

The Accountability Framework

Operational Guidance on Monitoring and Verification

DRAFT FOR WORKSHOPPING
December 2018

DECEMBER 2018 DRAFT FOR 'WORKSHOPPING' WITH STAKEHOLDERS

The Accountability Framework initiative (AFi) is developing a common framework to guide the setting, implementation, and monitoring of supply chain commitments. As part of the Accountability Framework, this draft document represents a working consensus of the AFi partners as well as input from prior consultations involving stakeholders from the private sector, civil society, and government. The partners are sharing this draft publicly and inviting feedback from all interested parties to further build and refine the Framework in a way that reflects the needs and perspectives of those working to bring about responsible supply chains and positive outcomes for people and nature. Based on this consultative process, version 1.0 of the Accountability Framework will be published in early 2019.

For more information, or to provide input during the present workshoping process, please visit <https://accountability-framework.org> or send an email to contact@accountability-framework.org

DISCLAIMER: This work product is intended to be advisory only and is not intended to serve as a legal opinion or legal advice on the matters treated. The reader is encouraged to engage counsel to the extent required.

PURPOSE & SUMMARY

This Operational Guidance elaborates norms and good practices on monitoring and verification (M&V) related to company commitments on topics within the Accountability Framework scope. It focuses on environmental and social outcomes associated with raw material production and primary processing. The guidance addresses the following topics:

1. Methodologies for designing robust monitoring systems, evaluating and improving existing systems, and selecting suitable M&V tools
2. Monitoring approaches for assessing compliance with and progress towards company commitments
3. Metrics for measuring compliance, performance, and progress
4. Guidelines for credible verification of compliance and progress to provide the necessary level of assurance for both internal management and external stakeholders
5. Opportunities for improving the effectiveness and efficiency of M&V through collaboration

This draft provides generalized guidance on credible and effective M&V, which is intended to apply across a range of commodities and contexts. Companies can localize this general guidance through the development or adoption of context-specific M&V systems, tools, and processes. During the present workshoping period, the AFI partners invite stakeholders to provide input regarding: i) the applicability of this guidance to the contexts where they work; ii) the availability of suitable M&V guidance and tools, as well as any key gaps, in the contexts where they work; and iii) how the AFI's generalized guidance can best be localized to particular geographies, commodities, and social and environmental circumstances where needed. Readers are especially encouraged to provide input in response to the questions embedded within this document.

1. Overview

The purpose of this Operational Guidance is to provide clear and consistent guidelines and good practices for monitoring and verifying (M&V) the fulfillment of company supply chain commitments on topics within the Accountability Framework scope. This material expands upon [Core Principle 8](#), which outlines high-level expectations related to M&V. As with the Accountability Framework overall, the voluntary commitments being monitored and verified refer to¹:

- Halting deforestation
- Avoiding conversion of other natural ecosystems
- Respecting human rights (including rights of indigenous peoples, local communities, and workers)

The M&V Operational Guidance builds from existing credible and accepted practices for monitoring and assurance of environmental and social performance. It also incorporates emerging innovations in M&V made possible by new technology and necessitated by the imperative for M&V to become more effective, cost-efficient, and scalable if it is to support the fulfillment of supply chain commitments at a sector-wide level.

This document is organized into the following sections:

Section 1: Overview of the scope and focus for M&V of supply chain commitments

Section 2: Design of monitoring systems

¹ See the Accountability Framework *Terms and Definitions* and the *Operational Guidance on How to Apply Definitions Related to Deforestation and Conversion* for further elaboration on definitions associated with these commitments and how these definitions apply in different contexts.

Section 3: Implementation of monitoring systems

Section 4: Guidelines for credible verification

Section 5: Opportunities for improving the effectiveness and efficiency of M&V through collaboration

Annexes: Additional information on suitable monitoring tools and metrics

Monitoring and verification are closely related activities, and there can be a great deal of overlap in their respective methods, tools, and approaches. Sections 2 and 3 below concentrate on monitoring, recognizing that much of this material is also germane to verification practices. Section 4 complements this material by providing guidelines specific to verification.

1.1 Scope and applicability

This Operational Guidance addresses M&V of social and environmental outcomes associated with raw material production and primary processing at the supply-base level. This includes production and primary processing facilities but excludes downstream trading and processing operations such as manufacturing and shipping.² Companies conduct or contribute to M&V in different ways depending on where they sit along the supply chain:

- As expressed in Core Principle 8.2, companies that purchase commodities or derived products (i.e., those that manage a portfolio of suppliers) are expected to monitor the control systems of their suppliers and to ensure robust M&V of their suppliers' compliance or progress toward fulfilling commitments, including monitoring of how non-compliance is identified and addressed. Buyers are also expected to collect and utilize M&V data from across their sourcing portfolios to inform decision-making toward full compliance and to provide composite information about fulfillment of commitments. Additionally, in some circumstances, these companies may need to be involved in conducting or supporting M&V at the supply base level.
- Producers and primary processors of raw materials – and in many cases companies such as traders that buy from these entities and have visibility to the supply base level – are in the position to conduct monitoring of on-the-ground conditions and to provide downstream buyers with monitoring information on these operations.

What is meant by monitoring and verification (M&V)?

M&V is an iterative, ongoing process that companies use to assess and demonstrate compliance, performance, and progress with respect to their supply chain commitments.

Monitoring is the collection of data on actions and performance based on metrics that correspond to supply chain commitments and/or action plans for fulfilling those commitments.

Verification is an assessment and validation of compliance and progress relative to the stated commitments. It utilizes monitoring data and other information sources as input to the verification process.

Given the integrated nature of M&V, the methodologies, tools and approaches used for monitoring may be similar to those used for verification.

This Operational Guidance is applicable to both suppliers and buyers. Many companies – such as processors, traders, and some manufacturers – are both suppliers and buyers of raw, processed, or manufactured materials, and therefore play multiple roles in support of M&V. Ultimately, the company making environmental and social commitments (whether it is a buyer, a supplier, or both) is responsible for monitoring progress and demonstrating fulfillment of its commitments.

² More specifically, the supply base level includes: 1) production units, i.e., farms, plantations, farmer groups, forest management units, and the like; 2) primary processing facilities – such as mills, slaughterhouses, silos, and aggregation sites – and their associated supplysheds; and 3) groups of production units and primary processing facilities located in close geographic proximity and under common management.

M&V is an integral part of a company's overall due diligence and supply chain management system. Readers are therefore encouraged to review the *Operational Guidance on Supply Chain Management* when developing or evaluating their M&V system and when assessing its potential alignment with the Accountability Framework. That Operational Guidance provides further information on supply chain mapping, traceability, risk assessment, and supplier management processes.

Relationship to existing initiatives and standards

As stated in [Core Principle 8.6](#), and further referenced in [Core Principles 2 and 9](#), certain existing control systems (such as certification or credible trader-managed control systems) may fulfill some or all of a company's M&V needs for the areas or product volumes for which they are used. Companies that use or are interested in using such systems should assess the extent to which they address the elements of the Core Principles and the expectations for M&V elaborated in this Operational Guidance. Where gaps are found, companies must take complementary actions (or utilize complementary tools) to ensure that the company's overall M&V system is adequately credible and comprehensive.

1.2 What is being monitored: compliance and progress

While all companies making commitments are ultimately accountable for full compliance with their respective commitments (e.g., no deforestation, no conversion, and full respect for human rights), this may take time to achieve. These outcomes also hinge on the actions and systems that buyers and their suppliers have in place to achieve and maintain compliance. Therefore, as indicated in [Core Principle 8.1](#), M&V systems need to assess not only compliance with commitments but also incremental progress toward compliance if full compliance has not yet been reached.

Accordingly, M&V should consider two types of results:

- **Compliance:** measures of whether a commitment is being fulfilled. This may include the realization of specific outcomes (e.g., there is no deforestation in the company's supply chain; there are no adverse human rights impacts) as well as the fulfillment of specific actions or processes to which the company has committed – for instance, following the High Carbon Stock Approach methodology.
- **Progress:** measures of quantitative or qualitative progress toward full compliance. Progress may be measured in terms of progressive realization of a specific outcome (e.g., 70% of a manufacturer's beef supply is deforestation-free) and/or actions taken toward full compliance. The types of actions or other progress metrics measured should be appropriate to the company's role in the value chain. For instance, producers may monitor progress toward site-level improvement plans addressing conservation or human rights issues, while commodity buyers may monitor progress toward their suppliers' improvement plans as well as the adoption of supply chain control mechanisms, such as traceability and supplier management systems. See Section 4 of the *Operational Guidance on Supply Chain Management* for more information about progress monitoring of suppliers.

Monitoring systems that track stepwise progress toward full compliance should be used to incentivize and manage rapid progress toward this end by both suppliers and buyers. As discussed in the *Operational Guidance on Supply Chain Management*, buyers should have policies and processes in their supplier management systems to address stagnating progress or repeated or systemic non-compliance.³

³ As clarified in the Definitions and Core Principles, the term "non-compliance" is used throughout the Accountability Framework to include non-compliance with company commitments or applicable law related to the Accountability Framework scope, as well as adverse impacts to internationally recognized human rights.

