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Forest Ecosystem Restoration - Field Verification Standard

Version 1.0 for Public Consultation

Standard

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Contents

Acronyms

AFi: Accountability Framework initiative

BBOP: Business and Biodiversity Offsets Programme

CATIE: Centre for Tropical Agriculture Research & Training in Costa Rica

FAO: Food and Agriculture Organization

FPIC: Free, Prior and Informed Consent

FSC: Forest Stewardship Council

GPFLR: Global Partnership on Forest and Landscape Restoration

HCSA: High Carbon Stocks Approach

HCV(s): High Conservation Value(s)

ITTO: International Tropical Timber Organization

NTFPs: Non-timber Forest Products

PEFC: Programme for the Endorsement of Forest Certification Schemes

PPE: Personal Protective Equipment

RM: Restoration Manager

ROAM: Restoration Opportunities Assessment Methodology

RSPO: Roundtable for Sustainable Palm Oil

SAS: Sustainable Agriculture Standard

SER: Society for Ecological Restoration

SH&C: Smallholder and Community (operations)

SMEs: Small and Medium Enterprises

UNDRIPS: United Nations Declaration on the Rights of Indigenous Peoples

WHO: World Health Organization

WRI: World Resources Initiative

Glossary

Affected stakeholders*[1]: Any person, group of persons or entity that is or is likely to be subject to the effects of the activities of a Management Unit. Examples include, but are not restricted to (for example in the case of downstream landowners), persons, groups of persons or entities located in the neighbourhood of the Management Unit. The following are examples of affected stakeholders:

- Local communities
- Indigenous peoples
- Workers
- Forest dwellers
- Neighbours
- Downstream landowners
- Local processors
- Local businesses
- Tenure and use rights holders, including landowners
- Organisations authorised or known to act on behalf of affected stakeholders, for example social and environmental NGOs, labour unions, etc.

Alien species (exotic): A species, sub-species or lower taxon, introduced outside its natural past or present distribution; includes any part, gametes, seeds, eggs, or propagules of such species that might survive and subsequently reproduce. (Source: Convention on Biological Diversity (CBD), Invasive Alien Species Programme. Glossary of Terms as provided on CBD website.)

Culturally appropriate engagement*: Means/approaches for outreach to target groups that are in harmony with the customs, values, sensitivities, and ways of life of the target audience.

Customary rights*: Rights which result from a long series of habitual or customary actions, constantly repeated, which have, by such repetition and by uninterrupted acquiescence, acquired the force of a law within a geographical or sociological unit.

Ecological restoration: The process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed. (Ecosystem restoration is sometimes used interchangeably with ecological restoration, but ecological restoration always addresses biodiversity conservation and ecological integrity, whereas some approaches to ecosystem restoration may focus solely on the delivery of ecosystem services.) (Source: International Principles and Standards for the Practice of Ecological Restoration. Second Edition: September 2019. Society for Ecological Restoration.)

Fertiliser*: Mineral or organic substances, most commonly Nitrogen (N), Phosphate (P_2O_5) and Potassium (K_20), which are applied to soil for the purpose of enhancing plant growth.

Forest ecosystem restoration: Process of regaining ecological functionality and enhancing human well-being across deforested or degraded forest ecosystems, using the reference ecosystem and the changing environmental conditions it contemplates but also the social and economic conditions of the area.

Free, Prior and Informed Consent (FPIC): A legal condition whereby a person or community can be said to have given consent to an action prior to its commencement,

[1] All terms covered by the asterisk (*) are sourced or adapted from the FSC Glossary of Terms (FSC-STD-01-002, updated 19 October 2017)

based upon a clear appreciation and understanding of the facts, implications and future consequences of that action, and the possession of all relevant facts at the time when consent is given. Free, prior and informed consent includes the right to grant, modify, withhold or withdraw approval. (Source: Based on the Preliminary working paper on the principle of Free, Prior and Informed Consent of Indigenous Peoples (…) (E/CN.4/Sub.2/AC.4/2004/4 8 July 2004) of the 22nd Session of the United Nations Commission on Human Rights, Sub-commission on the Promotion and Protection of Human Rights, Working Group on Indigenous Populations, 19–23 July 2004.)

Invasive species: Species that are rapidly expanding outside of their native range. Invasive species can alter ecological relationships among native species and can affect ecosystem function and human health. (Source: Based on World Conservation Union (IUCN). Glossary definitions as provided on IUCN website.)

