



**FORESTS
FORWARD**



**HCV
Network**

FOREST INTEGRITY ASSESSMENT TOOL

for HCV and biodiversity management within
FSC's standards and procedures

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1. Overview

The **Forest Integrity Assessment (FIA)** tool, developed by the **High Conservation Value (HCV) Network** and **WWF**, provides a simple, checklist-based approach to assessing forest condition compared to intact forest ecosystems—the forest's 'integrity'. It is designed for use by non-experts and is adaptable across different natural forest types and geographies.

20+ Years of Global Application

Applied[↗] in more than 20 countries by smallholders, plantation managers, communities, and companies to monitor biodiversity in both temperate and tropical ecosystems.

In 2025, a [review](#) commissioned by WWF and the HCV Network, confirmed FIA's growing relevance for responsible forest management and highlighted opportunities for wider uptake within the **Forest Stewardship Council (FSC)** system. The tool is already referenced in FSC guidance and used by certificate holders to support compliance with biodiversity and HCV management requirements.

Summary of FIA's Applications

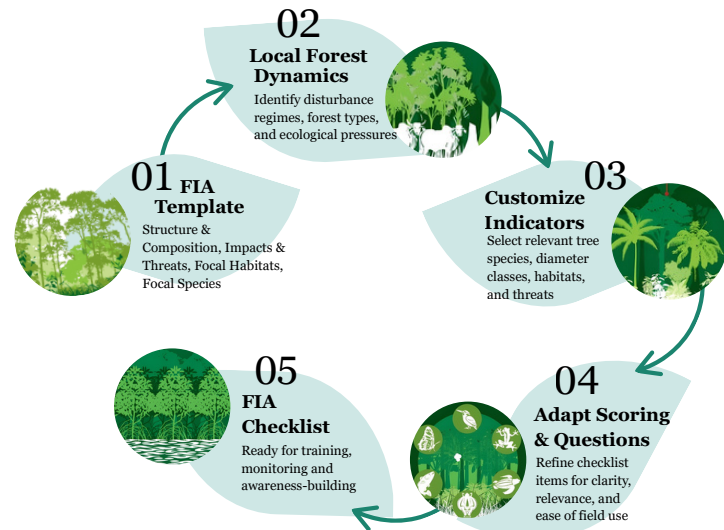
In this brief, we'll summarise how FIA works, its relevance to HCV management, and how it supports many types of forest managers in the following forestry contexts:

- ➔ Small and low intensity managed forest (*SLIMF*);
- ➔ Plantation management;
- ➔ Natural and semi-natural forest management;
- ➔ Ecosystems services under *FSC* Verified Impact; and
- ➔ The *FSC* Remedy Framework.



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2. How FIA works



Approach

FIA is a tool for comparing forest condition in forest stands and remnants, against intact natural or baseline forest ecosystems. 'Relative' forest condition is assessed through the forest's structure, function, and presence of threats, which provides a proxy for biodiversity. This approach does not require species-level and ecosystem surveys. Its low-tech non-technical approach promotes active engagement of **Indigenous Peoples, Local Communities, and Traditional Peoples (IPLCTP)** in monitoring forest biodiversity.



Components

- ➔ **Structure and function checklist** : Non-technical yes/no indicator questions which represent habitat complexity, regenerative capacity and features that promote biodiversity.
- ➔ **Threats and impacts checklist** : Records pressures on forest function and biodiversity.
- ➔ **Optional focal species** : For species of particular conservation concern, included for outreach on important species, but does not directly measure quantitative species diversity or abundance.
- ➔ **Optional focal habitats** : Large habitat features e.g. saltlicks, waterbodies, which are important for wildlife, where managers should apply measures to avoid negative impacts.



Adaptability

The FIA components and procedures can be tailored to local forest types and management contexts. The [global FIA manual](#) provides guidance to adapt these components, while local checklists and procedures can be accessed from the [HCV Network website](#). This localised adaptation makes the *FIA* methodology compatible with *FSC*'s National Forest Stewardship Standards (*NFSS*), Internationally Normative Standards (*INS*) and the Regional Smallholders Standard.

Data are typically collected along multiple transects within forest stands. The averaged *FIA* score indicates the forest's ecological condition; higher scores indicating more intact forests and lower score indicating more degraded forests. This information can then be used to take management decisions, such as setting aside old growth forests from harvesting, restoring degraded forest, or controlling threats (e.g. invasive species, logging pressure).



Repeat surveys (annually or as appropriate to the management cycle) provide a trendline for ecological condition, supporting adaptive management.