Some key challenges related to supply chain monitoring and verification

M&V of supply chain commitments has proven challenging for many of the companies that have issued such commitments and are working to honor them. Key challenges and barriers include:

- **Traceability:** Downstream companies often are not able to gain access to key information about their direct and indirect suppliers, including producers and primary processors that are most directly linked to on-the-ground social and environmental conditions. This can be particularly challenging when sourcing from smallholders or independent suppliers, or through spot markets.
- **Monitoring metrics:** Clarity on what to monitor at the supply-base level is often lacking. Companies may also receive divergent expectations or advice as to the metrics they should use.
- **Local capacity:** Suppliers may lack the capacity or resources to conduct M&V that meets the requirements or expectations of their customers (e.g., downstream companies) and other stakeholders. This often reflects the constraints within which suppliers operate as well as limited support from buyers to suppliers to fulfill, monitor, and verify commitments. In many contexts, there is also a dearth of qualified professionals or organizations to provide effective M&V services. It is often challenging for companies to prioritize which suppliers to support, and in what ways, to help drive impactful engagement and positive outcomes.
- **Detection of non-compliant suppliers and actions:** Traditional M&V tools and approaches are often not able to detect non-compliant behavior and conditions. This is especially true for human rights issues, for which geospatial monitoring tools are generally not suitable.
- **Use of existing monitoring systems:** It is not always clear whether and how companies should utilize existing governmental, sectoral, or other context-specific monitoring systems and tools as part of their supply chain monitoring efforts.

2. Design of monitoring systems

Reflecting [Core Principle 8.1](#), companies are expected to design or select appropriate systems for monitoring compliance with environmental and social commitments using recognized, credible, and technically sound tools and approaches. This will ensure both comparability of monitoring data within and across companies and the external credibility of such data to key stakeholders. Sections 2.1 through 2.3 below provide characteristics of effective monitoring systems, which companies should consider as they design and implement their own systems.

Throughout the design of monitoring systems, companies should engage with relevant stakeholders to incorporate appropriate information and perspectives into decisions about what and how to monitor. Following [Core Principle 8.5](#), local stakeholders should be included as a critical source of information and perspective for assessing risk and performance levels. Information from these stakeholders can be conveyed through interviews, surveys, grievance mechanisms, and community reports, among other techniques. Stakeholders should also play other roles in the monitoring process, depending on the nature of the operation being monitored and the company's overall stakeholder engagement strategy. In general, higher risk and larger scale activities will necessitate greater stakeholder engagement, as will the monitoring of social issues. Community-based and participatory monitoring approaches are often necessary or helpful to adequately monitor the subject issues; see Annex 1 for more information.

2.1 Baseline and follow-up monitoring

Monitoring systems should be designed to accurately measure outcomes related to the scope of company commitments, including conversion of natural ecosystems to production areas, presence of land conflict, or incidents of workers' rights abuses. This requires methodologies to assess current conditions or outcomes as

well as the effectiveness of any corrective actions that may be required to address non-compliance and fulfill company commitments.

Systems should be designed to conduct appropriate data collection both at the baseline period (i.e., the first time that monitoring data are collected) and through regular follow-up monitoring at appropriate intervals to monitor progress, detect trends, and identify new non-compliance. These are described further below:

1. **Baseline data** are collected at the time that the operation(s) or supplier(s) of interest are first monitored. Baseline data collection should characterize current conditions for the full scope and spatial extent of interest. This provides a reference point against which follow-up monitoring data will be compared. Baseline data collection should also include historical or retrospective analysis, as needed, to determine whether prior activities in the subject operations or land areas may affect present-day and future compliance with company commitments. For instance:
 - **Retrospective assessment of deforestation and conversion:** With respect to no-deforestation and no-conversion commitments, the baseline assessment should compare current land use and land cover to those present as of the applicable cutoff dates to determine whether deforestation or conversion took place in contravention of commitments.
 - **Detection of legacy conflict or rights violations:** With respect to commitments to respect property land rights of indigenous peoples and local communities (IP/LC), the baseline assessment should identify any existing conflict over land or natural resources and determine whether actions of the company or its predecessor may have violated IP/LC rights or proceeded without proper consultation or Free, Prior and Informed Consent (FPIC).
2. **Follow-up monitoring** takes place at regular intervals that are sufficiently frequent to monitor compliance relative to the baseline, detect any new non-compliance, and assess progress against improvement plans where applicable. Systems established or selected to monitor deforestation, conversion, and human rights violations should be designed so that such monitoring is able to assess:
 - **Cumulative impacts:** In addition to year-to-year or season-to-season changes, monitoring systems should be able to detect any cumulative patterns or impacts that accrue across time and space to create significant overall non-compliances. For instance, land cover monitoring should determine whether small incidents of land conversion in a given year are part of a broader pattern of systematic land use change, or whether improvements in labor practices over a short time period are leading to better outcomes over the long term.
 - **Connections between environmental and human rights impacts:** Monitoring activities should be designed to assess environmental and social issues in relation to one another, rather than providing only compliance assessments of each commitment in isolation. For example, monitoring should assess whether deforestation may be contributing to land rights violations or harming community livelihoods, or whether compliance with deforestation-free commitments could jeopardize food security if forest lands are placed off-limits to development without appropriate actions taken to ensure adequate areas for IP/LC food crops.

2.2 Characteristics of effective monitoring systems

Measurement and data collection methods should be suitable for evaluating the selected metrics at the appropriate scales. In determining how to carry out the necessary monitoring, companies should consider how and by whom the data should be provided and what control measures or tools will allow downstream companies to ensure adequate monitoring when they do not have full visibility of their supply origins. Companies should consider the following attributes of effective monitoring systems:

- Monitoring should be of adequate **frequency and intensity** to detect meaningful change given:
 - intra- and inter-annual production cycles of relevant commodities;

- the type and characteristics of the native ecosystem(s) of concern;
- the presence and characteristics of potential threats to human rights; and
- the level of risk of non-compliance or history of past non-compliance or levels of conflict.
- Tools and approaches for monitoring should be **appropriate to the commodity, geography, and production context, and to the nature of the issues being assessed**. Monitoring of social and environmental commitments is an evolving field, with new and more precise tools continually being introduced, and companies should stay abreast of these evolving technologies.
 - Use of **geospatial and/or non-geospatial tools** should fit the appropriate context. (See Annex 1 for more information on both types of tools.)
 - Monitoring should apply **tools and metrics provided or sanctioned by governments and relevant jurisdictional or sector-wide initiatives** where these are suitable to monitor the company's commitments. Where more detailed or different monitoring tools or metrics are needed to assess compliance and progress relative to company commitments, these should be compatible with governmental and jurisdictional monitoring to the extent possible. (For instance, company monitoring of gross deforestation can be aligned with government forest definitions and monitoring systems as described in the *Operational Guidance on How to Apply the Definitions Related to Deforestation and Conversion*.)
- Monitoring should cover all of the company's operations and direct or indirect suppliers, or else provide for **appropriate sampling representation of the operations and suppliers being assessed**. (e.g., higher sampling intensity in higher risk or more diverse areas), based on a risk assessment, subsequent prioritization of operations, and valid sampling methodology.
- Monitoring systems should include a **data management** system that allows for analysis of monitoring data, including assessment relative to the established baseline and desired outcome.
- Monitoring systems should include plans and procedures for the **use of monitoring information** to inform decision-making and influence behavior within the company and its suppliers. This includes inputs to continuous improvement processes whereby monitoring data informs supplier management systems, influences procurement decisions, and triggers changes in activities, policies and procedures as necessary to address non-compliance, drive improvement, and fulfill commitments.
- Monitoring systems should **support effective verification, reporting, and disclosure** related to supply chain compliance and performance. As appropriate, monitoring data should be provided to auditors to support verification processes (see Section 4) and should be reported or disclosed to other supply chain actors or to the public (see *Operational Guidance on Reporting and Disclosure*).
- Monitoring methodologies should be **replicable and publicly available**.

2.3 Metrics for assessing compliance and progress with commitments

Following [Core Principle 8.3](#), clearly defined metrics⁴ are essential to translate company commitments and objectives into specific measures for assessing compliance and performance of supply chain actors. The specific metrics may vary depending on where the company sits in the supply chain. For example, upstream companies should generally select metrics to assess environmental and social outcomes associated with commitments, while downstream companies may also need to include metrics to monitor the extent to which their suppliers have effective management and control systems in place. Appropriate metrics for assessing compliance and progress should be:

- clearly defined to measure specific elements of commitments and associated targets;
- standardized and repeatable to facilitate comparability of findings over time and between companies, geographies, and sectors;

⁴ A metric is an objective and verifiable measure used to assess conditions, outcomes, or trends (e.g., in relation to a given land area, facility, supply chain, company, process, or system). The Accountability Framework uses this term, rather than the closely related term 'indicator', although the terms may often be used interchangeably.

