the error (and potential loss) is assigned to the higher-level. For example, where a jurisdictional REDD+ program generates 10,000 GHG credits across the jurisdiction but does not record any reversals in non-project areas, and the sum of the project GHG credits is 11,000, a reversal of 1,000 is presumed to have occurred in the non-project areas. The presumed reversal in non-project areas is addressed via the

[25] After experiencing reversals, it is important to promote continued jurisdictional participation in the REDD+ program (and reduce default risks), where continued progress is demonstrated towards reducing emissions. Therefore, jurisdictions are permitted to repay the buffer account over time, rather than fully replenishing the account immediately.

jurisdictional pooled buffer account (by cancelling 1,000 buffer credits) and the projects receive 11,000 VCUs.

Where a jurisdiction has a single crediting level (i.e., under Scenarios 1 and 3) there is no credit shortfall risk within the jurisdictional program, with all VCUs going to either the projects (in Scenario 1) or the jurisdiction (in Scenario 3). There may, however, be a credit shortfall risk in Scenario 3 associated with a jurisdictional proponent not transferring benefits or GHG credits down to lower levels where there is a reversal or underperformance within the jurisdiction, but this risk is transferred to and assumed by the jurisdictional proponent and its participants.

3.15.9 As set out for projects in VCS document *Registration and Issuance Process*, where a project or jurisdictional proponent fails to submit a verification report within five or ten years from the previous verification event, a percentage of buffer credits are put on hold under the conservative assumption that the carbon benefits represented by buffer credits held in the AFOLU and jurisdictional pooled buffer accounts may have been reversed or lost in the field. Where a project or jurisdictional proponent fails to submit a verification report within 15 years of the previous verification event, buffer credits are cancelled under the same assumption. The full rules and requirements with respect to the cancellation and holding of buffer credits are set out in VCS document *Registration and Issuance Process*.

3.15.10 Where a jurisdiction following Scenario 2 reports net reversals in 75 percent or more of monitoring reports over a ten year period or fails to submit a verification report within seven years of the previous verification, it shall be assumed that the jurisdictional REDD+ program is not functioning effectively and the following shall apply:

1) Lower levels (i.e., nested projects or jurisdictions) may continue to be credited for their GHG emissions reductions or removals, compensated by cancellation of the equivalent number of credits from the jurisdictional pooled buffer account, and only until such time as the net buffer contributions (including credits contributed by the jurisdictional proponent and all participants within it) are exhausted or until 10 years after the defaulting jurisdictional proponent last submitted a verification report, whichever occurs sooner. At such point, no further VCUs shall be issued to projects or sub-jurisdictions nested within the non-performing jurisdiction until the jurisdictional underperformance has been remedied.

2) Absent jurisdictional monitoring, lower-level jurisdictions may operate as the new highest-level jurisdiction, or where no lower-level jurisdiction is participating, projects may operate independently (under VCS project requirements). Subnational jurisdictional proponents and projects pursuing this option shall be revalidated as a new subnational jurisdiction or project respectively (e.g., including establishing a new baseline and following all other relevant requirements).

3.15.11 Any remaining balance of buffer credits is cancelled at the end of the project crediting period or program crediting period.

3.15.12 Although buffer credits are cancelled to cover carbon known or believed to be lost, the VCUs

already issued to projects and jurisdictions that subsequently experience a reversal are not cancelled and do not have to be cancelled. Rather, all VCUs issued to REDD+ projects and jurisdictions, as with all projects, are permanent. The VCS approach provides environmental integrity because the AFOLU and jurisdictional pooled buffer accounts are managed to ensure losses from individual project and jurisdictional REDD+ program failures are covered, and the net GHG benefits across the entire pool of REDD+ projects and jurisdictional programs will be greater than the total number of VCUs issued.

