Jurisdictional & Nested REDD+

JNR Requirements

Scenario 2

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Verra supports climate action and sustainable development through the development and management of standards, tools and programs that credibly, transparently and robustly assess environmental and social impacts, and drive funding for sustaining and scaling up these benefits. As a mission-driven, non-profit (NGO) organization, Verra works in any arena where we see a need for clear standards, a role for market-driven mechanisms and an opportunity to achieve environmental and social good.

Verra manages a number of global standards frameworks designed to drive finance towards activities that mitigate climate change and promote sustainable development, including the Verified Carbon Standard (VCS) Program and its Jurisdictional and Nested REDD+ framework (JNR), the Verra California Offset Project Registry (OPR), the Climate, Community & Biodiversity (CCB) Standards, the Sustainable Development Verified Impact Standard (SD VISta) and the Plastic Waste Reduction Program (Plastic Program). Verra is also developing new standards frameworks, including LandScale, which will promote and measure sustainability outcomes across landscapes. Finally, Verra was a founding member of the Initiative for Climate Action Transparency (ICAT), which helps countries assess the impacts of their climate actions and supports greater transparency, effectiveness, trust and ambition in climate policies worldwide. Today Verra remains engaged with the ICAT in an advisory role.

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CONTENTS

This is not the current version of this JNR Program document. The current version is at: https://verra.org/programs/jurisdictional-nested-redd-framework/jnr-program-details/

This is not the current version of this JNR Program document. The current version is at: https://verra.org/programs/jurisdictional-nested-redd-framework/jnr-program-details/

1 INTRODUCTION

The *JNR Scenario 2 Requirements* provide the VCS Program requirements for developing jurisdictional REDD+ programs that include nested projects and lower-level jurisdictional programs. They include requirements for jurisdictional boundaries, crediting periods, eligible activities, GHG sources and carbon pools, forest reference emission level (FREL) determination, allocation of the FREL to projects and lower-level jurisdictional programs, leakage calculations, monitoring, GHG emission reductions calculations, permanence, and verification. The *JNR Scenario 2 Requirements* are intended to assist governments, private entities, civil society organizations, local stakeholders, and validation/verification bodies in developing and auditing jurisdictional programs that contain all the key elements of REDD+ under the UNFCCC[1] and include nested projects and/or lower-level jurisdictional programs.

The *Jurisdictional and Nested REDD+ (JNR) Requirements* (comprised of the *Jurisdictional and Nested REDD+ Guide* and the three scenario modules, including this document *the JNR Scenario 2 Requirements*) are the overarching program documents for the VCS JNR Program and establish the rules and requirements for all jurisdictional and nested carbon accounting and crediting options. In addition to the requirements set out in this document and the *Jurisdictional and Nested REDD+ Guide*, jurisdictional programs and nested projects shall adhere to all applicable VCS Program requirements and rules set out in the VCS Program documents. Readers are referred to the *VCS Program Guide*, the *VCS Standard*, *the VCS Methodology 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 Methodology Requirements* and it requires 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. For example, where the *VCS Methodology Requirements* states, "The methodology shall establish criteria and procedures for monitoring, which shall cover the following…", this shall be read as "The jurisdictional program description shall establish criteria and procedures for monitoring…".

Nested projects must follow the rules and requirements set out in this document and must also follow the *VCS Standard* and the applied methodology, except where the requirements set out in this document conflict with the *VCS Standard* or applied methodology, in which case this document takes precedence. Where certain requirements apply to both projects and lower-level jurisdictional programs, such requirements apply *mutatis mutandis* (e.g., where the term "project" is used it shall be understood as "lower-level jurisdictional program"), unless otherwise noted.

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[1] As described in paragraph 71 of the UNFCCC decision 1/CP.16.

1.1 Version

All information about version control under the VCS Program is contained in the *VCS Program Guide*.

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

Previous versions of the *JNR Requirements* may have included different rules and requirements than those set out in this version. Previous versions of the *JNR Requirements* and other VCS Program documents are archived and available on the Verra website.

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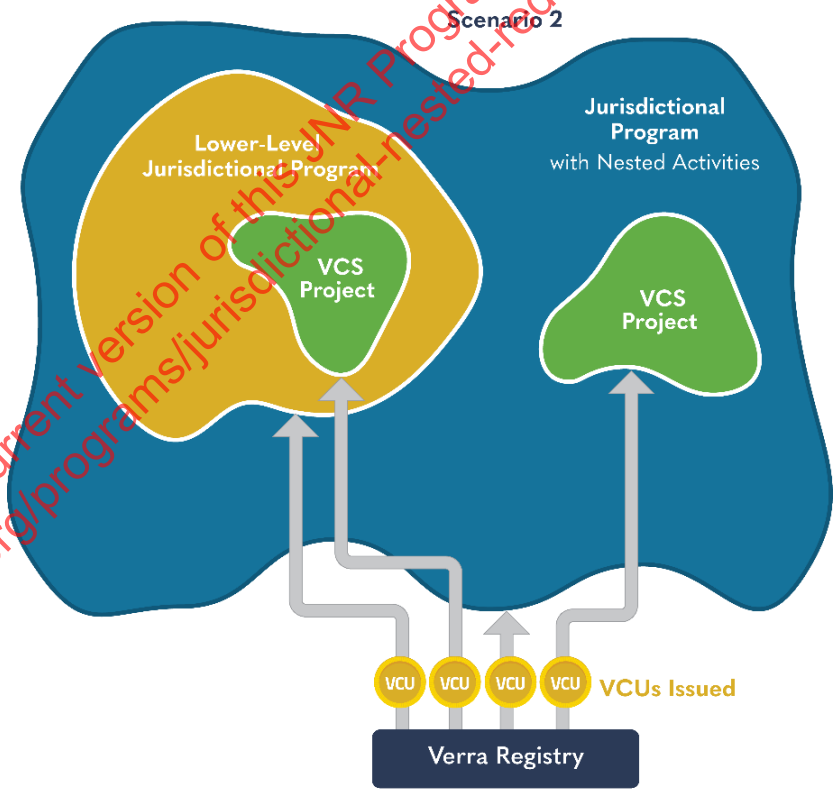
2 OVERVIEW OF SCENARIO 2

2.1 Overview

In jurisdictional programs developed under Scenario 2, carbon accounting is conducted at the jurisdictional level and at the nested project and/or lower-level jurisdictional level, and credits may be issued to both the jurisdictional program and nested REDD+ projects and programs (referred to as Scenario 2a). Alternatively, where the jurisdictional proponent has established the basic elements for REDD+ implementation under the UNFCCC,[2] but does not intend to generate or claim carbon credits, the jurisdictional proponent may decide that only nested projects and/or lower-level jurisdictional programs may be credited (referred to as Scenario 2b; see Sections 3.1.6 to 3.1.10 for more detail).

Diagram 1, below, provides an overview of the carbon accounting and crediting pathways under Scenario 2. Box 1 and Box 2, below, provide examples of the crediting options for jurisdictional programs developed following these *JNR Scenario 2 Requirements*.

Diagram 1. Overview of Scenario 2



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[2] As described in paragraph 71 of the UNFCCC decision 1/CP.16.

Box 1: Example of a Jurisdictional Program with Direct Crediting to the Higher-level Jurisdictional Program, Nested Projects and/or Lower-Level Jurisdictional Programs (referred to as Scenario 2a).

The government of Country A develops a jurisdictional program. The government of Country A intends to request issuance of VCUs for GHG emission reductions achieved across the entire jurisdiction by the REDD policies and programs it implements and seeks to stimulate private-sector investment in projects (and/or lower-level jurisdictional programs). Therefore, the government of Country A develops and registers a jurisdictional program that allows crediting to both the jurisdiction and projects (and/or lower-level jurisdictional programs) simultaneously. Both the government of Country A and project (and/or lower-level jurisdictional) proponents implement activities, conduct their respective monitoring and leakage assessments, and apply the relevant non-permanence risk tool, contribute buffer credits to the jurisdictional buffer pool and request issuance of VCUs.

Box 2: Example of Jurisdictional Program with Direct Crediting to Nested Projects and/or Lower-Level Jurisdictional Programs only (referred to as Scenario 2b).

The government of Country B develops a jurisdictional program. The government of Country B wants to stimulate investment into projects (and/or lower-level jurisdictional programs) but does not intend to request issuance of VCUs for GHG emission reductions achieved in non-project areas. The government of Country B does, however, intend to conduct monitoring across the jurisdiction to complement project-level (and/or lower-level jurisdictional program-level) monitoring and to comply with domestic and international reporting requirements (e.g., biennial reports, national GHG inventories, other GHG programs, etc.)

The government of country B implements the REDD+ activities described in its program and carries out monitoring, including the compilation of information on safeguards. Registered project and/or lower-level jurisdictional proponents implement REDD activities and conduct monitoring and leakage assessments. Projects and/or lower-level jurisdictional proponents apply the relevant non-permanence risk tool, contribute buffer credits to the jurisdictional buffer pool and request issuance of VCUs. All jurisdictional programs and projects undergo verification but only the project (and/or lower-level jurisdictional) proponents request issuance of VCUs.

2.2 REDD+ Non-Permanence Risk and Jurisdictional Pooled Buffer Account

2.2.1 Non-permanence risk in jurisdictional programs and nested projects is assessed through the use of a risk analysis, using the VCS Program document *JNR Non-Permanence Risk Tool*, for jurisdictional programs, and the *AFOLU Non-Permanence Risk Tool*, for nested projects. Each tool determines the number of credits to be deposited in the jurisdictional pooled buffer account.

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2.2.2 The jurisdictional pooled buffer account holds non-tradable buffer credits to cover the non-permanence risk associated with jurisdictional programs and REDD+ projects nested into jurisdictional programs. It is a single account that holds the buffer credits for all jurisdictional programs and nested projects.

2.2.3 The full rules and procedures with respect to non-permanence risk for jurisdictional programs developed under Scenario 2 and nested projects are set out in Section 3.17, below. Lower-level jurisdictional programs that are developed under Scenario 3 shall follow the requirements set out in Section 3.16 of the *JNR Scenario 3 Requirements*

2.2.4 The jurisdictional pooled buffer account is subject to periodic reconciliation, as set out in the *VCS Standard*.

2.2.5 Program and project non-permanence risk analyses and tools will be subject to periodic review by Verra, as set out in the *VCS Standard*.

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3 JURISDICTIONAL REDD PROGRAM AND NESTING REQUIREMENTS

This section sets out the rules and requirements for jurisdictional programs with nested projects and/or lower-level jurisdictional programs under the VCS Program.

To complete the VCS Program certification process, jurisdictional programs and nested projects and lower-level programs must demonstrate how they meet all rules and requirements set out in this section. Compliance is assessed through the validation and verification processes, which are defined in Section 4 below. Once jurisdictional programs complete the validation and verification processes, they become eligible to request registration and VCU issuance. Note that the full process for requesting program registration and VCU issuance is set out in the VCS Program document *JNR Registration and Issuance Process*.

3.1 General Requirements

Concept

Establishing consistent and standardized rules and requirements is critical to ensuring the integrity of VCS jurisdictional programs. Accordingly, certain high-level requirements must be met by jurisdictional programs, as set out below.

Requirements

3.1.1 Default factors and standards used to ascertain GHG emission data and any supporting data for establishing the forest reference emission level (FREL) shall be publicly available from a recognized, credible source, such as the *IPCC 2006 Guidelines for National GHG Inventories and their 2019 refinement*, *IPCC Good Practice Guidance for Land Use, Land-Use Change and Forestry* and the *Methods and Guidance from the Global Forest Observations Initiative (GFOI)*. See the VCS Program document *VCS Methodology Requirements* for the full rules and requirements for the use of default factors and standards.

3.1.2 The development and implementation of subnational jurisdictional elements (i.e., jurisdictional programs and/or jurisdictional FRELs) shall seek alignment with the national REDD+ strategy and policy framework and comply with all national and subnational laws and regulations.

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

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3.1.4 VCS projects and jurisdictional programs may nest into higher-level jurisdictional programs that have not been registered under the JNR framework. In order to be considered as nested, such projects and jurisdictional programs shall comply with all the applicable requirements contained in this document, including those on transitions to nested systems set out in Section 3.13.

Scenario 2a

3.1.5 Jurisdictional programs developed following Scenario 2a shall comply with all the requirements set out in this *JNR Scenario 2 Requirements*, except for those contained in sections 3.1.6 to 3.1.10 below.

Scenario 2b

3.1.6 Higher-level jurisdictional programs developed following Scenario 2b, shall include, at a minimum, the basic elements for REDD+ implementation under the UNFCCC,[3] including the development of a national strategy or action plan, a FREL, a forest monitoring system for monitoring and reporting REDD activities, and a system for providing information on how safeguards are being addressed and respected.

3.1.7 Certain requirements set out in this *JNR Scenario 2 Requirements* are optional for higher-level jurisdictional programs developed following Scenario 2b (i.e., where the jurisdictional program is not credited, and only nested projects and/or lower-level jurisdictional programs claim credits) as set out in Section 3.1.8 below.