- sensitive enough to detect relevant changes from the baseline state;
- congruent with the Accountability Framework definitions related to deforestation, conversion, indigenous people and local communities, and other key topics within the AFI's scope;
- consistent with SMART guidelines (i.e., specific, measurable, attainable, relevant, and time-bound) so that they can be objectively measured, including in quantitative terms whenever appropriate⁵; and
- developed or selected based on input provided from stakeholders to the extent appropriate.

Several existing reporting frameworks, including general frameworks such as the Global Reporting Initiative and topic-specific guidelines such as the Platform for Human Rights Indicators⁶, the UN Guiding Principles Reporting Framework⁷, and CDP Forests, include potential metrics for companies to consider when developing monitoring systems. An indicative set of metrics for deforestation and conversion is provided in Annex 2. Additional guidance on metrics for monitoring human rights commitments is expected to be included in version 1.0 of the Accountability Framework in 2019. The *Operational Guidance on Reporting and Disclosure* provides further guidance on the use of these metrics in reporting on progress toward fulfilling commitments.

3. Implementation of monitoring systems

A company's approach to monitoring compliance and progress relative to commitments will vary depending on the scope of the company's commitments, its position in the supply chain, the level of supply chain visibility, the context and characteristics of the supply base, and the assessed risk of non-compliance of the supply area. Companies should generally pursue one or more of the following three primary approaches to monitoring, depending on these factors:

1. Monitoring of production units and primary processing sites
2. Monitoring of sourcing areas
3. Monitoring of supplier management systems and control systems

Figure 1 illustrates when and by whom each monitoring approach typically needs to be used. This diagram also summarizes how different types of monitoring information may be used to inform decision-making and develop accurate and informative reporting to supply chain partners and the public. The three monitoring approaches are further elaborated in the sub-sections that follow.

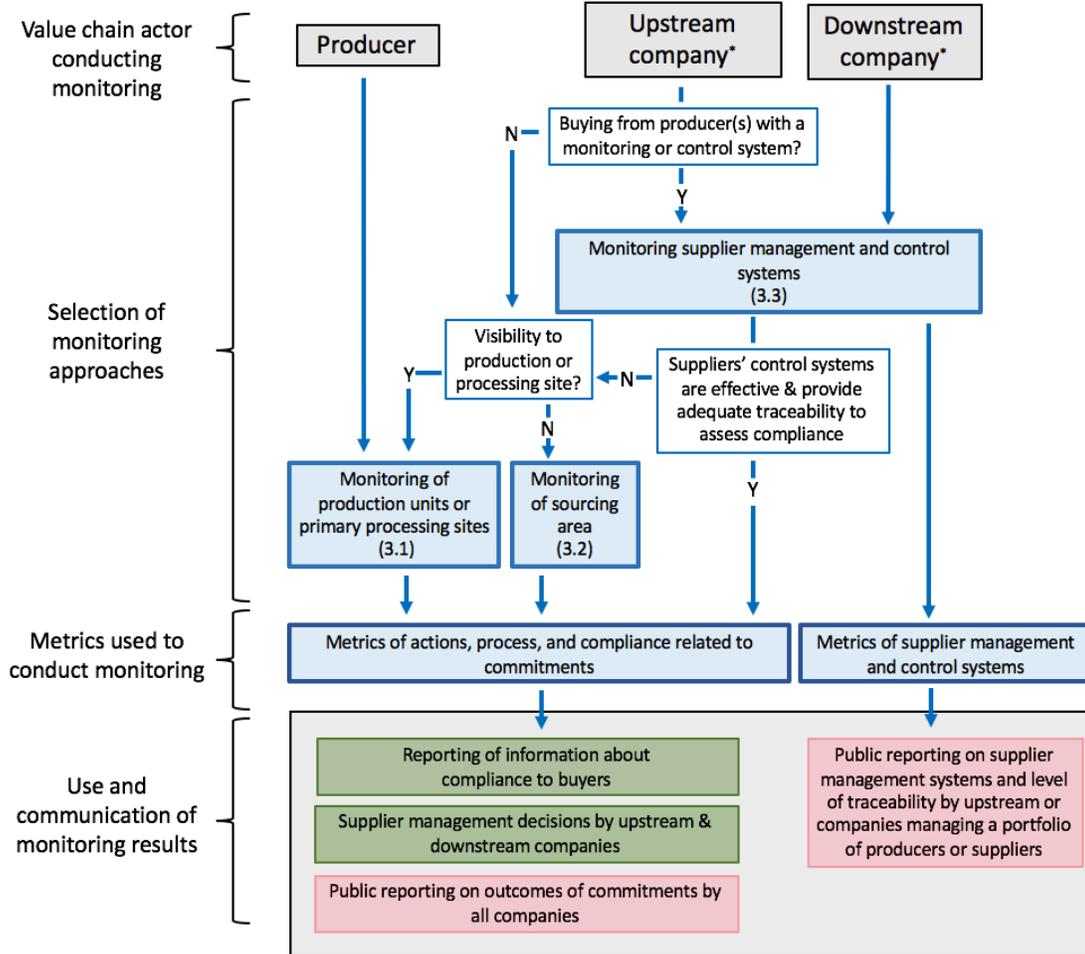
⁵ The Accountability Framework also recognizes the value and use of qualitative measures, which may be more suitable for monitoring certain aspects of performance and improvement.

⁶ See <https://www.business-humanrights.org/en/platform-for-human-rights-indicators-for-business-hrib>.

⁷ See <https://www.ungpreporting.org/>.

Figure 1: Roles and approaches for monitoring company supply chain commitments

The type of monitoring carried out by a company depends on the company's position in the supply chain, the visibility the company has to production units and/or primary processing sites, and the effectiveness of controls put in place by suppliers. Monitoring should use metrics appropriate to the type of monitoring carried out, and the results of monitoring should be used for public and business-to-business reporting as well as to inform supply chain management decisions.



* Upstream companies (such as traders or slaughterhouses) buy directly from producers, while downstream companies (such as manufacturers and retailers) do little or no direct purchasing from producers.

3.1 Monitoring of production units or primary processing sites

Whenever possible, monitoring should be carried out at the level of the production unit and/or primary processing site. The scope of this monitoring generally includes:

1. the land area on which commodities are produced;
2. primary processing and aggregation sites and all their facilities, infrastructure, and work force (permanent, seasonal/temporary, and contracted); and
3. any other land area owned, managed, or controlled by the given producer, producer group, or upstream company that is associated with the operation(s) being monitored, such as conservation areas or land used for other purposes.

Monitoring at this level requires known and mapped locations of the given production units and processing sites. Production units should generally be demarcated by boundary polygons.

When possible, monitoring of production units and primary processing operations should be carried out by the producers, producer groups, and primary processors themselves. However, when these entities do not have the capacity to carry out effective or thorough monitoring, and when other control mechanisms are not present to monitor and verify compliance, buyers further down the supply chain may need to conduct or support monitoring activities.

The methodology and results of this monitoring should be communicated to buyers, who should have systems in place to collect, manage, and analyze such monitoring information provided by their direct and indirect suppliers. These systems should be part of the buying company's supplier management systems (see Section 3.3 below as well as the *Operational Guidance on Supply Chain Management*). Further detail on monitoring specific commitments in the context of production units and primary processing operations is provided in the following two sub-sections.

3.1.1 Monitoring no-deforestation and no-conversion commitments

To evaluate compliance with no-deforestation and no-conversion commitments, monitoring should quantify the area of deforestation, conversion, or other land use change within the subject production unit(s) as well as the degree to which remaining forests and natural ecosystems are being protected for their conservation values. These assessments should utilize relevant metrics and data collected through effective tools and methods, as described further below and in Annex 1 and 2. The assessment should quantify the following:

- a) How much land (if any) has been converted from forest or other natural ecosystem to commodity production or other land use since commitment cutoff dates?
- b) How much land is set aside for conservation purposes⁸? Of this amount, how much is being managed effectively to retain its conservation values? How much has lost, or is at risk of losing, key conservation values, and what are the threats or impacts that contribute to this loss?
- c) Where and to what extent have boundaries of the production areas have moved or increased? What was the recent or prior use of any new production areas (e.g., pasture land, pre-existing farm taken over by adjacent owner, smallholder food crops, or regenerating forest)?

Selection of methods and tools to monitor land use/land cover change should be based on the commodity being produced, scale of production, type of production system, and the availability of monitoring products suited to the given context. Key considerations are summarized below and discussed further in Annex 1:

- To identify past deforestation or conversion in medium- or large-scale operations involving risk of conversion between discrete land-cover types such as forest to pasture or forest to row crops, existing medium-resolution (e.g., 30-meter) remote sensing products such as Global Forest Watch may suffice. Additionally:
 - Higher-resolution or more customized or context-specific datasets should be used for specific commodities and/or geographies when they are available and accessible, and when these tools or products improve monitoring accuracy or precision.
 - When the results generated by use of these tools suggests uncertainty in either land use change or attribution of that change, companies may need to complement and verify these results using finer-resolution remote sensing products and/or ground-based monitoring.

⁸ This may include land identified through relevant assessments (e.g., High Carbon Stock Approach and High Conservation Value assessments), land that remains undeveloped per legal requirements, and other areas of natural ecosystem remaining within the production unit.