Indigenous Peoples: People and groups of people that can be identified or characterised as follows:

- The key characteristic or criterion is self-identification as Indigenous Peoples at the individual level and acceptance by the community as their member
- Historical continuity with pre-colonial and/or pre-settler societies
- Strong link to territories and surrounding natural resources
- Distinct social, economic or political systems
- Distinct language, culture and beliefs
- Form non-dominant groups of society
- Resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities. (Source: Adapted from United Nations Permanent Forum on Indigenous Issues, Factsheet 'Who are Indigenous Peoples?' October 2007; United Nations Development Group, 'Guidelines on Indigenous Peoples' Issues' United Nations 2009, United Nations Declaration on the Rights of Indigenous Peoples, 13 September 2007.)

Living income: net annual income (i.e. wage) required for a household in a particular place to afford a decent standard of living for all members of that household. (Source: Based on The ISEAL Living Income Coalition as provided on The Living Income website.)

Local communities*: Communities of any size that are in or adjacent to the Management Unit, and also those that are close enough to have a significant impact on the economy or the environmental values of the Management Unit or to have their economies, rights or environments significantly affected by the management activities or the biophysical aspects of the Management Unit.

Landscape*: A geographical mosaic composed of interacting ecosystems resulting from the influence of geological, topographical, soil, climatic, biotic and human interactions in a given area.

Native species: Species, sub-species, or lower taxon, occurring within its natural range (past or present) and dispersal potential (that is, within the range it occupies naturally or could occupy without direct or indirect introduction or care by humans). (Source: Convention on Biological Diversity (CBD), Invasive Alien Species Programme. Glossary of Terms as provided on CBD website.)

Natural forest*: A forest area with many of the principal characteristics and key elements of native ecosystems, such as complexity, structure and biological diversity, including soil characteristics, flora and fauna, in which all or almost all the trees are native species, not classified as plantations. 'Natural forest' includes the following categories:

- Forest affected by harvesting or other disturbances, in which trees are being or have been regenerated by a combination of natural and artificial regeneration with species typical of natural forests in that site, and where many of the above-

ground and below-ground characteristics of the natural forest are still present. In boreal and north temperate forests which are naturally composed of only one or few tree species, a combination of natural and artificial regeneration to regenerate forest of the same native species, with most of the principal characteristics and key elements of native ecosystems of that site, is not by itself considered as conversion to plantations.

- Natural forests which are maintained by traditional silvicultural practices including natural or assisted natural regeneration.
- Well-developed secondary or colonising forest of native species which has regenerated in non-forest areas.
- The definition of 'natural forest' may include areas described as wooded ecosystems, woodland and savanna.

Natural forest does not include land that is not dominated by trees, was previously not forest, and that does not yet contain many of the characteristics and elements of native ecosystems. Young regeneration may be considered as natural forest.

Non-timber forest products* (NTFPs): All forest products except timber, including other materials obtained from trees such as resins and leaves, as well as any other plant and animal products. Examples include, but are not limited to seeds, fruits, nuts, honey, palm trees, ornamental plants and other forest products originating from a forest matrix.

Pesticide*: Any substance or preparation used to protect plants or wood or other plant products from pests; in controlling pests; or in rendering such pests harmless. This definition includes insecticides, rodenticides, acaricides, molluscicides, larvicides, fungicides and herbicides.

Plantation*: A forest area established by planting or sowing using either alien or native species, often with one or few species, regular spacing and even ages, and which lacks most of the principal characteristics and key elements of natural forests.

Rare species: Species that are uncommon or scarce, but not classified as threatened. These species are located in geographically restricted areas or specific habitats or are scantily scattered on a large scale. They are approximately equivalent to the IUCN (2001) category of Near Threatened (NT), including species that are close to qualifying for, or are likely to qualify for, a threatened category in the near future. They are also approximately equivalent to imperilled species. (Source: Based on IUCN. (2001). IUCN Red List Categories and Criteria: Version 3.1. IUCN Species Survival Commission. IUCN. Gland, Switzerland and Cambridge, UK.)

Reference ecosystem: a representation of a native ecosystem that is the target of ecological restoration (as distinct from a reference site). A reference ecosystem usually represents a non-degraded version of the ecosystem complete with its flora, fauna, and other biota, abiotic elements, functions, processes, and successional states that might have existed on the restoration site had degradation not occurred and adjusted to accommodate changed or predicted environmental conditions. (Source: Based on the International Principles and Standards for the Practice of Ecological Restoration. Second Edition: September 2019. Society for Ecological Restoration.)

Restoration Manager*: Person or organisation that has been given the responsibilities by land or forest owners for the management or utilisation of their land or forest resources, including operational planning and restoration operations

Rewilding: comprehensive, often large-scale, conservation effort focused on restoring sustainable biodiversity and ecosystem health by protecting core wild/wilderness areas, providing connectivity between such areas, and protecting or reintroducing apex predators and highly interactive species (keystone species). (Source: rewilding.org.)