3.1.8 Where a higher-level jurisdictional program is developed following Scenario 2b, the requirements set out in the following sections are optional: 3.6.4 – 3.6.5, 3.8.7, 3.14.8-3.14.10, 3.16.1-3.16.10, 3.17.1 – 3.17.11, 3.18.1 – 3.18.8.

3.1.9 Higher-level jurisdictional programs shall follow the monitoring and verification requirements set out in Section 3.14.3, below, but are exempt from verifying the sections noted in Section 3.1.8.

3.1.10 Higher-level monitoring data shall, at minimum, be validated during the subsequent FREL update, for the purpose of updating the FREL.

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[3] As described in paragraph 71 of decision 1/CP.16

3.2 Jurisdictional Program Description

Concept

Jurisdictional program descriptions outline all elements of a jurisdictional program.

Program Requirements

3.2.1 The jurisdictional program and its context shall be detailed in the jurisdictional program description using the *JNR Program Description Template* or an approved combined program description template (e.g., the *JNR REDD+ SES Program Description Template*) available on the Verra website. The jurisdictional proponent shall adhere to all instructional text within the template.

3.2.2 All information in the jurisdictional program 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 the VCS Program document *JNR Registration and Issuance Process*. 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 and any accompanying documents related to the determination of the FREL and monitoring of GHG emission reductions shall not be considered to be program sensitive and shall be provided in the public versions of the documents.

3.2.3 The jurisdictional program description shall identify any existing or forthcoming (where known) nested projects and/or lower-level jurisdictional programs. The full description of any nested projects and/or lower-level jurisdictional programs shall be included in a separate project description or jurisdictional program description, as relevant.

Jurisdictional Program Description Deviations

3.2.4 Deviations from the jurisdictional program description are permitted at verification following the process for project description deviations set out in the *VCS Standard mutatis mutandis.*

3.2.5 Jurisdictional program description deviations are not considered to be precedent setting.

Nesting Requirements

Projects and Lower-Level Jurisdictional Programs

3.2.6 Nested projects and lower-level jurisdictional programs shall be described in full in a separate project description or jurisdictional program description, respectively.

3.2.7 Nested projects and their context shall be described in the project description using the *VCS Project Description Template* or an approved combined template (e.g., the *CCB & VCS Project Description Template*) available on the Verra website. The project proponent shall adhere to all instructional text within the template.

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3.2.8 Lower-level jurisdictional programs developed under Scenario 2 shall follow the requirements set out in Section 3.2 above. Lower-level jurisdictional programs that are developed under Scenario 3 shall follow the requirements set out in Section 3.2 of the *JNR Scenario 3 Requirements*.

3.3 Start Date

Concept

The program start date is specified by the jurisdictional proponent and is the date on or after which policies or activities that are expected to lead to the generation of GHG emission reductions are adopted and implemented.

Program Requirements

3.3.1 The program start date shall not be prior to January 1st, 2016.[4]

3.3.2 The program start date shall be justified based on the establishment of relevant GHG laws, policies (including jurisdictional REDD+ strategies or plans), or regulations that target GHG mitigation and/or concrete implementation of relevant GHG mitigation activities.

Nesting Requirements

Projects and Lower-Level Jurisdictional Programs

3.3.3 Nested projects shall follow the start date requirements as set out in the *VCS Standard*.

3.3.4 Lower-level jurisdictional programs developed under Scenario 2 shall follow the requirements set out in Section 3.3 above. Lower-level jurisdictional programs that are developed under Scenario 3 shall follow the requirements set out in Section 3.3 of the *JNR Scenario 3 Requirements*.

3.4 Crediting Period

Concept

The crediting period is the time period for which GHG emission reductions generated by jurisdictional programs and nested projects and/or nested lower-level jurisdictional programs are eligible for issuance as VCUs. Note that certain components of jurisdictional programs and nested projects (e.g., the jurisdictional FREL and nested project baselines) are expected to change periodically and therefore are not set for the entirety of the crediting period.

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[4] In accordance with the adoption of the Paris Agreement under the UNFCCC, Decision 1/CP.21.

Program Requirements

3.4.1 The program crediting period shall be 10 years twice renewable or 20 years renewable for a period of 10 years, for a maximum of 30 years of crediting.

Note - While the crediting period for jurisdictional REDD programs is at most 20 years, renewable up to a total of 30 years, permanence is addressed, in part, by assessing the capacity of the program design to ensure the permanence of the mitigation benefits in the long term. An appropriate level of buffer withholding will be determined based on the VCS Program document JNR Non-Permanence Risk Tool*, as set out in Section 3.17.*

Note - Although jurisdictional programs may choose a 10-year crediting period, some market mechanisms (e.g., CORSIA) may only allow for credits generated by programs with longer (e.g., 20 years) crediting periods.

3.4.2 The following shall apply with respect to the renewal of the program crediting period under the VCS Program:

1) A full reassessment of additionality is not required when renewing the crediting period, as additionality is built in to the FREL, as set out in Section 3.11.2.

2) The jurisdictional program shall be validated in accordance with the latest VCS Program rules, including the latest *JNR Requirements*.

3) The jurisdictional proponent shall update the program description as needed and shall complete validation within two years after the end of the (previous) program crediting period. Where programs fail to renew the program crediting period, the crediting period shall end, and the program shall be ineligible for further crediting.

4) Where the latest version of the *JNR Requirements* would require changes to the FREL, such updates may be incorporated at the time of the next FREL update.

   For example, where a jurisdictional program has chosen a crediting period of 10 years, and a FREL update frequency of every 6 years, the jurisdictional proponent would be required to update the FREL after year 6, renew the crediting period after year 10, and update the FREL again after year 12. Or, given the two-year grace period for renewing the crediting period, the crediting period and second FREL update may both be completed and validated together in year 12.

Nesting Requirements

Projects and Lower-Level Jurisdictional Programs

3.4.3 Where VCS projects and lower-level jurisdictional programs were registered prior to the registration of the jurisdictional program they are nesting into, the first nested crediting period shall begin on the date when their first allocated baseline (or FREL, respectively) is applied.

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For example, where a standalone project starts in 2017, and in 2021, a new FREL and allocation are completed by the government with the new allocated baseline being applied from 2022–2027, the project's first nested crediting period would begin with the new allocated baseline in 2022.

3.5 Jurisdictional REDD Program Area, Location and Nesting levels

Concept

The jurisdictional program area and location define the spatial extent where the jurisdictional program will be implemented, the FREL will be estimated, and monitoring, reporting and verification of GHG emission reductions will take place. A jurisdictional program may cover an entire country or a subnational jurisdiction.

Program Requirements

3.5.1 The geographic location of a jurisdictional program shall be specified in the jurisdictional program description in terms of its geographic area. The location description of the jurisdictional program shall include the following information:

1) Name of the jurisdictional program;

2) Maps of the jurisdictional program area;

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

4) Total area of the jurisdictional program.[5]

3.5.2 A national government may determine the boundaries of subnational jurisdictional FRELs and may submit such boundaries to the Verra registry as set out in Sections 3.2and 4.1. All subsequent subnational jurisdictional program boundaries shall conform to the boundaries submitted by the national government. Such boundaries may follow existing administrative (i.e., politically defined) boundaries or may be based on ecosystems (e.g., ecoregions). Subnational governments may use ecosystem boundaries where such ecosystems are contained within the administrative boundaries of their jurisdictions. Jurisdictional proponents shall not exclude from the program boundary areas within the administrative boundaries of subnational jurisdictional programs where GHG emissions from deforestation or forest degradation may be reasonably expected to increase with respect to the historical reference period during the FREL validity period (e.g., a case where areas within the jurisdiction with high historical GHG emissions and low deforestation threat are included and those with low historical GHG emissions and high threat are excluded).

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[5] 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.

3.5.3 The determination of subnational boundaries shall be precise and shall not result in overlapping subnational jurisdictional programs.

3.5.4 Where a subnational jurisdictional program is registered, and the national government subsequently defines different boundaries for subnational jurisdictions (e.g., based on ecoregions), the subnational jurisdictional program shall follow the requirements set out in Section 3.13, after which the subnational program proponent shall adapt the jurisdictional program area to reflect the boundaries set by the national government.

3.5.5 The lowest eligible jurisdictional level for a subnational program geographically delimited by administrative units 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).

3.5.6 A country shall have no more than two registered jurisdictional levels (e.g., national and state, or state and municipality).

3.5.7 Where the precise boundary of an administrative unit is unclear, the national government shall provide written approval of the boundary as set out in Section 4.1.

3.5.8 Multiple administrative subdivisions, such as several municipalities, may form one jurisdiction for the purposes of a jurisdictional program.

3.5.9 The geographic boundary of a jurisdictional program may only be changed after validation under the following conditions:

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

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 after validation.

3) A border is modified as part of an administrative re-districting. Adjustments to the geographic boundary due to administrative re-districting may be made at any time after validation.

3.5.10 Where the geographic boundary of a jurisdictional program is changed, the following applies:

1) All changed areas shall be noted in the monitoring report;

2) The new geographic boundary and the reassessed FREL shall be validated at the time of the next verification;

3) Updated geodetic coordinates of the jurisdictional program boundaries shall be submitted to the Verra registry prior to the issuance of any further VCUs.

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Nesting Requirements

Higher-Level Jurisdictional Programs

3.5.11 Where a nested project straddles a jurisdictional program boundary, the jurisdictional program shall decide how to encompass such projects for nesting and follow the requirements for transitioning to a nested system, as set out in Section 3.13.

3.5.12 Higher-level jurisdictional program proponents shall exclude the areas of projects and lower-level jurisdictional programs that are undergoing a transition period for nesting following Section 3.13.2 below from the higher-level program area until such projects and programs become fully nested.

Projects and Lower-Level Jurisdictional Programs

3.5.13 Where the geographic boundary of a jurisdictional program is modified and the FREL is reassessed, the allocated project baselines and/or lower-level FRELs may remain fixed for the remainder of the FREL validity period.

3.5.14 Nested projects shall follow the requirements as set out in Section 3.10 of the *VCS Standard*.

3.5.15 Lower-level jurisdictional programs developed under Scenario 2 shall follow the requirements set out in Sections 3.5.1 to 3.5.10, above. Lower-level jurisdictional programs that are developed under Scenario 3 shall follow the requirements set out in Section 3.5 of the *JNR Scenario 3 Requirements*.

3.5.16 Lower-level jurisdictional program proponents shall exclude project areas that are undergoing a transition period for nesting from their program area as set out in Section 3.13.2.

3.6 Authority and Rights to GHG Emission Reductions

Concept

It is important that jurisdictional proponents have program authority over the jurisdictional program and can demonstrate rights to the GHG emission reductions resulting from the jurisdictional program. Program authority is the legal authority to adopt REDD+ policies and measures within the jurisdictional program boundaries. Rights to GHG emission reductions are the right to participate in jurisdictional benefit-sharing or transact GHG emission reductions resulting from 1) formal or informal, statutory, customary or ancestral land rights or land management rights, or 2) participation in activities that generate GHG emission reductions.

Program Requirements

3.6.1 The jurisdictional proponent shall provide documentary evidence establishing authority over the program (see the VCS Program document *Program Definitions* for the definition of program authority). Such documentation includes the national political and legal constitution and any valid delegation of authority via statutes, laws, or regulations.

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3.6.2 Where government officials represent jurisdictional proponents, they shall demonstrate that they have the necessary authority or delegated authority to represent the jurisdictional proponent.

3.6.3 The scope of program authority may be greater, or equal to the physical boundary of the jurisdictional program.

Nesting Requirements

Higher-level Jurisdictional Programs

3.6.4 The jurisdictional proponent shall demonstrate the rights to GHG emission reductions generated by the jurisdictional program. This shall include an explanation of how jurisdictional rights relate to the rights of non-state stakeholders including indigenous peoples, local communities, private entities and individuals, and how the rights of existing and any future nested projects or programs will be respected.

3.6.5 The jurisdictional proponent shall demonstrate the rights to GHG emission reductions in accordance with local law and respect all rights (including carbon rights) of non-state stakeholders, including communities, indigenous groups, local communities, private entities, and individuals.

3.6.6 The highest-level jurisdictional proponent is responsible for clarifying program authority for different jurisdictional program elements and levels.

3.6.7 The jurisdictional proponent shall clarify the nested REDD crediting pathway (See Section 2.1) for the jurisdictional program. The pathway shall take into account local law and reflect all rights (including carbon rights) of subnational public jurisdictions and non-state stakeholders, including, indigenous peoples, local communities, private entities, and individuals. When defining the nested REDD crediting pathway, the jurisdictional proponent shall comply with the requirements for stakeholder involvement set out in Section 3.8.

3.6.8 Where a higher-level jurisdictional program is registered subsequent to a lower-level jurisdictional program, the higher-level jurisdictional proponent shall clarify program authority of the higher and lower jurisdictional level. This includes clarification on control over program elements of the program (i.e., over which areas, activities, or policies).