- In small-scale operations, especially where land use classes are less discrete, 30-meter resolution imagery or tools may not be accurate or precise enough to effectively monitor at the level of the production unit. When this is the case:
 - High-resolution remote sensing products or those incorporating more context-specific approaches to land cover assessment may be used to provide more information about land use/land cover change. The utility of these products will depend upon the types of ecosystems, land covers, and production system being monitored.
 - Ground-based monitoring approaches may be required to assess land use change. For smallholder producers, such monitoring can often be carried out in the context of smallholder groups, which provide internal oversight of and support to their members to assess and improve compliance with company commitments (see *Operational Guidance on Smallholder Inclusion in Ethical Supply Chains*).
- Where commodity production is associated with hard-to-identify land cover types (e.g., shade grown cocoa that is difficult to distinguish from forest or smallholder patches of commodity production that may not be distinguishable from forest, grassland, woodland, or subsistence production), available remote sensing tools may not be reliable enough to serve as effective monitoring tools. When this is the case:
 - More specialized remote sensing products should be used, where available. These include high-resolution remote sensing products as well as more sophisticated analyses of remote sensing data, such as measures of vegetation productivity (e.g., the normalized difference vegetation index – NDVI) or estimates of burned area that may provide evidence of conversion to plantations.
 - Ground-based monitoring will most likely be required to supplement, confirm, or clarify the findings of remote-sensing-based approaches.
- In any of the above contexts, and especially where there is a defined baseline, ground-based monitoring of production units can be an efficient and accurate way to monitor production activities and expansion, extent and management of conservation land, and changes in land cover.
- In many cases, ground-based monitoring should be used to complement remote-sensing approaches in order to accurately attribute land cover change:
 - When attribution of land cover change to specific production-related land use activities is uncertain or unclear, ground-based ecological assessments combined with review of property boundaries may be required to accurately identify deforestation or conversion due to commodity production.
 - When attribution of known deforestation or conversion to a specific actor is unclear due to changes in land ownership or company structure, or potential illegal encroachment on property boundaries, methods such as interviews paired with reviews of land ownership history, land tenure, and boundaries may be required to assess culpability of supply chain actors in such non-compliance (see *Operational Guidance on Supply Chain Management*).

3.1.2 Monitoring human rights commitments

To effectively assess compliance with and progress toward human rights commitments (including rights of indigenous peoples, local communities, and workers), on-the-ground approaches are generally required. These include interviews with stakeholders, desk review of company records and grievance mechanism reports, and field visits. The complexity of issues surrounding human rights further necessitates that these and other monitoring techniques follow best practices specific to the social issues being monitored. Monitoring of social issues generally involves establishing working relationships with peoples potentially affected by company operations, as well as participatory monitoring that includes communities and individuals in the assessment process.

To help ensure adequate focus on the most salient human rights issues, the scope and methods for monitoring human rights issues should be clearly defined in consideration of the social context of the subject sites or facilities being monitored. With respect to the rights of indigenous peoples and local communities (IP/LC), studies and plans including the social baseline assessment and other social mapping exercises, the FPIC outcome document, and the Indigenous Peoples Plan can help define the appropriate scope and approach of monitoring (see the *Operational Guidance on Respecting the Rights of Indigenous Peoples and Local Communities*). Monitoring related to the rights of IP/LC should assess both the adequacy of these plans and approaches (i.e., whether they were conducted according to good practice) and the resulting outcomes.

Monitoring of workers' rights issues should address at least the core dimensions of workers' rights outlined in Core Principle B2 and should reflect context-specific workers' rights challenges and risks, such as those associated with migrant workforces and vulnerable workers. Additional guidance for effectively monitoring workers' rights is expected to be provided in the next version of this Operational Guidance.

3.2 Monitoring of a sourcing area

When it is not possible to monitor at the level of specific production units and processing facilities, companies should monitor at the scale of the smallest possible geographic area from which commodity volume is known to originate. This sourcing area may be a jurisdiction, estimated supply shed surrounding a processing facility or aggregation point, or similar area-level delineation.

Circumstances when this approach may be appropriate include:

- Upstream companies such as primary processors may source commodity volume from an area around their facilities without maintaining long-term buying relationships with specific producers. In these cases, it may be appropriate to monitor at the level of the estimated sourcing area, which will provide a time-averaged approximation of the company's sourcing footprint. For the purpose of such monitoring, the sourcing area should be delineated so that it includes all producers from whom the company buys or may buy over a multi-year period.
- Downstream companies whose suppliers do not provide adequate traceability or effective controls (e.g., because these suppliers purchase their supply on the spot market or through trader-to-trader exchanges in which origin information is not provided) may need to pursue monitoring of sourcing area as the best available option. This can be done by linking purchases to broader sourcing areas, such as municipalities or mills of origin.

By definition, area-level monitoring does not provide precise information about the specific production units of origin. Therefore, it carries some limitations in its ability to demonstrate compliance with supply chain commitments or to track progress with a high degree of accuracy. Companies must understand these limitations so that they can avoid spurious applications of this approach. In general, there are two legitimate ways to apply area-level monitoring:

- **Conservative approach:** This approach assumes that any negative impacts or non-compliances found within the sourcing area that is the subject of monitoring are attributable to the company's actual supply origins. Accordingly:
 - If the sourcing area has no non-compliances relative to a given commitment, then it can be assumed that all supplies originating from this area are likewise free of non-compliances for this same commitment. This is essentially the same as determining that a given area is low risk,⁹ following a risk assessment or jurisdictional- or landscape-level monitoring exercise.

⁹ "Low risk" is defined as "a conclusion, following a risk assessment, that there is negligible or insignificant risk that material produced in or sourced from a given context is non-compliant with one or more aspects of a company's social and environmental

- If the sourcing area is determined to have some non-compliances relative to a given commitment, then the company may choose to make the conservative assumption that all these non-compliances are attributable to the company's actual supply origins. This approach is legitimate for reporting purposes because claims about compliance will always be conservative. However, area-level assessments of non-compliance generally do not provide companies with enough information to pinpoint the location and nature of non-compliances so that they can determine how best to address these outstanding issues. Therefore, further traceability or engagement with suppliers to develop effective control mechanisms is still likely to be needed.
- **Risk-based approach:** Companies may use area-level monitoring as a methodology for assessing risk within the company's actual sourcing origins located within the given area (see *Operational Guidance on Supply Chain Management*). As noted above, if area-level monitoring determines that there are no non-compliances within the entire area (i.e., the area is low risk for a given commitment), then more fine-scaled monitoring of that commitment is typically unnecessary. However, if area-level monitoring identifies a non-trivial amount of non-compliance for a given commitment, then the company's supply base within that area would not be considered low risk. In these cases, unless the company wishes to take the conservative approach (see above), it will need to invest in additional traceability and/or control systems of its suppliers to identify its supply origins and the associated level of compliance more precisely. Until this is done, companies should report the area from which these supplies originate and should classify these supplies as either: i) non-compliant, with the degree of non-compliance based on the conservative approach described above; or ii) non-compliant, with the precise origin and compliance level unknown.

In sum, area-level monitoring can be a helpful step toward assessing risk and approximating levels of compliance and performance when a company's exact supply areas are not known. However:

- Area-level monitoring should not be used when supply origins are or could reasonably be known and monitored with greater precision (e.g., down to specific mapped production units).
- Except where area-based monitoring reveals low risk of non-compliances relative to a given commitment across the entire area, the AFI strongly encourages companies to pursue further traceability and more effective control mechanisms to move toward monitoring of the specific production units and processing facilities of origin.

3.2.1 No-deforestation and no-conversion commitments

Area-level monitoring may be used to assess whether land use change is occurring in areas likely to be associated with production and sourcing of a commodity. This information can be used to estimate potential deforestation or conversion, conservation, or restoration.

A range of approaches, tools, and calculations may be used to monitor land use/land cover change in a sourcing area, depending on the type and nature of commodity production, the level of risk of non-compliance, the size of the area being monitored, and the tools and products available for the given context. The following should be considered when selecting the appropriate tool:

- Monitoring at this level may use existing remote sensing tools based on medium resolution imagery (e.g., 30-meter) that characterize pre-classified land cover types (e.g., forest, grassland, and agriculture). When the boundaries of specific production areas are unknown, these tools may be used to assess risk of land conversion or encroachment into conservation land within the sourcing area.

commitments or obligations." When area-level monitoring determines that the given area is low risk relative to a given commitment, then companies may assume that supplies from that area fulfill that commitment.

- In some regions, there are tools that have pre-analyzed land cover change data at the level of administrative units (e.g., see Trase methodology in box below). When available and when administrative units are suitable proxies for estimated sourcing areas, these products can provide helpful data for area-level monitoring.
- Companies monitoring at the area level will likely also need to incorporate ground-based monitoring techniques including interviews, document review, and assessment of complaints or grievances related to their suppliers.