Rights holders: Any person, group of persons or entity (typically Indigenous Peoples or other local communities) that holds customary or legal use rights, in accordance with UNDRIPS and national laws or traditions.

Smallholder and Community Operations: This term covers both the Small Size Operations (under 100 ha) and the Operations managed at communal level by Indigenous or Traditional peoples.

Successional forests: Forests in the process of regenerating towards a more mature state, including early, mid or late successional states.

Threatened species: Species that meet the IUCN (2001) criteria for Vulnerable (VU), Endangered (EN) or Critically Endangered (CR), and are facing a high, very high or extremely high risk of extinction in the wild. (Source: Based on IUCN. (2001). IUCN Red List Categories and Criteria: Version 3.1. IUCN Species Survival Commission. IUCN. Gland, Switzerland and Cambridge, UK.)

Traditional peoples: Traditional peoples are social groups or peoples who do not self-identify as Indigenous and who affirm rights to their lands, forests and other resources based on long-established custom or traditional occupation and use. (Source: Forest Peoples Programme, Marcus Colchester, 7 October 2009.)

Workers: All employed persons including public employees as well as 'self-employed' persons. This includes part-time and seasonal employees, of all ranks and categories, including labourers, administrators, supervisors, executives, contractor employees as well as self-employed contractors and sub-contractors. (Source: ILO Convention C155 Occupational Safety and Health Convention, 1981.)

A. Introduction

The focus of this standard is performance assessment of forest ecosystem restoration at the field level. Numerous frameworks or foundational documents lay out the key aspects, principles or elements of restoration (see References), whether driven by ecological, economic or social concerns. This document provides a standard for field verification of performance in implementing forest ecosystem restoration – where the restoration is technically, environmentally, socially and economically sound and applicable in tropical, temperate and boreal biomes.

Forest ecosystem restoration may include use of techniques such as management of natural forest succession, agroforestry, tree planting through reforestation, or rewilding. Priority is placed on use of native species, but also allowing the use of alien species where such species provide "nursing" or similar qualities, leading towards the re-establishment of natural forest cover or ecosystem function. Depending on the site, restoration may include a focus not only on forest or trees, but other constituent elements of the target natural forest ecosystem, e.g. wetlands, riparian zones, etc.

B. Intent in Terms of Scale and Application of the Standard

This standard was designed to audit performance at any scale (small to large) and any time point in an ongoing restoration process or project (i.e. implementation of restoration interventions has started). Small operations are considered those restoring less than 100 hectares (either a single property or multiple properties in a group), large are defined as being above 50,000 ha, and medium-size are the operations in between[2].

Operations managed by Communities[3] are also grouped with small operations and together referred to as Smallholder and Community operations (SH&C). The standard can be used for first-party, second-party or third-party evaluations or audits of performance.

- **First-party evaluations** are carried out by restoration project implementers or managers themselves (e.g. staff who are directly implementing actual restoration activities).
- **Second-party evaluations** are done by advisors, auditors or consultants who are a step removed from actual implementation and are focused on providing a performance review service. Normally, second party evaluators also provide recommendations for implementation improvement.
- **Third-party evaluations** are performed by auditors who are independent, meaning they are not directly involved in implementing restoration; and nor do they provide recommendations or technical guidance for restoration implementation. Third-party auditors typically must ensure that they are free from conflict of interest – i.e. they have no direct financial or other economic interest in the restoration effort they are auditing. Although third-party auditors are expected to be open to the concerns or observations of other stakeholders, they are expected to make independent decisions based on the evidence observed or provided (documents, field observations, stakeholder comments in writing or in person, etc.). Third-party auditing is a common characteristic of stewardship certification

[2] The hectare thresholds for large and smaller operations may be adjusted based on geography or corresponding size limits/ requirements in certification systems or other accountability tools which may be used in parallel with this verification tool.

[3] There is scientific evidence connecting more effective forest stewardship with Indigenous Peoples and local communities, usually attributed to their active participation in forest governance, their direct benefits from forest products, and their desire to maintain the resource for future generations.

programs such as the Forest Stewardship Council (FSC®), the Programme for the Endorsement of Forest Certification (PEFC), the Roundtable for Sustainable Palm Oil (RSPO), the Sustainable Agriculture Standard (SAS), etc.[4]

C. Use of "Core" and "Continuous Improvement" Indicators

The proposed approach creates a series of "core" and "continuous improvement" indicators.

- **"Core"** means those which shall be assessed/verified in every situation, with positive performance at the field level considered crucial/required in all cases.
- **"Continuous improvement"** means partial success in implementation is acceptable, if credible field level progress is evident.