Projects and Lower-Level Jurisdictional Programs

3.6.9 Nested projects shall follow the project ownership rules and requirements set out in the *VCS Standard*.

3.6.10 Lower-level jurisdictional programs developed under Scenario 2 shall follow the requirements for establishing program authority and the requirements for establishing their right to GHG emission reductions, as set out in this Section 3.6. Lower-level jurisdictional programs that are developed under Scenario 3 shall follow the requirements set out in Section 3.6 of the *JNR Scenario 3 Requirements*.

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3.7 Participation under Other GHG Programs and Other Forms of REDD+ Incentives

Concept

Jurisdictional programs with the same program boundaries and scope may participate under the VCS Program, another GHG program[6] such as FCPF Carbon Fund, or a results-based payment mechanism (i.e., a program that pays for GHG emission reductions and/or removals without generating a transactable carbon unit) such as the Green Climate Fund's (GCF) REDD+ pilot program. In order to maintain environmental integrity, GHG emission reductions that are issued as VCUs cannot be issued as other types of GHG credits or allowances under other GHG programs or GHG emissions trading programs, or as other environmental credits.

Projects and programs that adhere to specific market criteria (including those related to double counting) set out under Paris Agreement Article 6 rules and procedures and international Paris-related programs such as CORSIA are identified via VCU labels. Jurisdictional and nested project proponents who want to demonstrate that their VCUs adhere to such criteria should refer to the Verra website for more information about VCU labels.

Program Requirements

Other GHG Programs

3.7.1 Jurisdictional proponents shall not seek credit for the same GHG emission reductions under the VCS Program and another GHG program. Jurisdictional programs issuing GHG credits under both the VCS Program and another GHG program shall also comply with the rules and requirements set out in the VCS Program document *JNR Registration and Issuance Process*.

3.7.2 Jurisdictional proponents shall not seek credit for GHG emission reductions credited to lower-level activities. They shall deduct from their net GHG benefit (i.e., the total change in GHG emissions with respect to the registered FREL minus leakage) any GHG emission reductions achieved or anticipated during the same period by all projects and lower-level jurisdictional programs that encompass the same jurisdictional boundary (i.e., covering the same or overlapping area(s), carbon pools and GHG sources) as set out in Section 3.18.6.

3.7.3 To prevent double counting, any GHG emission reductions achieved or anticipated by non-forest carbon projects within the geographic boundary of the jurisdictional program that include activities that reduce pressure on forests (e.g., fuel efficient cookstove projects) shall be deducted from the net GHG benefit of the jurisdiction. This applies to any such projects under any GHG program.

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[6] The term GHG program covers carbon crediting programs, as defined further in the VCS Program document Program Definitions.

Results-Based Payment Programs

3.7.4 Where jurisdictional programs participate in a results-based payment program, jurisdictional proponents shall not seek credit, payment, sale or transfer for the same GHG emission reductions under the VCS Program and the results-based payment program and shall deduct from their net GHG benefit under the JNR program any GHG emission reductions paid for or anticipated to be paid for (or otherwise transacted or rewarded) by the results-based program. Evidence shall be provided that the GHG emission reductions generated within the jurisdictional program boundary have not and will not be otherwise counted or used under any results-based program.

3.7.5 Where jurisdictional programs have sought or received GHG-related results-based payments (or other forms of rewards for GHG emission reductions), jurisdictional proponents shall provide the following details for such payments:

1) Name and contact information of the relevant results-based program;

2) Details of the jurisdictional program as registered under the results-based program (e.g., title and identification number as listed under the program);

3) Monitoring periods for which results-based payments were sought or received under the results-based payment program;

4) Details of all payments sought or received under the results-based payment program (e.g., volumes and vintages of the GHG emission reductions for which payments were received).

Paris Agreement Article 6 Mechanisms and International Paris-Related Programs

3.7.6 Jurisdictional programs or nested projects that seek to use VCUs in the context of the Paris Agreement Article 6 mechanisms and international Paris-related programs such as CORSIA, shall follow the requirements set out in the *VCS Standard*.

Emission Trading Programs and Other Binding Limits

3.7.7 Jurisdictional programs that reduce GHG emissions from activities that are included in an emissions trading program or any other mechanism that includes GHG allowance trading shall follow the requirements related to emission trading programs and other binding limits as set out in the *VCS Standard*.

Nesting Requirements

Projects and Lower-Level Jurisdictional Programs

3.7.8 Nested projects registered under the VCS Program and another GHG program shall comply with the requirements set out in the *VCS Standard.*

3.7.9 Lower-level jurisdictional programs developed under Scenario 2 shall follow the requirements in this Section 3.7. Lower-level jurisdictional programs that are developed under Scenario 3 shall follow the requirements set out in Section 3.7 of the *JNR Scenario 3 Requirements*.

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3.8 Social and Environmental Safeguards and Benefit-Sharing

Concept

It is important for jurisdictional programs to transparently communicate with stakeholders during the program development and implementation processes and comply with relevant safeguards in order to avoid or limit negative environmental and social impacts. Benefit-sharing mechanisms are used to ensure that stakeholders, including indigenous peoples, local communities and other relevant carbon rights holders, are recognized and rewarded for their role in reducing GHG emissions.

Program Requirements

3.8.1 Jurisdictional programs shall comply with all UNFCCC decisions on safeguards for REDD+,[7] and any relevant jurisdictional (national and subnational) safeguards requirements otherwise established in by any law, statue or regulatory framework (e.g., including those that are not specific for REDD+).

3.8.2 Jurisdictional proponents shall 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) safeguards requirements have been addressed and respected. Jurisdictional proponents shall report any advances in the jurisdictional information systems created for providing information on how safeguards are addressed and respected, where available.

3.8.3 Jurisdictional proponents shall ensure information about how safeguards have been addressed is made readily accessible to all relevant stakeholders throughout implementation of the jurisdictional program. Jurisdictional proponents shall provide information in the program description about the nature of stakeholder consultations related to the design and implementation of the jurisdictional program, 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. Jurisdictional proponents shall demonstrate that the consultations were conducted in a language and a manner that allowed the effective participation of all relevant stakeholders, with special attention to indigenous peoples and local communities. Additional standards such as the *REDD+ Social & Environmental Standards* (REDD+SES), *Climate, Community & Biodiversity Standards* (CCBS), policies of the Green Climate Fund, the World Bank safeguards policies, the World Bank Environment and Social Framework, and the Forest Stewardship Council (FSC) certification may be used, where appropriate, to help provide such information to stakeholders.

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[7] 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 (Cancun, 2010), paragraphs 69, 71, 72, 76, appendix II, paragraph 2; Decision 12/CP.17 (Durban, 2011), Section I, paragraphs 1, 2, 3, 4, 5, 6; Decision 9/CP.19 (Warsaw, 2013), paragraph 4, 11; Decision 12/CP.19 (Warsaw, 2013), paragraphs 1,2,3,4,5.

3.8.4 Jurisdictional programs shall be developed and documented in a transparent manner and in consultation with stakeholders. Stakeholders include, inter alia, project proponents of existing AFOLU projects, private landowners, rural and/or indigenous communities, as well as relevant government agencies, private sector, academy representatives, and NGOs. Principle 6 of the *REDD+ Social & Environmental Standards* (REDD+SES); the *Guidelines on Stakeholder Engagement in REDD+ Readiness* of the Forest Carbon Partnership Facility and/or the UN-REDD Programme may be used to guide the stakeholder consultation process.

3.8.5 Jurisdictional proponents shall develop a mechanism for receiving, screening, addressing, monitoring and reporting feedback on grievances and concerns submitted by stakeholders relating to the design, implementation and evaluation of the jurisdictional program at the local, subnational and national levels. This mechanism shall include appropriate means of communication to enable all interested and/or stakeholders to participate. Principle 6.6 of the REDD+ SES may be used to guide development of grievance mechanisms.

3.8.6 Additional standards, such as the REDD+SES, may be applied to demonstrate compliance with the social and environmental safeguards requirements.

Note – requirements for jurisdictional programs completing joint validation or verification to the JNR Requirements and REDD+SES are set out in the VCS Program document JNR Validation and Verification Process.

Benefit-Sharing

3.8.7 Jurisdictional proponents shall put in place an equitable, transparent, and legally binding benefit-sharing system. This system shall consider stakeholders' carbon rights, including rights to land, forests, forest resources, as well as their contribution to ecosystem services that resulted or will result in GHG emission reductions. Benefit-sharing systems shall be developed through a transparent and participatory process in which stakeholder participation is justifiably representative, with a special emphasis on indigenous peoples, local communities, women and the most marginalized and/or vulnerable.[8]

Projects and Lower-Level Jurisdictional Programs

3.8.8 Nested projects registered under the VCS Program shall comply with the requirements set out in the VCS Standard.

3.8.9 Lower-level jurisdictional programs developed under Scenario 2 shall follow the requirements in this Section 3.8. Lower-level jurisdictional programs that are developed under Scenario 3 shall follow the requirements set out in Section 3.8 of the *JNR Scenario 3 Requirements*.

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[8] Additional guidance and information about good-practices in benefit sharing arrangements can be found at: https://www.forestcarbonpartnership.org/bio-carbon/en/index.html and https://www.forestcarbonpartnership.org/bio-carbon/en/index.html#additionalResources.

3.9 Eligible Activities

Concept

Jurisdictional proponents may decide which REDD activities, as defined under the UNFCCC, to include as part of their jurisdictional program. Nested project participants and lower-level jurisdictional participants may account for additional activities as standalone projects and jurisdictional programs, respectively.

Program Requirements

3.9.1 Jurisdictional programs may include REDD activities as defined under the UNFCCC,[9] and in line with the VCS Program AFOLU categories as set out in the VCS Program document *VCS Methodology Requirements* (see Appendix 1: Comparison of IPCC, UNFCCC and VCS Program Components of REDD+ for a full classification of activities), as follows:

1) Reduced emissions from deforestation.

2) Reduced emissions from forest degradation (including both REDD and IFM activities focused on avoided degradation).

Note – Requirements for carbon stock enhancement activities (e.g., afforestation/reforestation assisted natural regeneration, and IFM Low-productive to High-productive Forest set out in the VCS Program document VCS Methodology Requirements*) will be included in a future update to the* JNR Requirements*.*

Note - Activities falling under the UNFCCC activity of forest conservation in non-threatened forests are not eligible under the VCS Program.

3.9.2 Jurisdictional proponents shall determine which activities set out in Section 3.9.1 will be accounted for within their jurisdictional program, noting the following:

1) GHG emissions from deforestation shall always be accounted for, regardless of which other activities are (or are not) included.

2) It is required to include GHG emissions from forest degradation, where they are above *de minimis*. Where forest degradation is not included, procedures shall be established to account for possible leakage from deforestation to forest degradation, in accordance with Section 3.16.1.

3.9.3 The definition of forest used in the construction of the FREL shall be specified and shall be consistent with the forest definition used for reporting under the UNFCCC.[10] Where there is a difference between the most recent definition of forest used in UNFCCC reporting and the

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[9] UNFCCC Decision 1/CP.16 paragraph 70.
[10] UNFCCC Decision 12/CP.17

definition of forest used in the construction of the FREL, the jurisdictional proponent shall explain how and why the current forest definition was chosen.

3.9.4 The definition of deforestation and of forest degradation shall be established with reference to IPCC land-use categories of *forest land converted to non-forest land* and *forest land remaining forest land*, respectively.

3.9.5 Jurisdictional proponents shall use activity-based accounting[11] to develop their jurisdictional FREL.

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

Note –Verra may develop rules and requirements for land-based accounting in the future if jurisdictional proponents demonstrate an interest in applying such an accounting approach.

Nesting Requirements

Projects and Lower-Level Jurisdictional Programs

3.9.6 Project proponents of nested projects may carry out REDD+ activities not included in the jurisdictional program boundary as independent projects, following the project-level requirements set out in the *VCS Standard*.

For example, a project nested into a jurisdictional program covering only deforestation may develop an avoided forest degradation project and generate both GHG emission reductions from deforestation (accounted for within the jurisdictional program) and GHG emission reductions from forest degradation (accounted in accordance with the VCS Standard) in the same project boundary.

3.9.7 Lower-level jurisdictional proponents developed under Scenario 2 may include REDD+ activities not considered in the jurisdictional program boundary as independent programs following the requirements set out in Sections 3.9.1 to 3.9.5, above and any other relevant JNR Program requirements. Lower-level jurisdictional programs that are developed under Scenario 3 shall follow the requirements set out in Section 3.9 of the *JNR Scenario 3 Requirements.*

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[11] The activity-based approach to emissions estimation consists of identifying specific activities occurring on the land that influence GHG fluxes and focusing on the intervention, allowing for differentiation between activities. See Iversen P., Lee D., and Rocha M. (2014). Understanding Land Use in the UNFCCC, Chapter 2.2.3. for more information.