Tools for calculating potential land conversion in a sourcing area

Information about sourcing volume, in combination with information about land use change as described above, can be used to estimate land use change and associated greenhouse gas (GHG) emissions associated with the procurement footprint of a company's supply chain. For instance:

- Trase¹⁰ calculates a metric called "maximum soy deforestation," which it defines as the amount of deforestation in a municipality that could be due to newly planted soy fields. This calculation integrates official statistics on new areas of soy expansion with data on deforestation in the same area for the same year. For example, if only 10 ha of soy were planted, and 50 ha of deforestation occurred, then the maximum deforestation attributable to soy is 10 ha. Likewise, if 60 ha of soy were planted in an area where there were 15 ha of deforestation, the maximum soy deforestation would be 15 ha. The maximum soy deforestation metric is an example of the conservative approach described above, and, in the absence of more precise data, may be used by companies to provide a conservative estimate of their deforestation footprint in a given sourcing area.
- The consulting group Quantis¹¹, in consultation with a range of stakeholders, has developed a useful and broadly applicable methodology for calculating GHG emissions arising from both direct and indirect land use change in relation to company supply chains. This approach is applicable even when the specific land base is unknown, as emissions from land use change can be modeled at the area level using secondary information about the location of production in the relevant region, areas of production or sourcing by known suppliers, market information on production volumes and exports, and patterns of land use change.

3.2.2 Human Rights commitments

Area-level monitoring for human rights commitments is generally appropriate only if the risk of non-compliance at that level is determined to be low. If the area is not low-risk, then compliance must be assessed at the level of production units or primary processing sites (section 3.1.2). Area-level monitoring of human rights commitments therefore generally follows similar or identical approaches as human rights risk assessments (see *Operational Guidance on Supply Chain Management* for further information about risk assessment methodologies and good practices).

For company commitments related to respecting the rights of IP/LC, area-level monitoring can help determine whether IP/LC currently or previously occupied or use the area and whether there are instances of land conflict or rights violations that might be associated with commodity supplies originating from the area. If not, then the area may generally be considered low risk for non-compliance with such commitments.

Area-level monitoring is typically less suitable for assessing commitments related to workers' rights because such rights cannot be assessed over broader areas using remote sensing tools or information on community characteristics. However, area-level risk assessments can help determine the likelihood of non-compliance with

¹⁰ See: <https://medium.com/trase/how-trase-links-companies-and-commodities-to-deforestation-risk-4f371a66efaf>

¹¹ See: <https://quantis-intl.com/metrics/initiatives/lucguidance/>

various workers' rights and thereby help focus more detailed monitoring and supply chain engagement on these rights.

3.3 Monitoring supplier management and control systems

Downstream companies depend on their suppliers for information about the origins of their supplies, the performance of direct and indirect suppliers with respect to company commitments, and mechanisms used to monitor and control compliance at the supply base level. Therefore, for downstream companies to be able to effectively monitor environmental and social outcomes at the supply base level, they will need to assess the extent to which their suppliers have adequate monitoring and control systems in place to assess compliance, address non-compliance where necessary, track the results of these improvement processes, and pass complete and accurate data to their buyers.

As indicated in [Core Principle 2](#), the origin of commodities should be known or controlled to a sufficient extent to ascertain compliance and/or determine the extent and nature of non-compliance. If suppliers have effective control systems in place¹², then in many cases downstream companies will not need to carry out further monitoring upstream of the given control system. In such cases, downstream companies should monitor the presence, effectiveness, and outcomes of the following aspects of their suppliers' management and control systems to ensure that these systems are indeed providing the needed level of monitoring data and assurance regarding compliance with the downstream company's commitments. This monitoring should consider whether the supplier has the following commitments, processes, and systems in place and effectively functioning:

- Specific, public, time-bound commitments for the supplier's supply chains (including its own operations and purchased supplies). These commitments should match the scope of the downstream company's own commitments and should not exclude any part of the supplier's business for which there is significant risk of negative impacts relative to these commitments (see [Core Principle C1](#)).
- Applicable law assessments undertaken to determine compliance with legal requirements and internationally recognized human rights (see [Core Principle C4](#) and *Operational Guidance on Conducting an Applicable Law Assessment*).
- Risk assessments carried out to justify any commitment scope exclusions and to identify suppliers at risk of non-compliance with company commitments and policies (see [Core Principle 2.1](#) and *Operational Guidance on Supply Chain Management*).
- Management systems used to facilitate supply chain transparency and actions being taken to improve traceability (see [Core Principle 2.2](#) and *Operational Guidance on Supply Chain Management*).
- Systems in place to identify and engage non-compliant operations and suppliers, to address and remedy non-compliance, and to minimize or exclude non-compliant suppliers as necessary (See [Core Principle 3](#) and *Operational Guidance on Supply Chain Management*).
- Policies and practices to ensure the long-term protection of areas and values of ecological and cultural importance, such as High Carbon Stock forests and High Conservation Values (see [Core Principle 5](#)).
- Presence of an effective company grievance mechanism, processes to address and track all grievances and concerns received by the company (or otherwise known through reasonable efforts by the company), and disclosure of all grievances and the company's response to these. Note that downstream companies themselves are also expected to have effective grievance mechanisms in place (see [Core Principle 6](#) and *Operational Guidance on Remediation and Access to Remedy*).
- Policies and activities to engage with smallholders, indigenous peoples, local communities, and other stakeholders, as appropriate to the context and issues at stake (see [Core Principle 7](#)).

¹² As elaborated in Section 2 of the *Operational Guidance on Supply Chain Management*, effective control systems may include certification or other credible assurance systems, control systems of traders or other intermediaries, or jurisdictional monitoring and control systems.

- Monitoring systems – including appropriate tools, methods, and data sources – to assess relevant aspects of production and processing operations, supplier management, and other activities related to compliance with company commitments and policies (see [Core Principle 8](#) and this Operational Guidance).
- Independent verification of compliance and progress of the supplier’s own operations and purchased supply. This includes furnishing the downstream buyer with information on the verification scope and methodology, including any control measures used, such as certification or other credible third-party verification at the supply-base level (see [Core Principle 8](#) and this Operational Guidance).

In sourcing areas where there is a moderate or high risk of deforestation, conversion, or human rights violations, and where supplier control and assurance mechanisms do not provide adequate reliable information on compliance levels, downstream companies will need to work with their suppliers or take measures of their own to supplement supplier-provided information. This may include:

- conducting further traceability beyond the level of the given supplier (e.g., down to the supplier’s suppliers of raw or primary processed materials)
- reviewing maps of production boundaries and location of mills and processing facilities to conduct their own assessment of the degree of compliance of these supply origin
- where weaknesses or non-compliances are detected, monitoring time-bound supplier implementation plans aimed at addressing the problems and providing any necessary remediation (see Section 5 of the *Operational Guidance on Supply Chain Management*)

In these situations, buyers should also consider second- or third-party verification (e.g., supplier audits), as detailed in Section 4.

4. Guidelines for credible verification

Along with an effective monitoring system, the verification process ([Core Principles 8.7 and 8.8](#)) is a key component of a company’s assurance system for demonstrating compliance with or progress toward supply chain commitments. Verification serves to assess and validate the findings of monitoring processes and other information related to the social and environmental outcomes of commodity production. Verification is well-established as an important component of responsible supply chain implementation systems, including voluntary certification programs, sector initiatives, and others.

Companies (both suppliers and buyers) should establish verification mechanisms that document levels of compliance and progress relative to company commitments and provide the necessary level of assurance both for internal management and for external stakeholders. This may include one or more of the following three different types of verification, which are classified based on the relationship between the company and the verifying party:

- **First-party verification** is conducted by the company itself, although it should be implemented by personnel not involved in the management of the operations being verified.¹³
- **Second-party verification** is conducted by a related entity with an interest in the company or operation being assessed, such as the business customer of a production/processing operation or a contractor that also provides services other than verification.

¹³ The concept of verification signifies that information is validated by persons other than those involved in the operation or entity being assessed. Thus, even in the case of first-party verification, a person or team separate from the operation or unit being assessed should be designated to carry out the verification. Data collection or assessment carried out by personnel involved in the operation or unit being assessed is generally considered to be monitoring but not verification.

- **Third-party verification** is conducted by an independent entity that does not provide other services to the company. Third-party verification may be conducted either through or outside of a certification program.

First and second-party verification is sometimes referred to as an internal audit. The results of such audits are often used internally by the company to guide its decision-making. Third-party verification is also referred to as external assurance. The output of third-party verification usually includes public disclosure of the verification methodology and results, at least in summary form ([Core Principle 8.9](#)).

First, second, and third-party verification approaches are not mutually exclusive; companies may carry out self-assessments (first party) or contract with service providers (second party) to gauge compliance and identify gaps for improvement, and then add independent assurance through use of third-party auditors. Decisions on when and where to use internal verification, external verification, or a combination thereof depends on several factors; see Section 4.2, below.

4.1 Characteristics of a credible verification process

[Core Principle 8.7](#) specifies that companies should follow good practices for credible verification, regardless of the type of verification used. Key characteristics of a credible verification process include:

1. **Consistency** through documented procedures and decision-making protocols, including the methodology used for making determinations of compliance or non-compliance
2. **Rigorous methodologies**, including:
 - appropriate scope and scale of verification;
 - auditable metrics; and
 - appropriate methods (including justification of audit intensity, i.e., the number of auditors and audit days) for verifying compliance.