This approach builds on the implementation of several other approaches to verification, including third-party certification. For example, the Sustainable Agriculture Standard (SAS) of the Rainforest Alliance program for certifying sustainable agriculture has used, for many years, core criteria (and related indicators under each criterion) as an approach. The FSC "New Approaches" effort, based on FSC experience over the past 25+ years, is currently exploring doing the same – through a Working Group of which NEPCon – Preferred by Nature is a member. Such approaches are driven by a desire for more efficient/effective auditing "outcomes or results" (i.e. to avoid the phenomenon of "audit fatigue" wherein farm and forestry operations are subject to multiple auditing systems); or to focus the resources and thus be more inclusive as to who can benefit from certification.

Although sometimes seeking such efficiency might be referred to as a desire for more "streamlined" approaches, the challenge is to ensure that 'streamlining' is not accomplished at the cost of rigour.

In the approach proposed here we have not included principles or criteria; but instead have moved straight to identifying auditable indicators under various subject areas. Using as a guide over 25 years of auditing experience in both forestry and agriculture, we suggest here it is possible to reduce auditing requirements on issues which have proven non-critical – and enhance the attention (time spent by auditors, field managers and stakeholders) spent on issues that we believe are critical. Unless an indicator is noted as continuous improvement, indicators are considered core.

During future processes of interacting with various stakeholders and through field testing, we will be re-examining the "indicators only" approach, as well as the content of the indicators, and proposed core versus continuous improvement status for each indicator.

D. Cautionary Notes

1) This verification standard is not a planning nor design guide for the implementation of forest or landscape or ecosystem restoration efforts. Multiple other documents either already do or plan to provide that[5], with these produced by organisations such

[4] This protocol was originally drafted with no formal connection to a certification program. Version 0.3, a draft prior to this Version 1 (V1.0), was reviewed internally by NEPCon staff and advisors, plus approximately 45 confidential technical reviewers and restoration practitioners globally, and comments from those reviews used to enhance the current version.

[5] See guidance document

as the World Resources Institute (WRI), the International Tropical Timber Organization (ITTO), the Food and Agriculture Organization of the United Nations (FAO), and the Society for Ecological Restoration (SER).

This standard is not a restoration design document. It is an attempt to provide a consistent, rigourous and efficient approach for assessing the environmental, social, economic and technical performance of ongoing forest restoration field efforts at all scales.

2) This verification approach does not attempt to assess the sufficiency of mitigation, remediation or compensation efforts as remedy for past unacceptable actions or practices, such as, for example, large-scale forest conversion to non-forest land use or abuse of social or Indigenous rights. These subjects are being addressed and negotiated in numerous forums and certification systems, including the Accountability Framework initiative (AFi), FSC, SAS and RSPO. There are also existing examples through wetlands, ecosystem, or social remediation as implemented by international multilateral organisations (e.g. World Bank or International Finance Corporation); national or sub-national governments in the USA, Australia and other countries; or mining or infrastructure development companies. In 2018–2019 the NGO-led AFi – for which Rainforest Alliance and the Meridian Institute provide the Secretariat – has begun to address the challenges of remediation and compensation, as previously has the Business and Biodiversity Offsets Programme (BBOP) of Forest Trends.

E. Illustrative Elements or Principles from Existing Frameworks for Restoration Design, Monitoring or Implementation

Substantial review of restoration-related references has occurred during preparation of this standard. As mentioned above – in an effort to facilitate integration into other accountability schemes (certification systems) and also focus on indicators – the standard does not repeat the practice of identifying principles or criteria, the critical required element for field audits.

The following are examples of key elements or principles (presented in a tabular format for easy reading but with no categorisation by row or other) derived from reference initiatives or documents that provide useful illustrative examples of key restoration-related aspects (listed in order as they appear in each reference).

Chazdon *et al.*, 2019[6]	AFR100 Guiding Principles[7]	GPFLR/Bonn Challenge Principles[8]	SER Principles, 2019[9]
Focus on landscapes	Restoring multiple ecosystem functions	Restore functionality	Ecological restoration engages stakeholders
Engage stakeholders and support participatory governance	Integrated management of landscapes	Focus on landscapes	Ecological restoration draws on many types of knowledge
Restore multiple functions for multiple benefits	Restoration strategies supporting multiple functions	Allow for multiple benefits	Ecological restoration practice is informed by native reference ecosystems, while considering environmental change
Maintain and enhance natural ecosystems within landscapes	Participatory decision making	Leverage suite of strategies	Ecological restoration supports ecosystem recovery processes
Tailor to local context using a variety of approaches	Protection of natural ecosystems to enhance resilience	Involve stakeholders	Ecosystem recovery is assessed against clear goals and objectives, using measurable indicators
Manage adaptively for long-term resilience	Monitoring, learning and adapting	Tailor strategies to local conditions	Ecological restoration seeks the highest level of recovery attainable
	Policy coherence around national commitments and land use	Avoid further reduction of natural forest cover or other natural ecosystems	Ecological restoration gains cumulative value when applied at large scales
	National owned and driven	Adaptively Manage	Ecological restoration is part of a continuum of restorative activities