3.10 Scope and Jurisdictional REDD Program Boundary

Concept

The jurisdictional program boundary includes the GHG sources and carbon pools that are accounted for under a jurisdictional program and any projects and lower-level jurisdictional programs nested into the higher-level jurisdictional program. Nested projects participants and lower-level jurisdictional programs may account for additional GHG and pools as standalone projects and jurisdictional programs, respectively.

Program Requirements

3.10.1 The relevant carbon pools for REDD activities are aboveground biomass, belowground biomass, litter, dead wood, harvested wood products (HWP), and soil.[12]

3.10.2 Jurisdictional proponents may determine which carbon pools and GHG sources will be accounted for, though above-ground biomass and below-ground biomass shall always be included. The choice of carbon pools and sources of GHG emissions shall be conservative (i.e., pools that are at risk of decreasing, relative to the jurisdictional FREL, due to the jurisdictional program shall not be excluded, where deemed above *de minimis* in accordance with Section 3.10.4). HWP are always considered *de minimis*. Soil organic carbon is not included.

Note - Requirements to account for GHG emission reductions from soil organic carbon, organic soils in wetlands (including peatlands) and GHG emissions from biomass burning will be included in a future update to the JNR Requirements.

3.10.3 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 generated. Such conservative exclusion may be determined by using approximative calculations, references from scientific literature, tools from an approved GHG program, or based upon peer-reviewed literature.

3.10.4 Specific carbon pools and GHG sources 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[13] of the total estimated GHG emissions generated by the jurisdiction over the lifetime of the jurisdictional program. *De minimis* exclusions shall be demonstrated and justified at validation only; new *de minimis* exclusions are not permitted at verification. Such exclusions shall be

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[12] Although wetlands are not currently included within the JNR program, peat soil may be a relevant carbon pool (e.g., where leakage may affect wetlands).

[13] The VCS Program document *VCS Methodology 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 allows methodologies to determine how this is calculated. To allow more flexibility for jurisdictions where the inclusion of minor pools may be costly or infeasible, significance is defined as 10 percent rather than 5 percent for jurisdictional accounting, which is consistent with the Forest Carbon Partnership Facility *Methodological Framework*.

demonstrated using approximative calculations and references from scientific literature, including applicable default (Tier 1) data.

Nesting Requirements

Projects and Lower-Level Jurisdictional Programs

3.10.5 Nested projects and lower-level jurisdictional programs may account for GHG sources and carbon pools that are not accounted for by the higher-level jurisdictional program as standalone projects or jurisdictional programs.

3.10.6 Where such GHG sources and carbon pools are accounted for, nested projects shall follow the requirements set out in the *VCS Standard* and the applied methodology, and nested lower-level jurisdictional programs developed under Scenario 2 shall follow the requirements set out in Sections 3.10.1 to 3.10.4. Lower-level jurisdictional programs that are developed under Scenario 3 shall follow the requirements set out in Section 3.10 of the *JNR Scenario 3 Requirements*.

3.11 Additionality

Concept

To ensure that the GHG mitigation benefits of activities included in and nested into jurisdictional programs are additional compared to a business-as-usual scenario, it is critical for jurisdictional proponents to implement new and/or enhanced strategies, policies and measures, and estimate the resulting GHG emission reductions against a credible FREL.

Program Requirements

3.11.1 Jurisdictional programs shall demonstrate that they are enacting policies and measures to reduce GHG emissions compared to the jurisdictional FREL scenario, including those contained in a REDD+ strategy or plan developed by the jurisdictional proponent.[14]

3.11.2 Additionality is factored into the FREL by establishing a conservative benchmark for measuring the performance of the jurisdictional program such that any GHG emission reductions relative to the FREL are considered additional. To this end, relevant policies and measures to reduce GHG emissions that were enacted before the start of the crediting period shall be included in the FREL estimation,[15] in accordance with Section 3.12.

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[14] E.g., in accordance with Decision 1/CP.16

[15] These policies and measures are incorporated in practice by using historical emission data to construct the FREL including data from the period were these policies started implementation.

Nesting Requirements

Nested Projects

3.11.3 Nested projects shall follow the additionality requirements as set out in the *VCS Standard*.

3.11.4 Lower-level jurisdictional programs developed under Scenario 2 shall follow the requirements set out in Sections 3.11.1 and 3.11.2 above. Lower-level jurisdictional programs that are developed under Scenario 3 shall follow the requirements set out in Section 3.11 of the *JNR Scenario 3 Requirements*.

3.12 Jurisdictional FRELs and Nested Project Baselines

Concept

A jurisdictional FREL provides the benchmark against which program results are measured to determine the volume of GHG emission reductions that a jurisdictional program has achieved. The jurisdictional FREL is comprised of activity data (i.e., area of land transitioning to different land-uses) and emission factors (i.e., estimates of carbon stock loss in land-use transitions) using data from a historical reference period. The FREL scenario represents the activities and GHG emissions that would occur in the absence of the program activities. The FREL is updated periodically in order to take changes in drivers and rates of deforestation and forest degradation into account, and therefore it is only valid during a FREL validity period, after which it must be updated.

Nested projects and lower-level jurisdictional programs obtain their project baselines and jurisdictional FRELs, as appropriate, through the allocation of the higher-level jurisdictional FREL across the jurisdictional boundaries, based on the risk of deforestation or forest degradation and the applicable emission factors.

Program Requirements

General Requirements

3.12.1 A jurisdictional FREL shall be established for the purpose of estimating the GHG emission reference against which program results are measured to determine the volume of GHG emission reductions that a jurisdictional program has achieved. Jurisdictional proponents shall follow the requirements in this section to estimate jurisdictional FRELs.

3.12.2 The jurisdictional FREL shall remain fixed for a period of 4 to 6 years, as defined by the jurisdictional proponent (referred to as the *FREL validity period*). The jurisdictional FREL shall be updated at the end of the FREL validity period, following the requirements set out in Section 3.12.29, below. A reassessed FREL shall be equal or lower than the previous jurisdictional FREL.

3.12.3 The jurisdictional FREL shall be disaggregated by activity (i.e., deforestation or forest degradation, as set out in Section 3.9.1, above).

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3.12.4 The FREL may be further disaggregated by specific AFOLU activities (such as *unplanned deforestation*; see Appendix 2: Comparison of IPCC, UNFCCC and VCS Program Components of REDD+ for a comparative breakdown of these different activities). Where a jurisdictional FREL separates the broad UNFCCC REDD+ activities into specific AFOLU activities, the following applies:

1) It is considered good practice to differentiate between planned and unplanned activities, as their historical rates may be different, and should therefore be estimated using different methods whenever possible (see Sections 3.12.6 and 3.12.7).

2) Forest degradation may include all or only specific activities leading to forest degradation in the jurisdictional FREL (e.g., a jurisdictional FREL may include timber harvesting but not fuelwood collection).

3.12.5 The jurisdictional FREL shall be consistent, to the extent possible, with the data and methods used to account for forest related GHG emissions in the country's existing or emerging UNFCCC GHG inventory.

FREL GHG Emissions

3.12.6 As a default, the jurisdictional FREL shall be calculated as the historical annual average GHG emissions over a period of 4 to 6 years (ending within two years of the start of the jurisdictional FREL validity period) for GHG emissions from unplanned deforestation and forest degradation (referred to as the "historical reference period"). Longer historical reference periods may be used if the resulting FREL is more conservative than the one that would be obtained by using a 4-, 5-or 6-year period. Guidance on the use of trends for the construction of FRELs is forthcoming (see note below).

3.12.7 Where GHG emissions from planned deforestation and planned forest degradation are estimated separately from unplanned activities, the jurisdictional FREL shall be calculated based on the observed historical average rate of change per permit type that allows for the deforestation or forest degradation (i.e., not only based on the rate allowed by the type of permit). Note that the jurisdictional FREL for these activities may be higher than the historical annual average GHG emissions because more areas could be granted permits that allow for planned deforestation and/or planned forest degradation when compared to the historical reference period. Emissions from planned deforestation and planned degradation shall be deducted from the unplanned historical average emissions estimates to avoid counting them twice.

Note – Verra is exploring methodologically robust and credible options to establish jurisdictional FRELs that include increasing GHG emissions where they can be justified by national circumstances (e.g., high forest low deforestation countries and countries with legacy GHG emissions, e.g., from peatland decomposition).

Note – Verra is exploring methodologically robust and credible options to establish jurisdictional FRELs that include forest carbon enhancement activities (e.g., afforestation/reforestation and improved forest management).

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3.12.8 In jurisdictions where the annual average of the estimated historical emissions would represent GHG emissions above those that could be caused by the loss of the remaining forest lands under threat within the jurisdictional boundaries during the FREL validity period,[16] a downward adjustment factor or a decreasing linear extrapolation of the historical trend in GHG emissions shall be used to construct the FREL so as to avoid an overestimation of GHG emissions.

3.12.9 Jurisdictional FRELs shall not include GHG emissions from forest loss events that occurred during the historical reference period but are unlikely to reoccur during the FREL validity period (i.e., in the next 4 to 6 years). Accordingly, 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 more than 10 years shall be excluded from the calculation of historical GHG emissions from unplanned deforestation and unplanned forest degradation. Where areas of loss are not contiguous, it shall be demonstrated that all affected areas are associated with the same natural disturbance event.

3.12.10 Where excluded, the area associated with historical losses attributed to natural disturbances shall be clearly identified and shall not be included in jurisdictional program accounting, until such time as the forest has recovered to a state similar to that which existed prior to the disturbance. Once recovered the area may be included in the jurisdictional FREL during a future update. However, if the area where historical losses attributed to natural disturbances is subsequently converted by human activities to a non-forest land use, the GHG emissions associated with the forest loss shall be accounted for by the jurisdictional program.

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

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

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

3) 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 the finances are in place.

The GHG emissions from unavoidable infrastructure projects shall be included in the FREL in a way that represents the historical deforestation rate observed in similar infrastructure projects in the country. If the clearance of the forest areas associated to the development of such infrastructure requires more than one FREL validity period, the associated emissions should be

[16] This situation may be expected in jurisdictions where historically persistent high rates of deforestation have been registered but that in recent years have seen a continuous decline that may be attributable to the lack of forest areas accessible to deforestation agents. In jurisdictions with these characteristics, an assessment of the remaining forests at risk shall be carried out by applying the *JNR Risk Mapping Tool*. The potential GHG emissions of the forest areas under risk of deforestation shall be estimated considering the same pools included in the FREL and compared to such FREL. If the potential GHG emissions are lower than the total FREL emissions during the FREL validity period, the FREL shall be adjusted downwards so that it does not exceed the GHG emission potential of the remaining forest.

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allocated proportionately over several FREL periods. The area associated with this future loss shall be clearly identified when the jurisdictional FREL is developed, and any future GHG emissions associated with the area shall be accounted for.

Historical GHG Emissions

3.12.12 The level of GHG emissions over a historical reference period shall form the basis of the jurisdictional FREL, as set out in Section 3.12.1. Historical GHG emissions shall be estimated separately for each activity included in the jurisdictional FREL. The historical level of GHG emissions is determined by multiplying activity data (in ha/year) by the emission factor for the forest transition (e.g., forest to non-forest or forest to degraded forest) (in tCO_2e/ha). Requirements for estimating activity data and emission factors are set out in Sections 3.12.13 to 3.12.28, below.

Activity Data

3.12.13 Activity data represents estimates of land-use transitions over time in ha/year (e.g., forest to non-forest or forest to degraded forest).

3.12.14 Only one activity (e.g., deforestation or forest degradation) shall be considered for each location during the FREL validity period. Standard classification rules shall be used to determine which activity takes place in each location within the jurisdictional program area.

3.12.15 A time series of area estimates shall be used to estimate the rate of different land-use transitions during the historical reference period. The maximum number of years between measurements shall be two years. For the initial development of the jurisdictional FREL, the period between measurements may be up to four years.

3.12.16 Area measurements shall be undertaken through remote sensing, using either maps or area sampling approaches.

3.12.17 Where activity data are estimated from maps, the following applies:

1) The maps shall include deforestation and forest degradation (where included in the jurisdictional FREL set out in Section 3.9.1) as classes.

2) An accuracy assessment shall be undertaken for each map separately (e.g., relying on visual sampling of high-resolution imagery as a reference) following the same requirements for reference data stated in Section 3.12.18 below regarding sample-based methods for establishing activity data. The accuracy assessment shall be conducted separately for deforestation and forest degradation, when applicable.

3) A bias correction shall be made to the area estimates based on the accuracy assessment and using standard best practice methods.[17]

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[17] See the GFOI Methods and Guidance document, v2.0, page 136, Box 24 or v3.0, page 185, Box 32 for an example.

3.12.18 Where activity data are estimated using area sampling approaches, the following applies:

1) Area sampling shall use high-resolution imagery with a maximum pixel size of 5 meters per pixel. Such high-resolution imagery shall be available for most of the historical reference period and for the entirety of the FREL validity period. Lower resolutions imagery may only be used if high-resolution imagery is not available.