The *FIA* does not replace an *HCV* Assessment. However, given the versatile and context-specific nature of how *FIA* can be used, it is a relevant tool for use as part of *HCV* identification and management in specific contexts. Some examples include:



- If forests are assessed as high integrity using *FIA*, this could be used as a proxy for *HCV* species which have a close dependency with ecosystem condition. Research in Sweden has shown that a locally adapted version of *FIA* can predict forests with a high diversity of rare, threatened and endangered species. Where such evidence is available, *FIA* can be a more accessible way to measure *HCV* 1 rather than surveying potentially cryptic species requiring specialised taxonomic skills.
- For smallholders and small enterprise forest managers, the focal species component supports outreach on endangered species.



In Chile, plantation managers were made aware of the Darwin's fox, one of the most threatened species in Chile, and how to reduce threats to their survival.

- The FIA score can be used to identify rare native habitat that must be set-aside as conservation areas. An example of this application is the Naturvärdesbedömning or Nature Value Assessments – an early iteration of FIA – which has been used for the last 20 years as a self-assessment tool by small forest managers and co-operatives in Sweden. Naturvärdesbedömning is primarily used pre-felling to identify native forests important for biodiversity that should be set-aside.

- High baseline measures of a forest's ecological integrity (e.g. in primary or old growth forest) can trigger HCV 3 (rare ecosystem and habitat) status.
- Monitoring with FIA can inform if a forest landscape's integrity is being maintained, which is particularly useful to measure outcomes of reduced impact logging practices at the landscape scale (such as in Intact Forest Landscapes).



HCV 4, 5 and 6 – Local ecosystem services, community dependencies and cultural values

- If a FIA checklist has been purposely adapted to integrate ecosystem services, basic needs such as non-timber forest production, and cultural values, it can be part of other survey techniques and processes like participatory mapping, when identifying and setting baselines for these HCVs.
- This is still a novel adaptation within the *FIA* methodology, and requires further exploration, but shows promise to assist and engage local communities in monitoring environmental services and social values.

4. Applications in FSC contexts



Small and Low Intensity Managed Forest (SLIMF)

SLIMF is an *FSC* classification for smallholders, communities, and companies managing smaller or less intensely harvested forests to qualify for a simplified, lower-cost *FSC* forest management certification process. FIA supports these types of forest managers as it can be used either individually or in a participatory manner. Forest managers—including *SLIMF* Group Managers—can use collected baseline and monitoring data on forest structure and dynamics to promote biodiversity, resilience, and regeneration. This helps maintain and enhance forest quality and integrity, such as by creating microhabitats or mitigating harmful practices. In small plantation FMUs, the tool can be used to monitor surrounding forests with native vegetation, and focal species within the plantations themselves. In low intensity managed forests, it helps track areas where timber and **Non-Timber Forest Products (NTFPs)** are harvested.

FIA is especially well-suited to *SLIMFs*, where monitoring resources and capacity are often limited. Despite its simplicity, it offers a consistent and effective means of assessing forest conditions, as evidenced by [research](#) that tested this assumption.

Plantation management

The use of FIA in plantation settings applies mostly in areas with remaining native vegetation, such as forest remnants, swamps, riparian areas, and steep slopes that have been set aside. In those areas, the use of FIA to monitor ecological conditions can inform adaptive management in conservation set-asides at the individual and aggregated landscape-level. Beyond conservation set-asides, FIA may also be used in plantations with longer harvesting cycles and of different ages, such as in Douglas Fir forests, measuring the development of forest integrity and biodiversity between stands over the forest harvest cycle.

Harvesting generally reduces biodiversity in a stand, while the timescales for biodiversity recovery is determined by several factors, such as the nature of harvesting, forest type, and harvesting cycle length. FIA can measure integrity and biodiversity values across numerous stands, and so inform both current management measures and future harvesting planning, to ensure a proactive maintenance and enhancement of HCVs within the forest as a whole. Forest managers, landowners, and *IPLCTP* living in or near the managed forest area can actively participate in monitoring and data collection using FIA to help track changes and achieve this.

Natural and semi-natural forest management

Across natural forest operations, periodic biodiversity surveys are more commonly used to monitor HCVs, in particular HCV 1 and HCV 3. These surveys are normally conducted by trained professionals following established biodiversity survey methodologies.

FIA was designed as a participatory, citizen science-based approach, specifically for natural forest management to monitor ecological HCVs. The emphasis in its development was on scalability and resource efficiency, in order to help address challenges posed by the size and scale of managed natural forests. Conventional, research-focused monitoring approaches can provide more granular data but there are trade-offs.