The above table does not cover an additional example of the comprehensive "principles" (total of 49 principles and 160 recommended actions) included in the 2013 ITTO guidelines for the restoration, management and rehabilitation of degraded and secondary tropical forests[10]. When combined with the other examples, such guidelines provide an excellent reference on the implications/challenges of restoration, the need for

[6] Chazdon, Gutierrez & Guariguata, "A Principles-Based Approach to a Flexible FLR Framework", draft, 11 January 2019.

[7] Voluntary Guidelines for Forest Landscape Restoration under AFR100, AFR100, 28 August 2017.

[8] Bonn Challenge Barometer of Progress: Spotlight Report 2017, IUCN.

[9] Society for Ecological Restoration (SER), International Principles and Standards for the Practice of Ecological Restoration, Second Edition, September 2019.

[10] ITTO Policy Development Series No 13, ITTO, 2002. The citation for the new version, forthcoming in 2020, is "ITTO 2020. ITTO guidelines for forest landscape restoration in the tropics. ITTO Policy Development Series No. 23. International Tropical Timber Organization (ITTO), Yokohama, Japan."

careful assessment and planning of each restoration situation, and the use of various techniques to achieve restoration, e.g. forest refinement, liberation thinning, enrichment planting, use of native and alien species.

This verification standard does NOT require the use of any specific design methodology for restoration. However, there are several tools and methods that NGOs and technical experts support. Following are three examples.

- ROAM – Restoration Opportunities Assessment Methodology was developed by IUCN and WRI (2014) to provide a flexible framework for identifying social, economic, and ecological opportunities for forest landscape restoration and designing diversified landscape-scale restoration approaches. For more information see https://www.iucn.org/theme/forests/our-work/forest-landscape-restoration/restoration-opportunities-assessment-methodology-roam.

- HCV – The High Conservation Value Resource Network (or HCVRN) manages the global approach and practice of HCV assessment around the world, after the HCV approach was originally developed by the FSC. Of critical importance is that HCVs refers to a series of key values for protection, conservation and restoration, including social and environmental, plus licensing of HCV assessors, and required processes for community engagement and Free, Prior and Informed Consent (FPIC). For more information, see High Conservation Value Resource Network at https://hcvnetwork.org.

- HCS – The High Carbon Stock Steering Group has been formed to implement assessments of forest areas (degraded, primary, secondary, etc.) and determine what areas still contain enough forest structure, composition and process that they should just be improved through silviculture (refinement, liberation thinning, reforestation or enrichment planting) or whether such areas are so degraded that movement to another land use (e.g. intensive agriculture, etc.) is acceptable. However, as per the HCV approach, and as consistently recommended under ROAM and the 2002 ITTO guidelines cited below, the approach requires engagement with local and affected communities, FPIC and protection of HCVs. For further information see High Carbon Stock Approach at http://highcarbonstock.org.

Rather than require use of these approaches, the verification standard attempts to cover most, if not all, of the values they provide. It should be noted that for such approaches, various organisations are also focused on improving the applicability of these tools for smallholders, Indigenous Peoples and Small and Medium Enterprises (SMEs).

F. Proposed Verification Approach

The following verification approach recognises the evolving nature of restoration and related due diligence efforts around the globe, and the fast-paced development of information technology or remote sensing that can be used to assess such efforts.

Proposed Verification Approach

- Be responsible for implementing the restoration and meeting verification requirements at the field level

- Every five years for SH&C and medium operations
- Annually for large operations
- Standard operating procedures for all scales are reviewed annually

- Draft prepared by verifier
- Restoration Manager reviews the draft report
- Any Non-Conformity Reports shall be closed before validation or verification.

- Must be reviewed and approved by the verifier or accountability system

In every case, a specific Restoration Manager (RM) shall be identified. Although there may be other organisations or individuals who have a partial responsibility in terms of implementing restoration, auditing experience indicates that it is crucial to be clear on the individual (typically in a specified organisation) who has lead responsibility. As such, there shall always be an individual named as the RM, more often than not associated with a particular organisation.

This verification approach places emphasis on field performance versus documentation.

- For larger-scale efforts, more documentation is expected and would be used to address some verification requirements.
- For smaller-scale efforts, less documentation may be required.