2) Classification error shall be quantified and minimized.

3) Stratified or non-stratified sampling and random or systematic sampling may be used. The approach to setting the sample size and to sample allocation shall be described.[18]

4) Data shall be analysed using standard best practice methods.[19]

3.12.19 Activity data estimation shall result in mean area estimates for the land-use transitions between land-use (sub) strata over the historical reference period. Each area estimate shall include an uncertainty estimate representing sampling error, as set out in Section 3.15.4 below.

Emission Factors

3.12.20 Emission factors represent estimates of GHG emissions (based on carbon stocks in the carbon pools included in the jurisdictional program boundary) corresponding to land-use transitions in tCO_2e/ha.

3.12.21 Emission factors shall be fixed at validation. The same emission factors shall be used to estimate GHG emissions in the FREL scenario and to estimate GHG emission reductions by the jurisdictional program during the FREL validity period.

3.12.22 Emission factors shall be calculated as the difference in carbon stocks due to land-use transitions:

1) Where GHG emissions occur from above-ground biomass, below-ground biomass, deadwood and litter following the land-use transition, it shall be assumed that all GHG emissions from these carbon pools occur instantaneously.

2) Where there is post-deforestation revegetation, it shall be assumed that GHG removals occur instantaneously, and the emission factor shall be calculated from the long-term average carbon stock (see the *VCS Standard)*.

3) Where the post-deforestation land-use is cyclical (e.g., slash-and-burn agriculture with periodic fallow clearing), the biomass estimates shall reflect the long-term average over time (see the *VCS Standard* for more information on the long-term average GHG benefit).

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[18] Uncertainty discounts will apply where there is a small sample size and resulting high uncertainty. Jurisdictional proponents are encouraged to use larger sample sizes in order to minimize uncertainty.
[19] See GFOI Methods and Guidance document, v2.0, page 127, section 5.1.5 or v3.0, page 176, section 4.2.3 for an example.

4) Where the land-use after the land-use transition is degraded forest, the biomass estimates shall reflect an average state of carbon stock in the degraded forest.

3.12.23 Data sources for estimating forest carbon stocks shall be chosen as follows:

1) Above-ground and below-ground biomass shall be estimated based on a plot-based field inventory conducted within the jurisdictional area. Where only few sample units of national forest inventories fall into the jurisdictional area, sample units from other areas can be used if these can be shown to be representative of the forest within the jurisdictional area.

2) Above-ground and below-ground biomass shall be derived from tree measurements using allometric models and/or root-to-shoot ratios:

   a) Where available, allometric models and/or root-to-shoot ratios based on local data (e.g., from the jurisdictional area) that meet the requirements for use of default factors and models as set out in the VCS Program document *VCS Methodology Requirements* shall be used.

   b) Where such allometric equations and/or root-to-shoot ratios are not available, globally developed allometric equations and/or root-to-shoot ratios that meet the requirements for use of default factors and models as set out in the VCS Program document *VCS Methodology Requirements* shall be used.

   c) Uncertainty associated with allometric equations may optionally be included. Uncertainty associated with root-to-shoot ratios shall be propagated.

3) Deadwood and litter biomass shall be estimated through field inventories conducted within the jurisdictional area. Default data (e.g., from *the 2019 Refinement to the 2006 IPCC guidance*) may only be used where:

   a) Suitable field inventories are unavailable;

   b) Deadwood and litter are collectively expected to amount to less than fifteen percent of the total carbon stocks;

   c) The default data meets the requirements for use of default factors and models as set out in the VCS Program document *VCS Methodology Requirements*.

4) Plot-based field inventories shall comply with the following requirements:

   a) Raw measurements shall be available and have been analysed;

   b) It is considered good practice to collect this information regularly (e.g., at least every second update of the jurisdictional FREL);

   c) A unique set of measurements shall be used for each forest type (i.e., the same sample plots cannot be used to develop emission factors for more than one forest type);

   d) A minimum of 20 sample units shall be used in each forest type;

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e) Where field measurements are compiled from several sources and do not represent one sampling frame for the entire jurisdictional area, it shall be demonstrated that the measurements are collectively representative of the forest in the jurisdictional program area.

3.12.24 Data sources for estimating non-forest biomass shall be chosen noting the following:

1) Biomass shall be estimated through field inventories where suitable data that meets the requirements for field inventories, set out in Section 3.12.23 above, are available;

2) Default data (e.g., from the *2019 Refinement to the 2006 IPCC guidance*) may be used where it meets the requirements for use of default factors and models as set out in the VCS Program document *VCS Methodology Requirements*.

3.12.25 Uncertainty shall be estimated for each carbon pool and each forest type as follows:

1) Where biomass is estimated from field measurements, the associated sampling uncertainty shall be estimated;

For example, where only one stratum is used and a national forest inventory has been conducted with 101 sample plots and a standard deviation of 50 tCO_2e, then the associated sampling uncertainty will be equal to: $\frac{50}{\sqrt{101-1}} = 5\ tCO_2e$.

2) Where biomass is estimated from default sources, the associated uncertainty shall be estimated based on the range of values provided in the source;[20]

For example, in tropical moist forests, the average carbon stock in litter per hectare for all vegetation types is 5.9 tCO2e with a range of 1.9 – 14.8 tCO2e. The uncertainty lower bound is calculated as: $\frac{(1.9-5.9)}{5.9} = 67.8\%$. The uncertainty upper bound is calculated as: $\frac{(14.8-5.9)}{5.9} = 150.8\%$. The average is calculated as: $\frac{(67.8\%+150.8\%)}{2} = 109.3\%$.

3.12.26 Biomass estimation shall result in mean biomass estimates for the land-use (sub) strata. The mean biomass estimate is calculated by summing all the pools. The uncertainty shall be propagated.

3.12.27 Biomass estimates shall be converted to tCO_2e per ha using a carbon fraction and ratio of molecular weights as per the *2019 Refinement to the 2006 IPCC guidance*. Uncertainties shall be propagated.

3.12.28 Each estimate shall include an uncertainty estimate representing the error sources, as set out in Section 3.15.6 below.

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[20] For instance, where the *2019 Refinement to the 2006 IPCC guidance* is used, Table 2.2 in Volume 4, Chapter 2 of the lists default values for litter and deadwood and Box 3.0B in Volume, Chapter 3 explains how to convert a range to an uncertainty. The uncertainty lower bound and uncertainty upper bound should be calculated, and an average can be calculated to derive a symmetric interval.

Updating the Jurisdictional FREL

3.12.29 Jurisdictional FRELs shall be updated and revalidated every 4 to 6 years, as determined by the jurisdictional proponent. It is considered good practice to update the jurisdictional FREL more frequently where deforestation and forest degradation dynamics are expected to change in the near future.

3.12.30 The following components of the jurisdictional FREL shall be updated:

1) Activity data representing land-use transitions shall be updated during every update to the jurisdictional FREL;

2) The GHG emission factors shall be revisited[21] at least every other update to the jurisdictional FREL.

3.12.31 The scope of the jurisdictional FREL may be broadened at any time (i.e., not only at the 4 to 6 year periodic update) through a program description deviation (as set out in Section 3.2.5) to include either additional activities set out in Section 3.8.1, GHG sources and/or carbon pools as set out in Section 3.10. Such new activities, GHG sources and/or carbon pools may be accounted and credited for prior monitoring periods. Where such updates are undertaken separately from the required periodic updates, only the additional pools or activities and associated emission factors, where necessary, may be updated. All other FREL elements (such as unrelated emission factors) may be updated only as part of required periodic updates.

3.12.32 Where the scope of the jurisdictional FREL has been expanded in advance of the required periodic update, the entire FREL 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 FREL).

3.12.33 The scope of the jurisdictional FREL may be narrowed at the time of FREL update only where it can be demonstrated that the activity or carbon pool to be removed is (or has become) *de minimis*, or that it is conservative to exclude it, and this will remain the case for the duration of the new jurisdictional FREL validity period.

Nesting Requirements

Higher-Level Jurisdictional Programs

3.12.34 Higher-level jurisdictional proponents shall use the *JNR Allocation Tool* to allocate the higher-level jurisdictional FREL to nested projects and lower-level jurisdictional programs for both deforestation and forest degradation.

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https://verra.org/programs/jurisdictional-nested-redd-framework/jnr-program-details/

[21] Emission factors need to be revisited but raw field data does not need to be collected every other FREL validity period.

3.12.35 In order to apply the *JNR Allocation Tool*, risk maps for deforestation and forest degradation, if applicable, shall be developed as follows:

1) Risk maps shall depict at least 10 and up to 31 discrete categories of risk (called "risk classes" in the *JNR Allocation Tool),* including a category where the risk is considered insignificant (called "zero risk class" in the *JNR Allocation Tool);*

2) Risk maps shall cover the entire forest area that exists within the jurisdictional program area at the beginning of the FREL validity period;

3) Forests with a negligible or insignificant risk of deforestation or forest degradation shall be included in a risk class assumed to be zero and shall be identified by applying the *JNR Risk Mapping Tool* (of another risk mapping methodology as set out in Section 3.12.35(6)).

4) Forest areas in projects and lower-level jurisdictional programs that have been credited for avoided deforestation in the past (including prior to nesting) shall not be eligible for crediting again in future FREL validity periods. For this reason, such areas shall be included within the zero risk class;

5) Forest areas in projects and lower-level jurisdictional programs that have been credited for avoided forest degradation in the past (including prior to nesting) shall not be eligible for crediting for avoided forest degradation again in future FREL validity periods, although they may be credited for avoided deforestation. In this case, the emission factor shall be calculated as the difference between the emission factor for deforestation and the emission factor for forest degradation. Such areas shall not be included in the zero-risk class of the deforestation risk map, but shall be included in the zero risk class of the forest degradation map;

6) Risk maps may be developed using the *JNR Risk Mapping Tool* or another method. Where they are developed using another method, the following applies:

   a) Risk maps shall always include a zero risk class;

   b) The risk map shall be more accurate than the risk map that would have been created using the *JNR Risk Mapping Tool;*

   c) The accuracy assessment and risk map comparison shall be carried out following the procedures set out in the *JNR Risk Mapping Tool*.

3.12.36 All projects and lower-level jurisdictional programs that are registered under the VCS Program, including those that are undergoing a transition period as set out in Section 3.13 and already nested projects and lower-level jurisdictional programs, shall be considered in the application of the *JNR Allocation Tool*.

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Projects and Lower-Level Jurisdictional Programs

3.12.37 As set out in Section 3.12.34, above, the higher-level jurisdictional proponent shall use the *JNR Allocation Tool* to allocate the higher-level jurisdictional FREL to nested project baselines and lower-level jurisdictional FRELs.

3.12.38 Projects that reduce planned forest degradation (e.g., IFM logged-to-protected forest projects), shall nest where the jurisdictional program includes forest degradation by applying the *JNR Allocation Tool*. Where the jurisdictional program does not include planned forest degradation, such projects shall continue to use the applicable VCS project methodology until it is included within the jurisdictional program scope.

3.13 Transition to a Nested System

Concept

Where a standalone project or lower-level jurisdictional program is integrated into a higher-level jurisdictional program, it must follow requirements to transition into a nested system (referred to as being grandparented in previous versions of the *JNR Requirements*) to ensure the consistent estimation of emissions and carbon accounting across projects and jurisdictional programs.

Program Requirements

3.13.1 There are no general requirements for jurisdictional programs, though higher-level jurisdictional programs and lower-level jurisdictional programs shall follow the relevant requirements set out in Sections 3.13.2 and 3.13.3 to 3.13.5, respectively.

Nesting Requirements

Higher-Level Jurisdictional Programs

3.13.2 Jurisdictional proponents shall exclude from their program boundaries the areas of projects and lower-level programs undergoing a transition period to nest until they become fully nested.

Projects and Lower-Level Jurisdictional Programs

3.13.3 Where a higher-level program is registered after the registration of a project or lower-level jurisdictional FREL or program (e.g., where a lower-level jurisdictional FREL has been registered and a national jurisdictional program is subsequently registered), the following applies:

1) A lower-level jurisdictional FREL shall remain valid for a transition period of up to 18 months after the higher-level program registration and then be replaced by an allocated FREL, in accordance with Section 3.12.34.

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2) A project baseline shall remain valid for the number of years remaining before it is due to be reassessed and then replaced by an allocated baseline, in accordance with Section 3.12.34. Projects and lower-level jurisdictional programs are encouraged to adopt the higher-level jurisdictional FREL at any time prior to the end of the transition period;

   For example, where the project baseline is still valid for 6 years and a higher-level FREL is registered in year 4 after the project start date, the project baseline would be valid for the 6 remaining years.

3) Jurisdictional proponents may establish their own transition period requirements, which shall supersede the requirements set out in Section 3.13.3(1)(2), above, where the transition period is the same length or shorter than those set out in Section 3.13.3(1)(2).