Rigorous verification methodologies may coincide or overlap with the monitoring methodologies described in Sections 2 and 3, or they may focus at a broader level and entail greater emphasis on company systems and processes as opposed to detailed on-the-ground measurement. For instance, verification methodology may include verification of the adequacy of a company's monitoring plan, verification of satellite imagery and maps used to monitor no-deforestation and no-conversion commitments, and verification of complaints and their resolution. It may also include ground-level sampling that is less intensive than sampling designed for monitoring.

3. **Competent auditors**, with appropriate skills, knowledge and expertise for the area being verified. This includes, for example:
 - knowledge and expertise in the specific issues being verified; when auditing both social and ecological issues (e.g., deforestation effects on indigenous peoples and local communities), audit teams will need to include members representing different skillsets;
 - 'soft skills' such as critical thinking, problem solving, and communications;
 - ability to understand documents and identify instances when documents may have been improperly manipulated;
 - ability to develop and implement stakeholder consultation methodologies; and
 - particularly for environmental issues, proficiency in the use of geospatial tools and GIS.
4. **Impartiality and independence** through use of persons or organizations (whether internal employees or external auditors or auditing organizations) who are free of affiliation or relationships that could impair objectivity. While internal auditors cannot be completely independent from the company, their payment arrangements and terms of reference should not cause or contribute to undue influence or prejudicing the verification process. Auditors should be independent of the company's main

operational activities or commitment being evaluated and should not report to the entity managing or responsible for business results from the operation being verified.

5. **Transparency** to help foster external review or scrutiny of verification processes. This may be achieved through robust company policies and practices for:
 - stakeholder engagement;
 - managing grievances; and
 - public disclosure of information¹⁴, commensurate with assurance needs, including:
 - methodologies used for M&V, traceability, and risk assessments (including approaches, metrics and tools used); and
 - information related to grievance mechanisms, including a summary of grievances received and the status and/or outcome of their resolution.
6. **Linkage to improvement processes** by incorporating approaches that go beyond traditional 'tick the box' auditing but instead support continuous engagement, learning, and improvement of operations so that they can more effectively avoid and mitigate future adverse impacts and reach full compliance with commitments. This is particularly valuable for non-compliances related to human rights, which are often harder to detect than environmental ones. Good practice includes:
 - use of root cause analyses to identify the underlying causes behind the verification findings so that the company is best positioned to use the verification process to improve its own practices and those of its suppliers;
 - collaborative processes that engage communities, workers, and other stakeholders in developing the verification methodology and implementing the verification procedures, particularly identification of metrics that should be used for measuring progress or achievement and designing realistic feedback mechanisms; and
 - use of verification results to define capacity building needs and opportunities.

In addition to these characteristics, the UN Guiding Principles Reporting Framework identifies a set of nine factors that merit heightened focus when designing and implementing assurance processes for human rights topics.¹⁵ These include elements such as identifying salient human rights issues in a given context and ensuring that the assurance scope is appropriately defined to avoid exclusion of key issues or considerations. Companies are strongly encouraged to incorporate these considerations into assurance related to human rights commitments.

¹⁴ The Accountability Framework encourages and supports supply chain transparency to help accelerate progress and improve accountability toward fulfilling company commitments. See the *Operational Guidance on Reporting and Disclosure* for more details.

¹⁵ See the UNGP Assurance Guidance at https://www.ungpreporting.org/wp-content/uploads/UNGPRF_AssuranceGuidance.pdf.

Stakeholder engagement during verification audits

Stakeholder engagement can be a critical part of the verification process, serving both to define the appropriate scope and methodology for verification activities and to furnish information and perspectives that improve the accuracy and legitimacy of verification results. Stakeholder engagement may be especially critical when verifying compliance to human rights commitments, as it can be difficult to properly understand human rights conditions and impacts without engaging the affected people and communities. Following are key considerations and good practices for stakeholder engagement in verification processes:

- Auditors should have expertise in processes for engaging stakeholders and others affected by the company's operations, including employees, contract workers, indigenous peoples, local communities, women and children, and other vulnerable groups.
- Engagement processes should begin with a stakeholder mapping exercise to ensure that all key groups are included in a sensitive and appropriate manner.
- The audit plan should allocate sufficient time for stakeholder interviews and the audit report should demonstrate that sufficient time was spent on interviews. A general guideline is that approximately 50% of the total audit time should be spent on interviews.
- Interview formats and techniques should be tailored to maximize the likelihood of eliciting relevant information while protecting the safety and confidentiality of interviewed parties. This usually requires a combination of individual and group interviews.
- Interviewees should be selected through accepted sampling techniques (such as stratified random sampling) that ensure broad representation of all relevant stakeholder groups across parameters such as age, ethnicity, gender, employee status, location, and type of work performed.
- Female stakeholders should generally be interviewed by female auditors to the extent possible.
- Issues identified during interviews and stakeholder consultation should be thoroughly investigated.
- Interviews and consultation should be conducted in a culturally appropriate manner using languages, methods, and settings that facilitate open engagement and protect the wellbeing of participants.
- The results of stakeholder consultations should be shared with and verified with the consulted groups to ensure that they accurately reflect input given. Where there are disagreements on the scope or nature of impacts, stakeholder responses can be included in the final audit results in a manner that protects their safety and confidentiality.

Invitation for input

The above characteristics of credible verification are based on requirements or guidelines from existing references such as the ISEAL Assurance Code, International Organization for Standardization (ISO), and guidelines of the UN Guiding Principles on Business and Human Rights. Should additional characteristics of credible verification be included here? Would it be helpful to provide further guidance or examples for any of these? If so, for which ones?

4.2 Third-party verification

Third-party verification serves a valuable function as part of an overall M&V system by providing a higher level of confidence and credibility that a given level of compliance or progress has been achieved. [Core Principle 8.8](#) calls for third-party verification to be conducted to the extent necessary to validate compliance and performance levels and provide the requisite level of independent assurance to substantiate communications and claims. [Core Principle 8.9](#) calls for reports of third-party verification exercises (or summaries thereof) to be made publicly available.

Expectations for the use of third-party verification of company commitments will differ by context depending on: i) the nature of the commitments being assessed; ii) the risk context of the operations or supply chains being assessed; iii) the reputation of the company as a strong or poor performer on environmental and social issues; and iv) the nature of the claims that the company wishes to make. Examples of instances where third-party verification might typically be required include:

- to verify the monitoring and control systems of suppliers to assess whether the resulting information can be relied upon to identify compliant supplies and understand the nature of any outstanding non-compliances
- to verify assessments of compliance with no-deforestation and no-conversion commitments based on satellite imagery
- to verify the veracity of traceability information (i.e., the origin of supplies)
- to verify that site-level assessments and planning processes¹⁶ carried out by producers and primary processors have been duly conducted and that the resulting management prescriptions (including all measures to avoid and mitigate negative impacts) are being effectively implemented
- to assess supplier compliance with human rights commitments through interviews with potentially affected parties in a manner that is conducive to detecting impacts and harms and to protecting the safety and confidentiality of such parties
- to assess the effectiveness of grievance mechanisms and determine the extent to which grievances are being properly and expeditiously resolved

Invitation for input

Considering the above examples of instances where third-party verification might be required, readers are invited to share their perspectives on when third-party verification should be expected, and to what extent these expectations should differ based on the topics or outcomes being verified, the nature of the operations being assessed, and other factors. Please include any relevant experiences, examples or best practices that you think may help support further development of this section of the Operational Guidance.

Third-party verification is generally more credible if it is subject to a ***governance or oversight mechanism*** that helps to ensure the quality and legitimacy of the verification process. While many third-party certification systems include an oversight mechanism (e.g., a process for accreditation and oversight of certification bodies to ensure their consistent and competent performance), there are presently few or no oversight mechanisms for third-party verification conducted outside the context of such certification systems. In these cases, companies should take measures to institute oversight and quality control mechanisms to improve the quality and credibility of verification. Such measures may include:

- selection of a verification organization that conforms to relevant standards for independent assurance, such as ISO/IEC 17021-1:2015, ISO/IEC 17065:2012, and the Institute of Internal Auditors Global (IIA Global)
- peer review of verification methodologies, assessments, and results
- increased levels of information transparency (e.g., full disclosure of audit results and their basis)
- establishment of an external stakeholder oversight committee
- support for the establishment of an independent verification coordination entity that receives funds from multiple companies and is responsible for drafting terms of reference, auditor selection, handling of payments, and other oversight functions

¹⁶ This may include processes and methods such as ESIA, HCV and HCSA assessments, land tenure and land use studies, community mapping, and FPIC processes. See the Operational Guidance on Respecting the Rights of Indigenous Peoples and Local Communities for further detail.

When companies report verified results – and when they report on verification activities as part of their overall disclosure on management systems – the AFi encourages them to describe the type(s) of oversight mechanisms in place. Doing so will help external stakeholders understand the level of reliability and credibility of any verified results that are reported. See the Operational Guidance on Reporting and Disclosure for further discussion.