For smaller-scale efforts it is expected that the verification report (i.e. verifiers) will document, in writing, key information that is required and that will become part of the due diligence record for determining conformance to the standard. As designed, the verifier would always be expected to provide an opportunity for the RM to review a draft verification report, correct factual errors and provide opinion on verification results before finalisation. This approach is intended to "lighten the documentation load" – in particular for smaller-scale restoration projects.

This verification approach does not presuppose that one technical restoration intervention is the best for obtaining results. As has happened through certified forest practices in the FSC and other systems, multiple forestry interventions are not constrained if they result in well-managed forestry derived from a range of technical, social, economic and environmental practices. So, in practice, the intention is that the same would hold true in this case for restoration approaches. Alternatives may range from tree plantations to agroforestry to natural forest management to enrichment planting. In some cases, a combination of techniques may be appropriate.

It should also be noted that "just letting natural forests regenerate" through conservation or protection of such regeneration is "management" and an explicit, very

workable (perhaps even the cheapest) alternative, depending on location and other factors (availability of wildlife seed distributors or pollinators, closeness to remnant natural forests as seed sources, degree of soil and water availability disturbance, etc.), and the combination of timber and non-timber values that may be present. As research at CATIE (Centre for Tropical Agriculture Research & Training in Costa Rica), the FLoRES research group (see References) and other organisations has demonstrated, the economic and environmental values of successional natural forest have all too often been undervalued. Thus, this standard is meant to respond to any viable restoration technique, from tree planting to natural regeneration.

This approach does recognise that it is critical to consider economic and social factors beyond the original or reference ecosystems. Successful "ecological" restoration cannot ignore economic and social factors or community needs. This may lead to blended approaches that initially – or even later in the restoration cycle – include actions to produce products or ecosystem services of value to communities or companies. Typically, such economic and social outputs ensure the longevity of the restoration intervention. However, as articulated in the checklist, pure plantations of alien species (or "off-site" species that may be native to a country but not the geographical location where they are being planted) are not considered acceptable as a final target forest ecosystem in this verification approach.

In terms of the timing of performance evaluations (or audits), experience indicates that performance review should occur at least every five years for SH&C and medium operations, and annually for large operations. Standard operating procedures for all scales would likely have internal first-party, or second-party, audits or progress reviews on an annual basis, preferably with some public reporting on achievements (likely required in multiple accountability systems or by some investors).

In the case of a proposed restoration for which management activities have only recently started and can be only partially demonstrated, confirmation that the organisation complies with all applicable requirements of this procedure and has a credible plan that is likely to lead to successful verification is an option, referred to here as validation. Validation of the restoration design (per what has happened in some accountability systems) may be an appropriate step, particularly for large operations to get up to speed or for any operation to secure or attract finance.

Any Non-Conformity Reports (including Corrective Actions) should be closed before validation or verification (and public claims) are achieved. "Observations" might also be noted and can be maintained as areas of focus for the organisation and the subsequent audits or progress reviews.

Any and all public claims would normally have to be reviewed and approved by the verifier or accountability system.

G. Verification Checklist

1 Planning

1.1 **Restoration Manager –** Restoration Manager (RM) (or where applicable organisation) is identified..

1.2 **The governance system** for the restoration initiative is transparent and oriented to best practices, including being participatory, non-discriminatory, accountable, responsive, effective and efficient.

1.3 **Geographical location -** Identification of the geographical location of the restoration effort, including jurisdiction (country, sub-national jurisdiction, local jurisdiction, legal address) and the specific restoration sites with specific boundaries clearly identified in both hard copy map form and digital shapefiles. **(Digital shapefiles are Continuous Improvement for SH&C)**

1.4 **Landscape context -** RM shall undertake an analysis of the broader landscape in which restoration is occurring, using local information and approaches such as ROAM, HCV and HCS, to identify:

1.4.1 Prior and current conditions and land use of the larger farm or forest ecosystem of which the restoration area may be a part, including:

- Environmental conditions (e.g. presence of rare or threatened species or their habitat and other important biological communities, etc.)
- Social conditions (e.g. tenure characteristics, community watershed areas, cultural heritage sites, governance practices, engagement etc.)
- Socio-economic conditions (e.g. income level and other socio-economic parameters or needs). The relative state of forest and forest recovery to be used to identify least cost, most effective restoration approach;

1.4.2 Threats and degradation drivers that removed forest or created a degraded forest to begin with, and may be a factor going forward;

1.4.3 Physical or ecological functional relationships to either adjacent or nearby (within 5 kilometres) protected areas;

1.4.4 For adjacent and/or nearby (within 5 kilometres) Indigenous Peoples and traditional communities: tenures or claims or other critical resources (e.g. water supply areas, cultural heritage sites, etc.);

1.4.5 Other critical environmental, social or community resources that require protection in or adjacent to the restoration area;

1.4.6 Suitable native reference sites to provide target values for establishing recovery metrics in restoration sites (e.g. successional forests of known age for gauging time required to reach particular levels of vegetation structure and diversity within the study area); and,

1.4.7 Directly affected stakeholders or rights holders to be included during planning or implementation.

1.5 **Stakeholder engagement** – RM shall use culturally appropriate engagement to ensure that directly affected stakeholders are transparently engaged in the restoration planning and aware of the expected actions and benefits.