4) Where the project baseline or lower-level jurisdictional FREL has a different scope (i.e., different REDD activity, GHG sources or carbon pools are included) than the higher-level FREL, the rules and requirements in Section 3.13.3(1), above, only apply to those activities, GHG sources and carbon pools that overlap with the higher–level jurisdictional program.

5) Where individual activities, GHG sources and carbon pools do not overlap between the project baseline or lower-level jurisdictional FREL and the higher-level jurisdictional FREL, the non-overlapping activities, GHG sources and carbon pools may be developed as independent (standalone) project or jurisdictional program activities. Standalone project activities shall follow the requirements set out in the *VCS Standard* and the applied methodology, and standalone lower-level jurisdictional programs shall follow the requirements set out in Section 3 of this document.

   For example, where a project includes carbon stock enhancement and the higher-level jurisdictional program does not, the project proponent may register another project to account for these activities independently.

6) Where a jurisdictional FREL has not been updated in accordance with the requirements in Section 3.12.29 (e.g., where a jurisdictional FREL has not been reassessed within the required timeframe and has expired), projects and lower-level jurisdictional programs that have been nested into it may request an extension to continue using the project baselines and lower-level jurisdictional FRELs allocated from the higher-level jurisdictional FREL. The allocated project baseline or lower-level jurisdictional FREL may be used for up to 24 months or a period defined by the higher-level jurisdictional proponent, whichever is shorter, after the higher-level jurisdictional FREL expires. Where applicable, project proponents and lower-level jurisdictional proponents shall provide a letter from the higher-level jurisdictional proponent that states the allowed extension period.

3.13.4 Where a project or lower-level jurisdictional program is registered after the registration of a higher-level jurisdictional FREL (e.g., where a higher-level jurisdictional FREL has been registered and a nested project or lower-level jurisdictional program is subsequently registered), the project or lower-level jurisdictional program may maintain their allocated

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baseline or lower-level FREL for the remaining of the current FREL validity period and the subsequent FREL validity period, after which they shall adopt a reassessed allocated baseline or lower-level FREL.

For example, when a project is registered in year 3 of a 4-year FREL validity period, it may maintain its allocated baseline for the remaining of that FREL validity period (1 year), and for the duration of the following FREL validity period (4 years). After 5 years, the project would need to adopt the allocated baseline corresponding to the reassessed FREL.

3.13.5 Where the scope of the higher-level jurisdictional FREL is narrowed at the time of FREL update, a project baseline or a lower-level jurisdictional FREL may be developed and registered for the removed REDD activity, GHG source or carbon pool to allow projects and lower-level jurisdictional programs to continue claiming GHG emission reductions from such activities, GHG sources or carbon pools.

3.13.6 Where a higher-level jurisdictional FREL has been registered, projects and lower-level FRELs (independent or as part of a jurisdictional program) going beyond its scope may be subsequently registered to account for the excluded activities, pools and GHG sources independently. If, at a later date, the scope of the higher-level FREL is broadened to cover such activities, pools and GHG sources, the transition requirements set out in Section 3.13.3 above shall be applied.

3.13.7 Where any transition period has expired and projects or lower-level jurisdictional programs are nested within a higher-level jurisdictional program, nested project baselines and lower-level jurisdictional FRELs shall be updated and revalidated, noting the following:

1) Where a lower-level jurisdictional program is nested within a higher-level jurisdictional program, the following applies:

   a) The lower-level jurisdictional program shall adopt all relevant activities, GHG sources and carbon pools included in the higher-level FREL;

   b) The lower-level FREL allocation shall be updated with the same frequency as the higher-level FREL that it is nested under;

   c) Allocated lower-level FREL updates shall be completed and validated within a time period of 18 months following the validation of the higher-level jurisdictional FREL;

   d) The updated lower-level jurisdictional FREL shall be used to estimate the GHG emission reductions occurring starting on the date of validation of the higher-level jurisdictional FREL.

2) Where the project is nested within a jurisdictional program, the following applies:

   a) Nested projects shall adopt all relevant activities, GHG sources and carbon pools included in the higher-level FREL;

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b) The allocated project baseline shall be updated and validated within a grace period of 18 months after the higher-level jurisdictional FREL is validated;

c) The allocated project baseline shall be used to estimate the GHG emission reductions occurring starting from the date of validation of the higher-level jurisdictional FREL.

3.14 Monitoring

Concept

Monitoring refers to the collection and analysis of data to allow the assessment of the GHG emission reductions generated by jurisdictional programs and nested projects and lower-level jurisdictional programs during a given time period in accordance with the monitoring plan set out in the program and project descriptions.

Program Requirements

3.14.1 Jurisdictional proponents shall monitor the activities and carbon pools that were selected in the jurisdictional FREL using the same methods used to set the FREL.

3.14.2 The geographic area to be monitored shall be the entire forested area of the jurisdiction, though certain areas may be excluded under the following conditions:

1) Where they are determined not to have been impacted by the jurisdictional 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 projects in accordance with Sections 3.12.9 and 3.12.11, respectively;

3) Monitoring reports shall cover the entire jurisdiction (other than any areas allowed to be excluded as set out in this Section 3.14.2(1) and 3.14.2(2), and any leakage belts where applicable.

3.14.3 Monitoring shall be carried out at least every two years and verification shall be conducted at least once per FREL validity period (i.e., every 4 to 6 years, as applicable, starting from the program start date or the end of the last FREL validity period). The periodicity of measurements is set out in Sections 3.12.15 and 3.12.23.

3.14.4 The jurisdictional proponent shall use the *JNR Monitoring Report Template* or an approved combined program description template (e.g., the *JNR REDD+ SES Program Monitoring Report Template*) available on the Verra website and adhere to all instructional text within the template. The jurisdictional monitoring report describes all the data and information related to the monitoring of GHG emission reductions.

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3.14.5 The monitoring period of the jurisdictional monitoring report shall be a distinct time period that does not overlap with previous monitoring periods. In addition, monitoring periods shall be contiguous with no time gaps between them and in aggregate shall cover the entire program crediting period.

Nesting Requirements

Higher-Level Jurisdictional Programs

3.14.6 It is considered best-practice to incorporate independently verified lower-level monitoring results (e.g., from projects or lower-level jurisdictions) into higher-level monitoring. Where a project or lower-level jurisdictional program has more accurate GHG emissions factors, it is recommended that such emission factors are incorporated at the higher–level jurisdictional program at the subsequent jurisdictional FREL update.

3.14.7 Where higher- and lower-levels use the same data and methods to estimate GHG emission reductions, lower-level monitoring results 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 estimated at higher- and lower-levels.

3.14.8 However, where higher and lower levels use different data and methods to estimate GHG emission reductions, this may result in discrepancies between GHG emission reductions at the higher- and lower-levels. The highest-level registered jurisdictional proponent within a country shall determine which level of monitoring results shall be used to reconcile any discrepancies between levels at the time of validation in the program description.

For example, a jurisdiction may choose to designate the jurisdictional program or the project-level monitoring results to be used for reconciliation.[22] The higher-level 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 FREL update. Where the selected level has been changed, it shall be stated in the monitoring report and shall apply for future monitoring periods (only).

3.14.9 Where there are inconsistent monitoring results between higher- and lower-level monitoring for a given geographic area, the selected level shall be used for reconciliation.

3.14.10 Where higher-level monitoring results are used to reconcile any discrepancies between monitoring levels as set out in Section 3.18.4 below, and this reconciliation results in a negative number of GHG emission reductions at the lower-level jurisdictional program or project level, an overestimation will be assumed to have occurred at the lower level. Where

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[22] 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 because the subset area only represents a proportion of collected ground data.

lower-level monitoring results are used to reconcile any discrepancies between monitoring levels as set out in Section 3.18.4 below, and this reconciliation results in a negative number of GHG emission reductions at the jurisdictional level, an overestimation will be assumed to have been registered by the jurisdictional program. Where such overestimations are identified after VCUs have been used, they shall be treated as reversals in accordance with Section 3.17 and shall be discounted in the subsequent monitoring period.

For example, if project monitoring results estimate a total of 1,000 tonnes of GHG emission reductions achieved within the project area, but jurisdictional monitoring results would estimate only 900 tonnes of GHG emission reductions achieved in the project area, and the jurisdictional results have been chosen for reconciliation, the project would treat the 100-tonne GHG emission reductions discrepancy as a reversal and account for this in the subsequent monitoring period.

Projects and Lower-Level Jurisdictional Programs

3.14.11 Nested projects shall follow the monitoring requirements set out in the methodology applied to the project, except where the requirements set out in this section take precedence.

3.14.12 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 accuracy requirements set out in Section 3.15 or after they have been refined as necessary to achieve such accuracy.

3.14.13 Nested projects and nested lower-level jurisdictional programs may undergo periodic monitoring and verification, and request issuance of credits, at different intervals than the higher jurisdictional level, in accordance with Section 3.14.3 above. However, such projects and lower-level jurisdictional proponents shall reconcile monitoring results with the higher-level at least once every FREL validity period years, except when operating within a transition period as set out in Section 3.13.

For example, where a jurisdictional proponent conducts monitoring and verification only at the end of a FREL validity period of 6 years and a nested project monitors and verifies in year 3 of such period, project and jurisdictional proponents would need to reconcile monitoring results by the end of year 6 before the jurisdictional program undergoes verification.

3.15 Uncertainty

Concept

Uncertainty is a characteristic of a measurement or sample that describes the dispersion of the values that could be reasonably attributed to the measurement. It is determined for the measurements used to estimate GHG emissions and GHG emission reductions achieved by program activities. Uncertainty discounts are used to ensure that estimates are conservative.

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Program Requirements

3.15.1 Jurisdictional programs shall undertake an analysis of uncertainty in estimating GHG emissions and GHG emission reductions.

3.15.2 A qualitative uncertainty analysis shall be undertaken that lays out how systematic uncertainty and random uncertainty are reduced as far as possible through the use of high-quality data and adequate quality management procedures.

3.15.3 A quantitative analysis of remaining random uncertainty shall be undertaken. Jurisdictional proponents shall calculate error propagation for the GHG emissions estimated for the FREL historical reference period and for the monitoring period. In addition, jurisdictional proponents shall apply a Monte Carlo analysis for GHG emission reduction estimates.

3.15.4 Uncertainties shall be reported referring to the half width of the two-sided 90% confidence interval. Uncertainties should be reported in the units of measurement for the estimate in question and as a percentage of the mean estimate.

3.15.5 Uncertainty requirements for activity data are set out in Sections 3.12.17 to 3.12.19. The area estimates of deforestation and of forest degradation for each forest type shall be accompanied by an estimate of the associated uncertainty. As set out in Section 3.12.18, sampling uncertainty associated with sample plot allocation for visual inspection of land-use transitions in satellite imagery shall be included.

3.15.6 The uncertainty requirements for emission factors are set out in Sections 3.12.25 to 3.12.28. Emission factors for each forest type shall be accompanied by an uncertainty estimate. According to the requirements in Section 3.12.25, the following sources of uncertainty are to be covered:

1) Uncertainty associated with calculation parameters such as the carbon fraction, root-to-shoot ratios and others.

2) Sampling uncertainty associated with plot allocation for field inventories for all carbon pools.

3) Uncertainty associated with default values for litter and deadwood in forests, and for all pools in non-forest vegetation.

4) Other sources of uncertainty, e.g., associated with allometric equations, can be covered optionally.

3.15.7 The uncertainty of GHG emission estimates shall be determined based on the uncertainties of activity data and of emission factors as laid out in Sections 3.15.5 and 3.15.6 above.

3.15.8 Uncertainties in estimating leakage do not need to be considered for estimating GHG emission reduction uncertainty.

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3.15.9 To estimate the uncertainty of emission reductions using the Monte Carlo analysis, the following applies:

1) The Monte Carlo analysis supersedes the results of error propagation undertaken with regards to the establishment of uncertainty discounts.

2) The same sources of uncertainty shall be covered that are considered for error propagation following the requirements in Sections 3.15.5 and 3.15.6 above.

3) Distributional assumptions shall be justified for each simulated variable. Bootstrapping may also be used.

4) A minimum of 10,000 model runs shall be conducted.

5) The results of the Monte Carlo analysis shall be compared against the results of the error propagation. Material differences shall be explained referring to distributional assumptions and the occurrence of covariances.

6) For the Monte Carlo analysis, generally recognized good practice should be followed in setting up the calculations.[23]

3.15.10 Jurisdictional programs shall discount the GHG emission reduction estimates in order to reduce the risk of overestimation.[24] The discounting shall be based on the results of the Monte Carlo simulation and the discount factors provided in Table 1.[25]

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[23] Guidance is available in the IPCC guidance. A relevant template has been made available by the FAO that can be used: http://www.fao.org/redd/information-resources/tools/en/

[24] For the GHG emission during the monitoring period, "discounting" means increasing emission estimate.