5. Opportunities for improving effectiveness and efficiency of M&V through collaboration

There is considerable interest in the development of jurisdictional and landscape approaches to help fulfill and demonstrate fulfillment of company commitments. Companies and other stakeholders see such approaches as a potential way to improve the cost-effectiveness and scalability of supply chain compliance and M&V as well as to reduce leakage (displaced impacts) and improve long-term outcomes for ecosystem conservation, land governance, and human rights. While the implementation of landscape approaches that effectively address supply chain impacts and risks is generally at an early stage, the Accountability Framework provides guidance on how and under what circumstances companies may utilize jurisdictional monitoring or control systems to help address M&V needs. Please see the Operational Guidance on Applying Voluntary Commitments in Context for more information on this topic.

In addition to efforts facilitated through jurisdictional approaches, groups of companies may be able to collaborate pre-competitively to improve M&V processes in ways that do not violate anti-collusion laws or practices. Specifically, buyers sourcing from the same origins are encouraged to pursue opportunities to work together on M&V activities and to support efforts such as

- sharing traceability and risk assessment information for common suppliers or supply origins
- populating national and sub-national risk assessment tools with risk-related information that they gather on their supply bases
- developing joint monitoring plans

Invitation for input

What are some examples of effective collaborative M&V approaches that should be further explored or promoted by the AFi?

Annex 1: Use and characteristics of appropriate monitoring tools

This Annex provides additional information about specific monitoring tools and data sources that companies may use as part of their M&V systems. This includes subsections on: a) geospatial monitoring tools; b) ground-based monitoring tools; and c) community-based monitoring.

A. Geospatial monitoring tools

Geospatial data sets, information products, and tools are increasingly capable of detecting deforestation and other land use changes in near-real time and compared to a baseline time period. These tools can serve as a primary means for monitoring compliance with no-deforestation-free and conversion-free commitments and some tools are also available that detect land tenure violations. While these tools may be used primarily to measure environmental impacts, given that indigenous peoples' and local communities' physical and cultural survival often depends on the connection that they have with their lands and resources, measured environmental impacts can also be used to predict the likelihood of certain kinds of social impacts.

In selecting appropriate geospatial monitoring tools for a given context and application, the following characteristics should be considered:

- **Geography:** The tool should cover the area that is being monitored. Some tools have monitoring data and functionality only for a specific region or country, while others can be applied worldwide.
- **Resolution:** Remote sensing tools differ in the resolution of the data they provide. Coarse- and medium-resolution tools can detect larger changes in land cover and those that are more distinct, while high-resolution products may be used to detect smaller land use change events (e.g., clearing by smallholders), or more gradual or hard-to-detect land cover classes. 30-meter resolution is a common starting point for assessing risk of forest loss, and a number of existing publicly available remote sensing-based tools and products assess land cover at a 30-meter resolution. 10-meter (or higher) resolution can in many cases more accurately determine the presence and extent of land conversion or forest loss in production areas. In some cases – particularly agroforestry systems or mosaic farming systems with many small plots and indistinct land use categories – even high resolution remote sensing-based approaches may be ineffective at assessing land use change. See Section 3.1.1 for further discussion of how resolution is considered when monitoring land use change.
- **Frequency:** Some tools' data is updated as frequently as daily, while others is updated monthly, annually, or over longer time periods. The data and tools used for monitoring should include temporal coverage aligned with the relevant cutoff dates specified in the commitments, as well as updated information at least annually following that time.
- **Metrics:** Some tools may provide information on multiple metrics and metrics related to deforestation and conversion while others may concentrate on one specific metric, such as forest cover. Tools should be selected that measure the appropriate land use or land cover characteristic for the commodity, ecosystem type, and land area in question.
- **Commodity:** Some tools are commodity-specific while others can be utilized for any commodity. Many tools are accurate for detecting changes from forest to pasture or forest to row-crop agriculture but may not reliably detect changes from natural forest to forest plantations, tree crops, or agroforestry systems. Customized tools, greater spatial resolution, specialized imagery interpretation, or ground-based assessment may be needed where remote sensing-based tools are not able to reliably detect the types of land cover change associated with the given commodity production system.
- **Usability:** Some tools are designed to enable the overlay of, and interaction with, supply chain data within the tool itself. Where this functionality does not exist, land cover and environmental monitoring data will typically need to be extracted and analyzed using appropriate software, such as ArcGIS.

B. Ground-based monitoring methods and tools

Ground-based monitoring techniques serve as a primary means for monitoring human rights commitments. They should also be used in concert with geospatial tools to monitor deforestation-free and conversion-free commitments to calibrate and ground-truth remote sensing tools, gain further precision (particularly in areas of higher risk or with high ecological/cultural value), and incorporate information that is not accessible through remote sensing. Combining ground-based tools with geospatial tools also helps to assess connections between environmental commitments and human rights impacts. Some of the main ground-based monitoring approaches – and good practices for selecting and applying these – are outlined below.

- **Social mapping** (also known as community mapping) is used to identify affected and potentially affected people, assess baseline conditions, and monitor change. Social mapping may include a combination of tools, such as community and household surveys, stakeholder interviews, desk review of anthropological studies, and assessments such as the Environmental and Social Impact Assessments (ESIAs) required prior to land acquisition or to establishing or significantly expanding operations.
- **Site-based ecological monitoring** should generally be used to: i) supplement remote sensing tools when they are not able to reliably detect the relevant land cover change patterns, for instance due to small patch sizes or non-discrete land cover types such as mixed forestry or agroforestry systems; and ii) monitor the status, management, and protection of remaining areas of natural ecosystem, such as High Carbon Stock forests. The latter application is suitable for detecting site-level degradation or restoration trends. Ecological monitoring usually involves assessments of ecosystem composition, structure, and function, carried out according to a defined sampling regime, such as stratified random sampling or transects. Ecological monitoring should be designed by trained practitioners in consultation with indigenous peoples and local communities (IP/LC) with relevant experience and knowledge of the area, where appropriate. Monitoring may be carried out by trained ecologists or by community members or paraprofessionals that have received the necessary training and support to conduct this activity.
- **Stakeholder interviews, surveys, and consultation** should be used when necessary to understand issues related to the rights of IP/LC and workers, as well as environmental impacts that may affect these groups. These consultations may include government representatives, potentially affected stakeholders, workers, CSOs/NGOs, subject matter experts, and community-based monitoring groups. Interview and consultation processes should ensure safety, confidentiality (when requested), gender sensitivity, and participation of otherwise marginalized and vulnerable groups.
- **Document review** should be conducted at multiple levels:
 - Upstream suppliers should review records that demonstrate compliance with commitments, such as land titles, permits, concession records, workers' wages and safety records, company grievance mechanisms, and results or documentation of assessment or planning processes, such as community monitoring reports, Environmental and Social Impact Assessments (ESIAs),

Sampling practices

Regardless of the monitoring technique(s) used, if monitoring is to be based on a sample of locations, production units, or affected persons or groups, this sample should be selected according to good practices, such as:

- The sample size should be determined by: the level of precision and confidence desired (the larger the sample yields greater precision and confidence in the results); the degree of variability in the topic being monitored (greater variation necessitates larger sample sizes); and the size of the effect to be identified (smaller effects necessitate larger sample sizes).
- A stratified sampling approach should be used to help ensure that all key groups or land types are included within the sample.
- Sample should include unique, sensitive, or important features, such as high conservation values (HCVs), areas where conflict is known to occur, and communities where remediation is taking place to address prior rights violations or land conflict.

High Conservation Value (HCV) or High Carbon Stock Approach (HCSA) assessments, and outcomes of Free Prior and Informed Consent (FPIC) processes. Available third party reports relevant to the site, including any relevant reports generated by the government or non-government organizations, should also be reviewed.

- As a means of monitoring supplier capacity to effectively monitor at the supply-base level, downstream companies should review supplier management systems and policies, as well as methodologies used for monitoring and the results of such actions. Reports from grievance mechanisms and any media or crowdsourced reports should also be reviewed. In cases where supplier management systems are not found to be adequate for controlling the supplier's supply chain and detecting non-compliance with company commitments, downstream companies may also need to review the primary documents listed in the bullet above.
- **Review and evaluation of grievances** submitted through the company grievance mechanism or other grievance mechanisms is now common practice for companies to have in place, and the Accountability Framework ([Core Principle 6.1](#), see also *Operational Guidance on Remediation and Access to Remedy*) and other key normative frameworks (e.g., the UN Guiding Principles on Business and Human Rights), certification standards, and supply chain implementation tools (e.g., HCSA) expect companies at all stages of the value chain to implement them. For monitoring purposes, grievance mechanisms should:
 - provide a channel for stakeholders to raise complaints and thereby identify potential non-compliances and adverse social and environmental impacts;
 - serve as a risk management tool that can provide early warning to prevent and mitigate problems;
 - help companies analyze trends and patterns to identify systemic problems and then adapt practices accordingly; and
 - enable companies to monitor whether and how complaints were resolved.
- **Community-based monitoring approaches** can be valuable and often necessary supplements to the work of monitoring professionals, and are particularly valuable for assessing human rights issues. Companies are encouraged to utilize and/or support the development of community-based monitoring initiatives. See Section below on community-based monitoring for more details.