1.6 **Restoration Plan** shall:

1.6.1 Align to effectively recognise, manage or restore characteristics and values identified through 1.3 above;

1.6.2 Identify target native reference ecosystem and related environmental, social and economic goals and objectives**,** including desired restoration outcomes over an initial 5-year period and a longer term 20-year period (description of longer-term outcomes welcomed, e.g. 50 years); **(Continuous Improvement for SH&C)**

1.6.3 Demonstrate that the RM has the financial resources to ensure implementation of the Restoration Plan over a 5-year period;

1.6.4 Be documented in writing, except for SH&C operations, for whom either an abbreviated plan is acceptable or alternatively the Restoration Plan is provided verbally by the RM and documented by the verifier (second- or third-party), and actions/practice are observed on the ground and confirmed through stakeholder consultation (government, adjacent landowners, scientific specialists, local NGOs, etc.).

1.7 **Restoration techniques –** A description is available of the restoration techniques or practices to be used, and sufficient to understand how desired targets, goals and/or objectives will be achieved and to assess the adequacy of performance from a technical field perspective.

1.8 **Monitoring Plan –**A documented monitoring plan exists (see Section 4 below for detailed requirements). **(For SH&C operations see 1.6.4 for level of documentation requirements)**

1.9 **Validation Plan** – A credible plan exists to comply with all applicable requirements in sections 1 (Planning) and 2 (Tenure and Security) evidenced with the same level of requirements set in 1.6.4. **(Applicable for the Validation option only)**

2 Tenure and Security

2.1 **Clear, legal and protected tenure –**Management rights of the property where restoration occurs are legally documented and/or recognised by government authorities, with boundaries respected by adjacent landowners and other parties. Where necessary due to encroachment or other risks, boundaries are marked in the field and resource protection interventions are in place and consistently implemented. Tenure is secure for 5 years and preferably 20-year restoration time horizons. **(Continuous Improvement for SH&C operations)**

2.2 **Customary rights and tenure –**

2.2.1 Customary use rights or other similar tenure rights by local people (Indigenous or otherwise) are identified. **(Continuous Improvement for SH&C operations)**

2.2.2 The customary rights have been formally recognised, or disputes are being resolved in a manner deemed acceptable by affected stakeholders

following principles of good practice for Free, Prior and Informed Consent (FPIC)[11]. **(Continuous Improvement for SH&C operations)**

2.3 **Dispute resolution mechanism –**For large- and medium-scale operations a dispute resolution process is documented. For SH&C operations, dispute resolution mechanism can be explained by the RM and documented through the verification process.

2.4 **Dispute resolution process** – Dispute resolution has occurred prior to implementation of restoration activities on the ground and/or the parties affected have agreed upon the dispute resolution process and agree with ongoing dispute resolution and restoration processes and results. **(Continuous Improvement for SH&C operations)**

2.5 **Participation** – The RM shall support inclusive participation of the affected parties and transparency when making decisions on actions that would have impact or clear implications on larger landscapes. **(Continuous Improvement for SH&C and medium operations)**

3 Field Implementation

3.1 **Restoration practices –** Restoration practices and/or results are visible on the ground and in accordance with restoration plan.

3.2 **Species selection and use –** Species used are well-matched to climate, soils and water availability, with clear consideration given to climate change resiliency, pests and other risks, and technically well-aligned with desired restoration target(s), goals and objectives. Species provenance is known and demonstrated.

3.3 **Alien species –**Where alien species are used, their use is justified in line with the Restoration Plan, typically as a nurse crop and/or directly contributing as a tool for achieving restoration of the native reference ecosystem (e.g. protecting early natural regeneration or creating habitat for seed dispersers or pollinators) and/or initially establishing tenure security for an area as a forest end use (particularly where land use conversion pressures are high). Invasive aliens are not used. Plantations of alien species are not acceptable as a final restoration target.

3.4 **Seedling/regeneration survival –** Where seedling establishment or natural regeneration is unsuccessful, gaps are being addressed in less than 1 year through follow up planting and/or improved natural succession techniques.