They may not be scalable, are usually resource intensive, and have a high barrier for entry - typically requiring expert consultants with academic backgrounds to deliver and analyse.

While *FIA* alone is not a substitute for essential thematic systems (such as species monitoring, stock inventory, water and erosion monitoring, patrolling etc.), forest managers should consider *FIA* as a fundamental tool for developing effective HCV monitoring systems for their forest areas. It is particularly valuable for low-cost regular monitoring of HCVs and for assessing logged-over areas to determine regeneration and whether further interventions are needed. Deploying *FIA* in this way still requires building capacity and allocating resources within operations, but is within reach of non-experts and more modest budgets.

FIA can also be a valuable tool to engage *IPLCTP* and encourage their participation in responsible forest management – including sustainable use of forest resources – whilst enabling them to monitor their own surroundings, build capacity, and raise awareness of the importance of maintaining forest quality. *FIA* data collected and independently verified by *IPLCTP* can serve as the basis for maintaining community access to natural resources, informing forest managers where adaptive management is needed and enabling performance-based benefits for undertaking effective forest management.

The case of Intact Forest Landscapes (IFLs)

Forest integrity in *FIA* is assessed through indicators such as structure, composition and the absence or reduction of threats. Monitoring of IFLs globally relies largely on remote sensing technology, however this generates binary data on IFL extent. *FIA* can provide complementary below-the-canopy data on forest condition in specific areas of the IFL, to inform forest management measures.

Given the large spatial scales that *IFLs* can cover in concessions, a tailored procedure would define the sampling intensity and monitoring frequency needed to generate sufficiently granular data on status and trends. Opportunities to integrate *FIA* data collection into other field work e.g. forest inventory cycles, foot patrols, or community-led monitoring, could also be considered to generate cost-efficiencies.



Aerial View of the Nam Phoun River, One of the Mekong River's. © WWF-Laos

FSC Verified Impact

Demonstrating net-positive impacts on *HCVs* can be one of many possible expected outcomes in *FSC* Verified Impact, yet defining outcome indicators and producing the relevant data to measure positive outcomes can be challenging. Consistency and replicability are considered essential if Verified Impact claims are to be credible.

FIA is designed for replicability and consistency. It is also designed for scalability – not only in terms of extent or area size, but also in terms of time. This means that monitoring or measurement can be conducted more frequently over a much larger area. *FIA* scores inform whether forest conditions have improved or highlight degradation, requiring action. Alongside other essential metrics and their indicators, they inform forest managers if they are on the right track and could help to substantiate net-positive impacts to *HCVs*. More details on where *FIA* is a relevant methodology is available in the *FSC* Ecosystems Services [Guidance](#)

5. Priorities for scaling the use of *FIA*

The *FIA* tool offers a practical, scalable and accessible method to support the integration of *HCV* and biodiversity monitoring across *FSC*'s standards and procedures. *HCVN* is working with its members and users of the *FIA*, along with WWF, to improve the tool's accessibility and usability.

To strengthen *FIA*'s role in *FSC*-certified forest management, current priorities include:

- ➔ Developing a mobile app for easier field use and reporting by forest managers and communities.
- ➔ Expanding adapted guidelines to other geographies and non-forested ecosystems.
- ➔ Creating centralised resources and case studies for managers, to make it easier to learn from others and share knowledge.
- ➔ Extending applications to ecosystem services and cultural values.



6.Resources and Action for Forest Managers

GLOSSARY

FIA	Forest Integrity Assessment
FSC	Forest Stewardship Council
HCV	High Conservation Value
INS	Indigenous Peoples and local communities
IPLCTP	Indigenous Peoples, Local Communities, and Traditional Peoples
NFSS	Stewardship Standard
RFSS	Regional Forest Stewardship Standard for Smallholders
SLIMF	Small and low intensity managed forest
WWF	World Wide Fund for Nature

Forest managers are encouraged to:

- Check if FIA procedures and local expertise exist for their region and forest type via the HCV Network [website](#);
- Integrate FIA into their biodiversity and HCV monitoring frameworks;
- Use FIA results to guide adaptive management, restoration, and conservation measures; and
- Share experiences on using FIA through the HCV Network, and contribute to building local knowledge and capacity on FIA to better integrate biodiversity and HCV management into sustainable forestry.

Reach out to [The HCVN Secretariat](#), who can support regional FIA adaptation or training and help connect you with local partners.



Participatory adaptation and practical training with Forest managers in Cameroon. The Forest Integrity Assessment tool is making forest monitoring more accessible for forest communities. © WWF-Cameroon