[25] Background on this approach to discounting is available in: Neeff, T. 2021. What is the risk of overestimating emission reductions from forests – and what can be done about it. Climatic Change. accepted for publication.

Table 1. Uncertainty discount factors for GHG emissions and GHG emission reductions[26]

Uncertainty of the volume of GHG emissions and GHG emission reductions	Discount factor	Uncertainty of the volume of GHG emissions and GHG emission reductions	Discount factor
95% - 100%	-25.53%	45% - 50%	-12.44%
90% - 95%	-24.22%	40% - 45%	-11.13%
85% - 90%	-22.91%	35% - 40%	-9.82%
80% - 85%	-21.60%	30% - 35%	-8.51%
75% - 80%	-20.29%	25% - 30%	-7.20%
70% - 75%	-18.99%	20% - 25%	-5.89%
65% - 70%	-17.68%	15% - 20%	-4.58%
60% - 70%	-16.37%	10% - 15%	-3.27%
55% - 60%	-15.06%	5% - 10%	0.0%
50% - 55%	-13.75%	0% - 5%	0.0%

3.15.11 GHG emission reduction estimates with uncertainties that fall outside the range in Table 1 are not eligible for crediting.

3.15.12 The discount factors shall be multiplied by the estimated GHG emission reductions to calculate the conservativeness discount. The conservatively discounted GHG emission reductions volume shall be calculated by subtracting the conservativeness discount from the estimated GHG emission reductions.

[26] The discounting shall be based on the results of the Monte Carlo simulation and the resulting uncertainty, i.e., the half-width of the two-sided 90% confidence interval as percentage of the mean estimate. The discount factors are given by the following:

- If the uncertainty is smaller or equal to 10% of the mean, then the discount factor is 0%.
- If the uncertainty is greater than 10% of the mean and smaller than 100%, then: discount factor = - uncertainty / $t_{alpha=10\%}$ * $t_{alpha=66.6\%}$. In this, uncertainty is the half width of the 90% confidence interval as percentage of the mean estimate; $t_{alpha=10\%}$ is the t-value for the two-sided 90% confidence interval, approximately 1.6449; $t_{alpha=66.6\%}$ is the t-value for a one-sided 66.66% confidence interval, approximately 0.4307. The discount factor is in percent.
- If the uncertainty of the GHG emission reduction estimate is equal to or greater than 100%, the jurisdictional programme is not eligible for crediting.

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For example, should a jurisdictional program estimate GHG emission reductions of 100,000 tonnes with an uncertainty of 31%, then the discount factor would amount to -8.51%. The conservativeness discount would then amount to 8.51% * 100,000 tonnes = 8,510 tonnes. The conservatively discounted GHG emission reductions would therefore amount to 100,000 tonnes – 8,510 tonnes = 91,490 tonnes.

3.15.13 At the end of the FREL validity period, jurisdictional programs may optionally estimate the aggregate uncertainty of estimated GHG emission reductions over the whole period (and for several monitoring and verification events), as well as the applicable conservativeness discounts. Should these applicable conservativeness discounts differ from the sum of discounts applied for the individual monitoring events, then the volume of creditable GHG emission reductions will be adjusted accordingly.

For example, consider a country that undergoes two verifications during a 5-year reference-level validity period. The two verifications yield GHG emission reductions estimates of 1,000,000 tCO_2e with 80% uncertainty, and 2,000,000 tCO_2e with 50% uncertainty, respectively. Conservativeness discounts amount to -20.1% and -12.0%, that is 201,000 tCO_2e and 240,000 tCO_2e, for a total of 441,000 tCO_2e. The country also calculates the aggregate GHG emission reductions estimate of 3,000,000 tCO_2e with 45% uncertainty. The conservativeness discount for the aggregate GHG emission reduction estimate amounts to only -10.7%, that is 321,000 tCO_2e. The creditable amount of GHG emission reductions therefore increases by 441,000 – 321,000 = 120,000 tCO_2e.

Nesting Requirements

Higher-Level Jurisdictional Program

3.15.14 Before allocating project baselines and lower-level jurisdictional FRELs, the higher-level jurisdictional FREL is required to be conservatively discounted, in order to reduce the risk of overestimation. This discount is automatically applied by the *JNR Allocation Tool* based on the uncertainty estimate of the higher-level jurisdictional FREL. The *JNR Allocation Tool* automatically calculates the uncertainty using error propagation from its required inputs.

Note – Since uncertainty discounts are applied to the higher-level jurisdictional FREL before it is allocated to nested projects or lower-level jurisdictional programs through the application of the JNR Allocation Tool*. Therefore, the allocated project baseline and lower-level jurisdictional FREL are not required to apply a further discount for uncertainty.*

Projects and Lower-Level Jurisdictional Programs

3.15.15 Nested projects and lower-level jurisdictional programs shall undertake an analysis of uncertainty in estimating GHG emissions.[27] Nested projects and lower-level jurisdictional programs shall follow the requirements set out in Sections 3.15.2 to 3.15.10, above, where

[27] Nested projects and lower-level jurisdictional programs cannot sensibly calculate the uncertainty of the GHG emission reduction estimate because their baseline and/or FREL was allocated (and the allocation does not come with an uncertainty estimate).

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applicable. A qualitative and a quantitative uncertainty analysis shall be undertaken, where use of Monte Carlo simulation is optional. The rules on uncertainties of activity data and emission factors in Sections 3.15.5 and 3.15.6 shall be followed.

3.15.16 Both the estimate of GHG emissions in the allocated project baselines or lower-level FRELs and the estimate of GHG emission during the monitoring period shall be accounted for conservatively.

1) The higher-level jurisdictional FREL is required to be conservatively discounted, in accordance with the requirements set out in Section 3.15.14. This discount is automatically applied by the *JNR Allocation Tool* before allocating project baselines or lower-level jurisdictional FRELs.

2) Projects and lower-level jurisdictional program proponents must also conservatively discount the estimates of monitored GHG emissions during each monitoring period, [28] using the discounting factors provided in Table 1.[29]

3.15.17 At the end of the reference level validity period, projects and lower-level jurisdictional programs may optionally estimate the aggregate uncertainty of estimated emission over the whole period (and for several monitoring and verification events), as well as the applicable conservativeness discounts. Should these applicable conservativeness discounts differ from the sum of discounts applied for the individual monitoring events, then the volume of creditable emission reductions will be adjusted accordingly.

3.16 Leakage

Concept

Leakage is the net change of anthropogenic GHG emissions that occurs outside the jurisdictional program boundary and is attributable to program activities. It is important for all jurisdictional programs to take steps to mitigate leakage to the extent possible and account for leakage within the jurisdiction (e.g., from deforestation to forest degradation). Jurisdictional programs do not account for international leakage, but subnational programs must account for leakage to neighbouring subnational jurisdictions within the same country in cases where deforestation in those jurisdictions is not accounted for under a GHG program.

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[28] For the GHG emission during the monitoring period, "discounting" means increasing emission estimate.
[29] The JNR Allocation Tool automatically calculates conservativeness discounts using an equation that also underlies the tabular values. The discounts in the JNR Allocation Tool can slightly differ from the tabular values.

Program Requirements

General

3.16.1 Jurisdictional programs shall consider the three types of leakage (activity shifting, market leakage and ecological leakage) described in the VCS Program document *VCS Methodology Requirements*. Jurisdictional programs shall quantify any leakage from deforestation to forest degradation in accordance with Section 3.16.10(2)1)c) and any leakage to wetland areas in accordance with Section 3.16.7 below.

3.16.2 Leakage occurring outside the country (i.e., international leakage) does not need to be accounted for or deducted from jurisdictional program GHG emission reductions, though steps shall be taken to mitigate potential international leakage, as set out in Section 3.16.8, below.

3.16.3 Jurisdictional proponents shall identify the FREL drivers of deforestation or forest degradation and their potential for leakage.

3.16.4 Jurisdictional proponents shall develop and implement appropriate measures to avoid or reduce the risk of leakage where possible.

3.16.5 Jurisdictional programs shall not account for positive leakage (i.e., where GHG emissions decrease outside a jurisdictional program area due to jurisdictional program activities). Note that where positive leakage occurs, jurisdictional proponents are encouraged to include information in the monitoring report even though it cannot be accounted for in the jurisdictional program's net GHG benefit.

3.16.6 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.*

3.16.7 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 (e.g., 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 3.16.9. Emission factors for wetlands shall be conservative and based on empirical data or other sources published in scientific peer-reviewed literature, such as the *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*.

National Jurisdictional Programs

3.16.8 National jurisdictional program proponents 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 3.16.9 on subnational leakage, but are not required to monitor and account for such leakage, as set out in Section 3.16.2

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Subnational Jurisdictional Programs

3.16.9 Subnational jurisdictional programs shall establish procedures to mitigate and quantify all significant sources of leakage outside the jurisdictional boundaries, but within the same country, except where leakage occurs to another jurisdictional program, as set out in Section 3.16.10, below.

3.16.10 Any residual leakage (i.e., after implementing mitigation measures) outside a subnational jurisdictional program shall be accounted for as follows:

1) Where leakage from one jurisdictional program may result in an increase in GHG emissions in another jurisdictional program 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 jurisdictional program boundary, regardless of whether some GHG emissions are the result of leakage from the other jurisdiction. In this case, jurisdictional proponents are not required to monitor or account for any leakage in these neighboring jurisdictions.

2) Where leakage from the jurisdictional program may result in an increase in GHG emissions in a neighboring subnational jurisdiction within the same country 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:

   a) 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 Program methodology or tool. A leakage belt is an area surrounding the border of the jurisdiction that is subject to monitoring 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 program uses a leakage belt method for monitoring and reporting leakage a FREL for the leakage belt shall be established. Portions of the leakage belt falling in neighboring jurisdictions shall be excluded from the leakage belt where a neighboring jurisdictional program is registered under the VCS Program or another GHG program.

   b) The *JNR Leakage Tool* for leakage associated to the production of global commodities, domestic markets and subsistence activities and for leakage from avoided deforestation activities to forest degradation (note that additional tool(s) may be developed in the future by Verra or by a third-party subject to approval via the VCS Program methodology approval process).

   c) 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

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FREL but that are at risk of causing leakage (e.g., where deforestation is accounted for and forest degradation is not, leakage may occur from areas that would have been deforested, causing forest degradation).

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

Nesting Requirements

Projects and Lower-Level Jurisdictional Programs

3.16.11 A project nested into a jurisdictional program shall apply the leakage requirements set out in the *VCS Standard* and applied methodology to calculate project leakage.

3.16.12 Projects that have the potential to displace GHG emissions outside the boundaries of the jurisdictional program into which they are nested shall account for such leakage in accordance with the requirements set out in the *VCS Standard* and applied methodology.

3.16.13 Lower-level jurisdictional programs developed under Scenario 2 shall follow the relevant requirements set out in Sections 3.16.1 to 3.16.10, above. Lower-level jurisdictional programs that are developed under Scenario 3 shall follow the requirements set out in Section 3.15 of the *JNR Scenario 3 Requirements.*

3.17 Non-Permanence Risk and Natural Disturbances

Concept

Non-permanence risk in jurisdictional programs, including those with nested projects or lower-level jurisdictional programs, is addressed through the use of a jurisdictional risk analysis and the pooled jurisdictional buffer pool. Buffer credits are cancelled to cover carbon known, or believed, to be lost.

Program Requirements

3.17.1 Jurisdictional proponents shall prepare a non-permanence risk report in accordance with the VCS Program document *JNR Non-Permanence Risk Tool*. Non-permanence risk reports shall be prepared using the *JNR Non-Permanence Risk Report Template*, which may be included as an annex to the jurisdictional program description or monitoring report, as applicable, or provided as a stand-alone document.

3.17.2 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.

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3.17.3 Jurisdictional proponents may choose to contribute a higher proportion of credits than that determined by the *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 shall take place after the quantity of buffer credits determined by the application of the *JNR Non-Permanence Risk Tool* has been deducted from the jurisdictional program's net GHG benefit.

3.17.4 Recognizing that non-permanence risk ratings may change over time; jurisdictional proponents shall perform a non-permanence risk analysis at every verification event. Jurisdictional programs 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 the VCS Program document *JNR Registration and Issuance Process.*

3.17.5 Assessment of non-permanence risk analyses may be conducted by the same validation/verification body that conducts validation or verification of the jurisdictional program and at the same time. The rules and requirements for the process of assessment by validation/verification bodies are set out in the VCS Standard.

3.17.6 Where an event occurs that is likely to qualify as a loss event (see the VCS Program document *Program Definitions* for definition of loss event) and VCUs have been previously issued, the jurisdictional proponent that has experienced a potential loss shall notify Verra of the loss within 6 months of discovering the event, and prepare and submit a loss event report to the Verra registry, as follows:

1) The loss event report shall be prepared using the VCS Program *Loss Event Report Template*. It shall include a conservative estimate of the loss of previously verified GHG emission reductions due to losses in carbon stocks from 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 jurisdictional proponent 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 Verra website.