3.5 **Restoration threats controlled –** Protection against threats, as defined in planning above, is in place (fire, land-use change, pressures on the resource, etc.) and effective.

3.6 **Natural ecosystems protection** – Natural ecosystems in the restoration area or surrounding landscape (e.g. grasslands or wetlands) are not damaged or degraded by restoration activities (e.g. overcollection of seed or wildings, harvesting of wood to build nursery, or construction of access roads or temporary buildings).

[11] See FPIC guidelines, tools and guidance developed by the Accountability Framework Initiative (or AFI), the Rights and Resources Initiative, the FSC or other certification and accountability systems.

3.7 **Pollinator/propagator protection –** Wildlife species that play an important role in pollination/propagation for regenerating the target ecosystem are identified and protected (e.g. bats, butterflies, birds, rodents, etc.). **(Continuous Improvement for SH&C and medium operations)**

3.8 **Chemical use –** Chemical use is to be avoided. Where chemical use (including fertilisers and pesticides) is justified, chemicals used must be legal, not prohibited under World Health Organization (WHO) guidelines, stored in secure locations (including child-proof), and used at minimal levels (by volume or toxicity) necessary to achieve desired outcomes. Use of naturally occurring chemicals or compounds is favoured over synthetic materials where economically viable, safe and functionally effective.

3.9 **Local labour –** Implementation emphasises use of local labour or contractors, with alternative labour options possible if they are subject to controls to ensure that they do not undermine employment opportunities for local communities.

3.10 **Discrimination** – No discrimination of workers exists, e.g. based on gender, race, age, or religious practice.

3.11 **Working conditions –** Good working conditions exist for all staff, contractors and service providers, that meet legal requirements and are also at or above the norm for a comparably scaled business in the region, including access to clean/affordable housing, safe transport, functional sanitary facilities and access to potable water supply.

3.12 **Occupational work, health and safety –** Work occurs in accordance with local legal and permit requirements, including safe use of equipment and consistent use of personal protective equipment (PPE) appropriate for work being performed in nurseries or the field (e.g. steel-toe boots, eye and hearing protection, hard hats, ventilator masks, aprons, etc.).

3.13 **Worker compensation –** Staff and contractors are paid legal wages at or above the norm for the jurisdiction (national and sub-national) and written records kept as evidence.

3.14 **Living income –** Compensation is achieving or working towards a living income. **(Continuous Improvement)**

3.15 **Other social benefits** – Social benefits to the local communities are identified and documented wherever possible, including ecosystem services (e.g. NTFPs, water resource conservation or protection, pollination of crops, soil stabilisation), climate stabilisation, gender equality, poverty alleviation and community empowerment. **(Continuous Improvement)**

4 Monitoring and Reporting

4.1 **Monitoring implementation –** Field monitoring by technically competent specialists occurs in line with Restoration Plan expectations (particularly targets, goals and objectives, including social and environmental). At a minimum this will be annual, although during early phases monitoring will likely be more often (e.g. daily, weekly, monthly or quarterly) as necessary to address risks and foster success. **(Continuous Improvement for SH&C operations)**

4.2 **Survival rates –** Survival rates of plantings/seedlings or natural regeneration are monitored annually in a technically sound fashion, and actions are taken for continuous improvement based on monitoring evident at the field level.

4.3 **Monitoring results** – Results are documented in writing, accurate and easily available to managers and verifiers. **(Continuous Improvement for SH&C operations)**

4.4 **Improved management –** Results of monitoring are used to inform revisions to the Restoration Plan and enhance achievement of the restoration targets, goals and objectives. **(Continuous Improvement for SH&C and medium operations)**

4.5 **Exit strategy –** When the RM has a limited time horizon to manage the project, a clear plan is established to ensure the continued implementation of the Restoration Plan, including resource and financial investments. **(Continuous Improvement for SH&C and medium operations)**

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About NEPCon – Preferred by Nature

NEPCon – Preferred by Nature is an international non-profit organisation working to support better land management and business practices that benefit people, nature and the climate in 100+ countries. For almost 25 years, we have worked to foster sustainable land use and responsible trade in forest impact commodities. We do this through innovation projects, capacity building and sustainability certification services.

We are accredited certifiers for sustainability schemes such as FSC™, PEFC, RSPO, RA SAS and SBP. We also certify to our own LegalSource™, Sustainable Tourism, Responsible Sourcing, and Carbon Footprint Management standards. A self-managing division of NEPCon promotes and delivers our certification services. Surplus from certification activities supports the NEPCon's non-profit activities.

NEPCon – Preferred by Nature is recognised by the EU as a Monitoring Organisation under the EU Timber Regulation.

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