4 | Government Approval, Validation and Verification Requirements

4.1 APPROVALS

4.1.1 Where any domestic regulations governing government approval of any element covered by the jurisdictional REDD+ program exist (such as government approval of a jurisdictional baseline or approval of projects), evidence that such domestic regulation has been complied with shall be provided. Where such regulations are in place, they may substitute for the rules and requirements set out below. Where any element requiring approval is not covered by domestic regulation, the following applies:

1) With respect to the approval of jurisdictional baselines, the following applies:

   a) Where the entity submitting a jurisdictional baseline for registration is the national-level jurisdictional approval authority, or a subnational-level jurisdiction that has legislated control or authority over the jurisdiction covered by such baseline (including control over forest and environmental management), there is no requirement to show evidence of approval from higher levels of government (e.g., the national government does not need to provide a no-objection letter; see VCS document *Program Definitions* for definition of no-objection letter). For example, a subnational government agency with control over forest and environmental management may register the jurisdictional REDD+ program or jurisdictional baseline without a no-objection response from the national government. However, such jurisdictional proponents shall follow the stakeholder consultation requirements set out in Section 3.7, including consultation with any national jurisdictional approval authority.

   b) Where the jurisdictional proponent has not legislated control or authority over the jurisdiction covered by the baseline, the jurisdictional proponent shall secure a no-

objection letter from the appropriate authority(s). For example, a subnational jurisdiction without full control over forest and environmental management may submit a jurisdictional baseline for registration where such jurisdictional proponent has received a no-objection letter from the appropriate authority(s). Alternatively, an NGO (or other implementation partner) may submit a jurisdictional baseline for registration where it has been recognized as the authorized representative of the jurisdiction, and demonstrates it has received a no-objection letter.

2) Where nested projects can be credited directly (i.e., under Scenario 2), they shall follow any approval procedures set out under the jurisdictional REDD+ program. Where no such approval procedures have been set out, projects shall secure a no-objection letter from the jurisdictional approval authority.

3) Where projects are located within a jurisdiction that has a jurisdictional baseline only (i.e., following Scenario 1), they shall follow any approval procedures set out in relevant laws and regulations. Where no such laws or regulations exist, approval from the jurisdictional approval authority is not required.

4.2 VALIDATION AND VERIFICATION OF NON-PERMANENCE RISK ANALYSIS

4.2.1 The non-permanence risk analysis shall be assessed by a validation/verification body in accordance with VCS document *AFOLU Requirements*.

4.3 VALIDATION AND VERIFICATION OF PROGRAMS

4.3.1 The full validation and verification process for jurisdictional REDD+ programs is set out in the VCS document *JNR Validation and Verification Process*.

4.4 REGISTRATION

4.4.1 Jurisdictional REDD+ programs, including baselines registered separately under Scenario 1, may only be submitted to the VCS registry by jurisdictional government entities or agencies that qualify as jurisdictional proponents (see definition of jurisdictional proponent). National jurisdictional proponents may register national and/or subnational jurisdictional programs. Subnational jurisdictional proponents may register only their own jurisdiction's program. Note that baselines (or other parts of the jurisdictional program) may be developed by non-governmental organizations or other partners, but such partners may not submit such elements for registration, unless they have been designated as the authorized representative by the jurisdiction.

4.4.2 The full rules and requirements with respect to the registration of jurisdictional REDD+ programs are set out in VCS document *JNR Registration and Issuance Process*.

APPENDIX 1: COMPARISON OF IPCC, UNFCCC AND VCS COMPONENTS OF REDD+

IPCC categories	UNFCCC REDD+ activities	Broad VCS jurisdictional and nested REDD+ activities	Major activities	Broad VCS project activities	Specific VCS project activities
Conversion of forest to non-forest	RED (Reducing Emissions from Deforestation)	Reducing Emissions from Deforestation	Reducing deforestation (conversion of forest to non-forest).	REDD (Reduced Emissions from Deforestation and Degradation)	APD (avoided planned deforestation)
					APD + RWE (avoided planned deforestation plus wetland restoration)
					APD + CIW (avoided planned deforestation and wetland conservation)
					AUD (avoided unplanned deforestation)
					AUD + RWE (avoided unplanned deforestation plus wetland restoration
					APD + CIW (avoided planned deforestation and wetland conservation)
Forests remaining as forests	REDD (Reducing Emissions from Degradation)	Reducing Emissions from Degradation	Reducing emissions from forests remaining forests.		AUD**D** (avoided unplanned degradation)
					AUD**D** + RWE (avoided unplanned degradation plus wetland restoration)
					AUD**D** + CIW (avoided unplanned degradation and wetland conservation)
				IFM (Improved Forest Management)	RIL (reduced impact logging)
					LtPF (logged to protected forest)
					ERA (extended rotation age)
					IFM + RWE (improved forest management plus wetland restoration)