3) The loss event report shall be submitted to the Verra registry within 2 years of the date of discovery of the loss event.

4) The Verra registry 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.

3.17.7 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 3.18.1. In addition, the following applies:

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1) Where the net GHG benefit of the jurisdictional program compared to the FREL for the monitoring period is negative, taking into account GHG emissions and leakage from all (VCS Program) activities within the jurisdiction, 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 Verra registry 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 GHG emissions and leakage from all (VCS Program) activities within the jurisdictional program boundaries (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 the VCS Program document *Program Definitions* for definition of natural disturbance), except for those associated with certain geologic and weather-related events, as set out in Section 3.12.9 (noting that both are also excluded from the FRELs), 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 GHG emission reductions generated within the jurisdictional program boundaries during a given monitoring period) and infrequent (i.e., not captured in the jurisdictional FREL reference period), affected areas shall be identified, and gross GHG 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 GHG emissions will be accounted for and addressed through the buffer, rather than being subtracted from the net GHG emissions reductions generated within the jurisdictional program boundaries. This will prevent such losses from affecting the number of credits available to jurisdictional proponents.

   c) 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

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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.

3.17.8 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 jurisdictional program has contributed to date to the jurisdictional pooled buffer account.

2) Jurisdictional programs 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.

3) 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 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).[30]

3.17.9 Where a 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 jurisdictional pooled buffer account may have been reversed or lost in the field. Where a 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 the VCS Program document *Registration and Issuance Process*.

3.17.10 Any remaining balance of buffer credits is cancelled at the end of the program crediting period.

3.17.11 Although buffer credits are cancelled to cover carbon known or believed to be lost, the VCUs already issued to jurisdictional programs that subsequently experience a reversal are not cancelled and do not have to be cancelled. Rather, all VCUs issued to jurisdictional programs are permanent. The VCS Program approach provides environmental integrity because the AFOLU and jurisdictional pooled buffer accounts are managed to ensure losses from jurisdictional program failures are covered, and the net GHG benefits across the entire pool of

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

REDD+ projects and jurisdictional programs will be greater than the total number of VCUs issued.

Nesting Requirements

Projects and Lower-Level Jurisdictional Programs

3.17.12 Nested projects shall follow non-permanence risk requirements set out in the *VCS Standard,* except where requirements in this Section 3.17 take precedence.

3.17.13 Lower-level jurisdictional programs developed under Scenario 2 shall follow requirements in this Section 3.17. Lower-level jurisdictional programs that are developed under Scenario 3 shall follow the requirements set out in Section 3.16 of the *JNR Scenario 3 Requirements.*

3.17.14 Projects nested under a VCS jurisdictional program shall deposit buffer credits into the jurisdictional pooled buffer account.

3.17.15 Lower-level jurisdictional programs shall deposit buffer credits into the jurisdictional pooled buffer account.

3.17.16 Nested projects and lower-level jurisdictional programs shall prepare a non-permanence risk report and deposit buffer credits into the jurisdictional pooled buffer account and/or AFOLU pooled buffer account in accordance with requirements set out in Section 3.17 and *the VCS Standard,* respectively, at both validation and verification.[31]

3.17.17 Projects and lower-level jurisdictional programs registered prior to the registration of a higher-level VCS jurisdictional program that includes the project or program area shall transfer their existing buffer credits to the jurisdictional buffer pool once such a higher-level jurisdictional program has been registered and after the end of the transition period.

3.17.18 Where project and jurisdictional proponents may be credited directly, in the event of a reversal[32] in non-project areas of a jurisdiction, the reversal shall be handled as follows to avoid penalising performing entities:

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

2) The VCS registry shall issue VCUs to the (lower-level) performing entities in an amount equal to the number of GHG emission 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*

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[31] Where higher-level jurisdictional programs and lower-level 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.

[32] 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.

within registered national jurisdictions that include nested subnational jurisdictional programs.

3) Where the jurisdictional proponent has previously been issued VCUs, the jurisdictional proponent shall replenish the jurisdictional pooled buffer account in accordance with requirements set out in the *JNR Registration and Issuance Process.*

3.18 Quantification of GHG Emission Reductions

Concept

The net GHG emission reductions achieved by jurisdictional programs are the basis for the volume of VCUs that can be issued by the jurisdictional program and any nested projects or lower-level jurisdictional programs. Net GHG emission reductions for jurisdictional programs are determined as the difference between the GHG emissions from GHG sources and carbon pools in the jurisdictional FREL scenario and the jurisdictional REDD program scenario.

Program Requirements

3.18.1 Net GHG emission reductions (the net GHG benefit) shall be determined as the difference between the GHG emissions from GHG sources, and carbon pools in the jurisdictional FREL scenario and the jurisdictional program scenario (including any GHG emissions resulting from the implementation of jurisdictional program activities), minus leakage.

3.18.2 GHG emissions and GHG emission reductions for the monitoring period shall be estimated for each stratum and for deforestation and forest degradation where applicable.

3.18.3 Each estimate of GHG emissions and GHG emission reductions shall be accompanied by an uncertainty estimate as determined in accordance with Section 3.15.

Nesting Requirements

General

3.18.4 As noted in Section 3.14.8, where higher-level jurisdictional programs and nested lower-level programs and projects estimate GHG emissions using different data and methods, discrepancies between GHG emission reductions estimates may occur. Where higher-level monitoring results are used to reconcile any discrepancies between monitoring levels (as set out in Section 3.14.10), nested projects and lower-level jurisdictional programs shall use the higher jurisdiction-level monitoring results from the same period at least once every FREL validity period to reconcile any discrepancies.

3.18.5 Where project-level monitoring results are used to reconcile any discrepancies between monitoring levels (as set out in Section 3.14.10), jurisdictional programs shall incorporate the monitoring results from lower levels from the same or overlapping periods.

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Higher-Level Jurisdictional Programs

3.18.6 The number of GHG credits available to be issued to the higher-level jurisdictional proponents is determined by subtracting out the buffer credits from the net GHG emission reductions associated with the jurisdictional program (which represent the program net GHG emissions minus FREL minus leakage) and subtracting any GHG emission reductions issued (or available to be issued) to nested projects and lower-level jurisdictional programs, including buffer credits. Credits and other forms of incentives issued or anticipated for the same GHG emission reductions under the VCS Program and another GHG program shall also be deducted in accordance with Section 3.7.2.

Note - Where the net GHG emission reductions associated with the higher-level jurisdictional program are negative (i.e. where the program GHG emissions, including leakage, are higher than its FREL), GHG emission reductions may still be issued to nested lower-level jurisdictional programs and projects in accordance with Section 3.17.18.

3.18.7 Buffer credits are calculated by multiplying the non-permanence risk rating, determined in accordance with the VCS Program document *JNR Non-Permanence Risk Tool*, by the total number of GHG emission reductions that may be issued to the jurisdictional program only, as set out in Section 3.17.

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

Projects and Lower-Level Jurisdictional Programs

3.18.9 Nested projects and lower-level jurisdictional program proponents shall calculate GHG emission reductions by comparing their GHG emission estimate during the monitoring period against the allocated project baseline or lower-level jurisdictional FREL, respectively.

3.18.10 Nested projects and lower-level jurisdictional programs may estimate, report and verify their GHG emission reductions at different time points than the higher-level jurisdictional program in accordance with Section 3.14.3.

3.18.11 The number of GHG credits issued to nested projects is determined by subtracting out the buffer credits from the net GHG emission reductions (including leakage) associated with the project. The buffer credits are calculated by multiplying the non-permanence risk rating (as determined by the *AFOLU Non-Permanence Risk Tool*) times the change in carbon stocks only. The full rules and procedures with respect to assignment of buffer credits are set out in the VCS Program document *JNR Registration and Issuance Process*.

3.18.12 The volume of GHG credits available to be issued to the lower-level jurisdictional proponents is determined by subtracting out the buffer credits from the net GHG emission reductions associated with the jurisdictional program (which represent the net of program emissions minus FREL minus leakage) and subtracting any GHG emission reductions issued (or available to be issued) to nested projects, including buffer credits. Credits and other forms of incentives issued or anticipated for the same GHG emission reductions under the VCS Program and

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another GHG program shall also be deducted in accordance with Section 3.7.2. Buffer credits are calculated by multiplying the non-permanence risk rating, determined in accordance with the VCS Program document *JNR Non-Permanence Risk Tool*, by the total number of GHG emission reductions that may be issued to the jurisdictional program only.

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4 GOVERNMENT APPROVAL, VALIDATION AND VERIFICATION REQUIREMENTS

4.1 Approvals

Concept

Different government entities may have control over components included in a jurisdictional program. Only the jurisdictional proponent with program authority may submit documentation for registering a jurisdictional program or authorize government agencies to register it on its behalf. Where there are multiple entities that have overlapping program authority, the jurisdictional proponent that is developing a jurisdictional program must secure an approval or non-objection from the national or subnational authority that shares the control over the program.

Program Requirements

4.1.1 The jurisdictional proponent shall provide documentary evidence establishing authority over the program (see the VCS Program document *Program Definitions* for the definition of program authority). Such documentation includes the national political and legal constitution and any valid delegation of authority via statutes, laws, or regulations.

4.1.2 Where national and subnational authorities control different of overlapping components of a jurisdictional program, the following applies:

1) Where a national jurisdictional program is developed and covers areas under the authority of a subnational jurisdiction, the national jurisdictional proponent shall provide evidence that the subnational jurisdiction endorses, approves or has no objection to, the registration of the national program.

2) Where a subnational program is developed and the national government exercises control over program elements, a subnational-level jurisdictional proponent shall provide evidence that the national government approves or has no-objection to the registration of the subnational program. Where the subnational jurisdictional proponent exercises full authority over the program, no further approvals are required.

   For example, a subnational government agency with control over forest and environmental management may register the jurisdictional program without a no-objection response from the national government. However, such jurisdictional proponents shall follow the

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stakeholder consultation requirements set out in Section 3.8, including consultation with any relevant national government agencies.

4.1.3 Where any domestic regulations exist for government approval of any element covered by the jurisdictional program (e.g., government approval of a jurisdictional FREL or approval of nested projects), evidence shall be provided to demonstrate that the jurisdictional program complies with any relevant regulation.

Nesting Requirements

4.1.4 Where nested projects can be credited directly and there is no relevant domestic regulation, they shall follow any approval procedures set out under the jurisdictional program. Where no such approval procedures have been set out, projects shall secure a no-objection letter from the jurisdictional approval authority.

4.2 Validation/verification and Registration

Concept

Validation is the independent assessment of the jurisdictional program by a validation/verification body that determines whether the program complies with the *JNR Requirements*. Verification is the periodic *ex-post* independent assessment by a validation/verification body the net GHG emission reductions that have occurred as a result of the jurisdictional program during the monitoring period, conducted in accordance with the *JNR Requirements*. Registration is the process of submitting documents to Verra to be listed on the Verra Registry.

Program Requirements

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

Non-Permanence Risk Analysis

4.2.2 The non-permanence risk analysis shall be assessed by a validation/verification body in accordance with the *VCS Standard*.

Registration

4.2.3 Jurisdictional programs may only be submitted to the Verra registry by jurisdictional government entities or agencies that qualify as jurisdictional proponents (see the VCS Program document *Program Definitions* for definition of jurisdictional proponent), or by another entity that is authorized by the jurisdictional proponent to do so (e.g., where the jurisdictional proponent is participating in a public-private partnership (PPP), and the PPP has been nominated as the authorized representative). National jurisdictional proponents may register national and/or subnational jurisdictional programs. Subnational jurisdictional proponents may register only their own jurisdiction's program. Note that FRELs (or other parts of the jurisdictional program)

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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.

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

Nesting Requirements

4.2.5 Nested projects shall follow the rules and requirements with respect to validation and verification and registration of projects as set out in the *VCS Standard* and the VCS Program document *Registration and Issuance Process*, respectively.

4.2.6 Lower-level jurisdictional programs developed under Scenario 2 shall follow the requirements set out in Section 4.2.1– 4.2.4, above. Lower-level jurisdictional programs that are developed under Scenario 3 shall follow the requirements set out in Section 4.2 of the *JNR Scenario 3 Requirements.*

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

IPCC Categories	UNFCCC REDD+ Activities	Broad VCS Program Jurisdictional and Nested REDD+ Activities	Major Activities	Broad VCS Program Project Activities	Specific VCS Program 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.		AUDD (avoided unplanned degradation)
					AUDD + RWE (avoided unplanned degradation plus wetland restoration)
					AUDD+ CIW (avoided unplanned degradation and wetland conservation)

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				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)

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APPENDIX 2 DOCUMENT HISTORY

Version	Date	Comment
v4.0	15 April 2021	Initial version released under VCS Version 4

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VERRA

Standards for a Sustainable Future

Verified Carbon Standard

Jurisdictional & Nested REDD+

Climate, Community & Biodiversity Standards

Sustainable Development Verified Impact Standard

Plastic Waste Reduction Standard

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