C. Further information on community-based monitoring

Community-based monitoring (CBM) is the general term for approaches that engage local people in M&V processes. Through CBM, local communities can play an essential role in monitoring the status and trends of forests and other natural ecosystems, terrestrial carbon stocks, lands and natural resources of IP/LC, respect for various human rights, and other key topics. With advancements in technology including drones, GPS-enabled mobile devices, and app-based monitoring tools, CBM is increasingly used for a range of monitoring applications (e.g., REDD+ monitoring) and its multiple benefits are increasingly being recognized.

Types of CBM

There are different types of CBM approaches with different levels of local engagement. Whether utilizing existing CBM processes or initiating new ones for M&V purposes, it is important to understand the characteristics of different CBM approaches to ensure that a given process will be fit-for-purpose. Key aspects to consider include:

- **How is the community involved?** The role of community members can include one or a combination of:
 - carrying out monitoring activities according to externally-defined certification standards, legality agreements, regional principles, or other established protocols;

- community-driven processes, whereby local stakeholders have a leading role in developing the monitoring scope, metrics, and methodology, collecting and analyzing the data, and managing the overall process; and/or
- participatory processes based on goals and objectives shared between the company and local communities.
- **What is being monitored?** This may include:
 - quantitative or other objective data points such as quantifying carbon stocks or identifying areas where tenure rights have been adversely impacted; and/or
 - qualitative information that is more contextual in nature, such as the underlying reasons behind land conversion or tenure rights violations.

Benefits of CBM

CBM on its own or in combination with other monitoring tools can bring a diversity of benefits, including:

- cost-efficiencies, particularly for ground-based data collection and ongoing (continuous or time series) data collection;
- incorporation of local knowledge, expertise, experiences, and skills;
- development of locally relevant M&V systems and mitigation measures that are more likely to speak to the particular issues, risks, and impacts in a given context;
- provision of data that may not be available through other approaches, as the community may be best positioned to collect that data (examples include: community-based mapping to determine land tenure and where rights or resources overlap with production areas; and non-compliances or adverse impacts to human rights that are challenging to detect through other mechanisms); and
- triangulation of remote sensing-based monitoring data to confirm, improve, or refine the interpretation of such data.

Moreover, the benefits extend beyond M&V purposes:

- For capacity-building purposes, CBM is a mechanism for engaging communities and reinforcing other community-based management systems, such as increasing local knowledge for improved forest management, securing access to rights and resources, and improving governance and decision-making processes.
- For trust-building purposes, CBM increases transparency of company operations and creates a channel for constructive dialogue between companies, communities, and civil society.

When to use CBM

The decision to use CBM for supply chain M&V depends on the existence of (or ability to initiate) CBM processes, as well as the relative importance of community perspectives in monitoring and verifying the subject issues in the given context. Importance may be greater under the following circumstances:

- **For environmental issues:** CBM should be considered especially when remote sensing-based assessment of land cover change (e.g., deforestation) or ecosystem quality (e.g., forest degradation or protection of High Conservation Values) is not able to adequately assess compliance and therefore requires ground-based investigation.
- **For social issues:** CBM is particularly useful for detecting potential human rights violations, risks and harms, and should be considered for all areas that are not designated as low-risk for such issues.

Key characteristics for effective and robust CBM

Credible CBM should generally follow the same best practices used for other types of monitoring, while also incorporating elements that will enhance the additional benefits of incorporating local people into M&V

The Accountability Framework

processes. Depending on the type of CBM being conducted, there are a range of good practices that will contribute to the effectiveness of the CBM effort. These include:

1. Independence (from the company) and impartiality
2. Selection of locally-relevant and meaningful metrics and verifiers
3. Clear methodology for data collection and a shared understanding and agreement with the community on the methodology being deployed
4. Clear objectives and terms of use for the data that are collected
5. Participation of women (participation should be encouraged; however, setting minimum quotas on gender equity is not always practical)
6. Access to technology and use of data collection methods that are feasible for the community to implement
7. For participatory approaches, inclusion of community members at all stages in the process, including defining the monitoring scope, metrics and methodology; data collection; and interpretation and communication of results
8. Investment in capacity building of CBM participants, such as trainings and peer exchanges
9. Where applicable, alignment between supply chain CBM and CBM processes supporting M&V of other activities, such as national REDD+ monitoring

Invitation for input

Would it be beneficial to work toward increased standardization in methodologies and practices of CBM to help support the wider and more effective use of such systems? How else can AFi help advance effective community-based monitoring of company commitments?

CBM resources

As CBM grows in importance and popularity, the tools, templates, examples, and other resources available for engaging in CBM continues to expand. Organizations and initiatives such as Forest Compass¹⁷, Forest Peoples Programme¹⁸, and Rights and Resources Initiative¹⁹ have libraries of information on their websites to support companies in integrating CBM into their M&V processes.

Data collection tools – such as Open Data Kit, GeoODK, Sapelli, Indigenous Navigator, and Frontline SMS – are available to help communities collect and manage information from CBM. Moreover, initiatives such as the Africa Practitioners Network and Kumakaya have been established to help build capacity of local communities and experts to conduct or support CBM and link it to supply chain accountability processes. Companies are encouraged to consider these and similar kinds of tools to help integrate CBM effectively into their overall M&V systems.

¹⁷ www.forestcompass.org

¹⁸ www.forestpeoples.org

¹⁹ www.rightsandresources.org

Annex 2: Indicative metrics for assessing deforestation, conversion, and long-term protection of natural ecosystems

This Annex provides indicative metrics for monitoring and reporting against commitments to deforestation-free and conversion-free supply chains, including the long-term protection of natural ecosystems. This is not meant as a comprehensive or mandatory set of monitoring metrics, but is intended to provide a common set of acceptable metrics that companies can consider, adopt, or adapt when developing or refining their M&V system.

Selection of appropriate metrics depends on commodity, geography, data availability, and other factors. Some of these metrics require data that may not be available to companies for all of their producers and suppliers.

Monitoring type	Metrics of deforestation and conversion (including long-term protection of natural ecosystems)
Monitoring of production units and primary processing sites (Section 3.1)	<p><u>Deforestation:</u></p> <ul style="list-style-type: none"> • Hectares (ha) natural forest converted since the applicable cutoff date • Percent of total area of operation that has been subject to deforestation since the applicable cutoff date <p><u>Conversion of natural ecosystems:</u></p> <ul style="list-style-type: none"> • Ha natural ecosystem (including peatlands, wetlands, and grasslands) converted since the applicable cutoff date • Percent of total area of operation that has been subject to conversion since the applicable cutoff date <p><u>Increased production area:</u></p> <ul style="list-style-type: none"> • Hectares newly in production for the commodity since the previous year's reporting; the percentage of total production area that this increase represents; and previous land cover and land use of those hectares <p><u>Land-based greenhouse gas (GHG) emissions:</u></p> <ul style="list-style-type: none"> • Direct GHG emissions (in metric tons of CO₂-equivalent) and their primary source(s), arising from land use change (including deforestation, conversion, and draining of peatland or wetlands) attributable to commodity production within the company's own operations (Scope 1) or in their supply chain (Scope 3). • Avoided or reduced GHG emissions (in metric tons of CO₂-equivalent) resulting from commitment implementation <p><u>Extent and condition of conservation area:</u> presence, area, and condition of natural ecosystem in conservation within the boundaries of, or associated with, production units or primary processing sites. This may include:</p> <ul style="list-style-type: none"> • Hectares of natural ecosystems within the subject production unit(s); this total area may be disaggregated by relevant designations, such as High Carbon Stock forests or areas with high conservation values, as defined by relevant assessments • Hectares of reserved conservation area • Percent of originally identified HCV/HCS area under conservation • Relevant context-specific metrics of ecosystem degradation within conservation lands, including reduced canopy cover, fragmentation, species richness, or other measures of ecosystem structure or function

	<p><u>Restoration or remediation:</u></p> <ul style="list-style-type: none"> • Hectares of restoration or remediation of natural ecosystems occurring on-site and/or off-site. • Progress or improvement in ecosystem condition, due to restoration or remediation efforts, as assessed by relevant metrics of ecosystem structure or function, including canopy cover or species richness.
<p>Monitoring at the level of the supply area (Section 3.2)</p>	<p><u>Maximum potential deforestation or conversion:</u> Maximum potential deforestation or conversion (ha) in supply shed, jurisdiction, or region that could be attributable to expansion commodity production in a company's supply chain (see section 3.2). Requires monitoring and quantification of:</p> <ul style="list-style-type: none"> • <u>Hectares of deforestation or conversion</u> in area being monitored • <u>Commodity volume</u> sourced from the land area being monitored <ul style="list-style-type: none"> ○ <u>Certified production share:</u> volume and % volume sourced from monitored area that has been certified based on a standard that includes deforestation- or conversion-free criteria <p><u>GHG emissions</u> in metric tons of CO₂-equivalent that may be attributed to land use change (including deforestation, conversion, and draining of peatland or wetlands) in a company's supply chain, carried out by producers in the region, calculated based on observed land use change and volume and extent of company's sourcing in the region.</p>

DRAFT