					IFM + CIW (improved forest management and wetland conservation)
	REDD+ (Sustainable management of forests and enhancement of forest carbon stocks)	Enhancement of forest carbon stocks	Increasing removals from forests remaining forests		LtHP (low productive to high-productive forest)
				ARR (Afforestation, Reforestation and Revegetation)	ARR (afforestation, reforestation and revegetation)
					ARR + RWE (afforestation, reforestation and revegetation plus wetland restoration)
Conversion of non-forest to forest			Increasing conversion to forests.		ARR (afforestation, reforestation and revegetation)
					ARR + RWE (afforestation, reforestation and revegetation plus wetland restoration) and wetland conservation)

APPENDIX 2: DOCUMENT HISTORY

Version	Date	Comment
v3.0	4 Oct 2012	Initial version released under *VCS Version 3*.
v3.1	8 Oct 2013	Main updates (all effective on issue date) 1) Added footnote to clarify use of the term *jurisdictional program description* in the document (Section 1). 2) Clarified that readers *shall* use the most current version of this document (Section 1). 3) Clarified that Scenario 1 jurisdictions shall use the *VCS Jurisdictional Baseline Description Template* (Section 3.2.1). 4) Included requirement for jurisdictional *no-objection*, where relevant, to reflect the requirements in Section 4.1 (Sections 3.2.2 and 3.5.9). 5) Included specification on *program sensitive information* (Section 3.2.2). 6) Removed requirement for estimation of GHG emission reductions and/or removals at validation (formerly Section 3.2.3). 7) Clarified requirements for excluding emission sources from the jurisdictional program boundary (Section 3.9.5). 8) Clarified that historical rates are for gross (not net) deforestation (Section 3.11.6). 9) Removed reference to use of remote sensing imagery for estimating GHG emissions (Sections 3.11.8 and 3.11.9). 10) Allowed spatial resolution and minimum mapping unit size to be consistent with baseline established in national law (Sections 3.11.8(1) and 3.11.8(2)). 11) Provided further clarification on development of historical average and trend baselines (Section 3.11.12(1)). 12) Clarified relevant time period for alternative jurisdictional baselines (Section 3.11.12(1)). 13) Replaced *Jurisdictional baselines* with *Alternative baseline scenarios* (Section 3.11.12(2)). 14) Moved the requirement that the jurisdictional program must select the most plausible jurisdictional baseline from the note in Section 3.11.11(2) to the requirements in Section 3.11.12(1). 15) Corrected typo in example and clarified that projects may adopt the jurisdictional baseline before end of grandparenting period (Section 3.11.14(1)). 16) Clarified that requirements for reconciling baselines apply to grandparented project baselines as well as jurisdictional baselines (Section 3.11.14). 17) Corrected frequency with which jurisdictional baselines should be updated to ensure consistency with Section 3.11.2 (Section 3.11.16 and 3.11.18). 18) Clarified where leakage requirements refer to leakage at the project versus jurisdictional scales (Section 3.12). 19) Included new requirements with respect to leakage to wetlands (Section 3.12.4 and 3.12.8(3)). 20) Updated references to *forthcoming documents* (throughout). 21) Made references to jurisdictional programs consistent, and made other minor edits and clarifications to text and grammar (throughout).
v3.2	30 Oct 2014	Main updates (all effective on issue date): 1) Clarified reference to *standalone* and *nested* projects (Sections 2.1.1(1)(d) and

		3.6.6); clarified a reference to *standalone project activities* (Section 3.11.14(3)). 2) Replaced the list of information required to be included in the *JNR Program Description* and *JNR Monitoring Report* with a reference to the instructions in those templates (Sections 3.2.1, 3.2.2 and 3.14.10). 3) Clarified that, where jurisdictions follow Scenario 1, no justification is required for the jurisdictional baseline start date (Section 3.3.1). 4) Added flexibility with respect to the specification of the start date of a jurisdictional program (Section 3.3.1). 5) Clarified the difference between jurisdiction level and project level non-permanence risk assessments (Section 3.4.1). 6) Clarified that the maximum program crediting period is 10 years (Section 3.4.1). 7) Added requirements to address emissions trading programs and other binding limits and double counting (Sections 3.6.4 and 3.6.5). 8) Ensured consistent use of the term *net GHG benefit* (Sections 3.6.6, 3.6.7, 3.13.1 and 3.13.3). 9) Clarified requirements with respect to complying with UNFCCC decisions on safeguards (Section 3.7.2). 10) Included more specific requirements regarding the design of the grievance and concern mechanism (Section 3.7.3). 11) Added requirements for jurisdictions to account for degradation using Tier 1 methods in certain cases (Section 3.8.2(2)). 12) Clarified that *de minimis* exclusions must be demonstrated and justified at validation only (Section 3.9.6). 13) Clarified that jurisdictional proponents are responsible for emissions across the entire jurisdiction, and therefore have the authority to manage approval of nested projects (Section 3.10.3). 14) Added requirements to allow for spatially overlapping activities where measures are in place to ensure no double counting occurs (Section 3.11.3). 15) Added a requirement for jurisdictional proponents to demonstrate consistency between the data and methods used to develop the jurisdictional baseline and the country's existing or emerging GHG inventory (Section 3.11.4). 16) Corrected reference to the historical reference period to allow for periods other than 10 years (Section 3.11.8(4)). 17) Added greater flexibility with respect to addressing data gaps in land cover maps (Section 3.11.8(5)). 18) Added a requirement for the use of a historical average baseline when the historical trend is more plausible, as long as the historical average is more conservative (Section 3.11.12). 19) Clarified that alternative options may be used to set the jurisdictional baseline beyond those already specified in the requirements (Section 3.11.12(2)). 20) Corrected misleading language around the method of spatial location of deforestation activities (Section 3.11.12(3)). 21) Updated the baseline period from *10 years* to *between 5 to 10 years* (Section 3.11.12(5)). 22) Allowed the use of procedures consistent with those used in the initial jurisdictional baseline development for updating the baseline, thus allowing for technological developments (Section 3.11.16(2)). 23) Clarified that jurisdictions are required to deduct the emission reductions and

		removals *achieved or anticipated* by lower-level activities (Sections 3.6.6, 3.6.7 and 3.13.3(3)(c)). 24) Clarified requirements regarding reversals and reconciliation of project and jurisdictional level monitoring (Section 3.14.4). 25) Clarified that verification periods may not overlap (Section 3.14.11). 26) Clarified that Monte Carlo methods may be used in the quantification of accuracy and uncertainty (Section 3.14.12). 27) Clarified the order of operations for deduction of additional buffer credits (Section 3.15.2). 28) Ensured consistent use of the phrase *emission reductions and/or removals* (throughout).
v3.3	19 Oct 2016	Main updates (all effective on issue date, unless otherwise stated): 1) Replaced term *right of use* with *program ownership* or *project ownership*, or removed entirely, as appropriate (Sections 2.1.1(2)(f), 2.1.1(3), 3.5.4, 3.6.1, 3.6.2, 3.6.3)
v3.4	21 Jun 2017	Main updates (all effective on issue date, unless otherwise stated): 1) Clarified that the definition of 'loss event' shall be based on losses of previously verified emission reductions and removals (Section 3.15.6(1))

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