# 3 Overview of forest policies

*This chapter provides an overview of the types of forest policy instruments, and mitigation practices and technologies, to which this methodology can be applied. The forestry and agriculture sectors present a large opportunity for countries to meet their commitments to the Paris Agreement, and to reduce GHG emissions from the atmosphere and enhance carbon stocks. This methodology is primarily designed to assess specific policy instruments and associated mitigation practices and/or technologies in the forestry sector. In this document, policies are instruments that enable or incentivize the implementation of GHG mitigation measures. Measures are the practices and technologies that reduce emissions.*

## 3.1 Forest policy instruments

This methodology can be used to assess the GHG impacts of a range of policy instruments that enable or incentivize reducing or removing emissions in the forestry sector. Table 3.1 presents examples of common policy instruments to which this methodology can be applied. This list is not exhaustive, and some users may have policy instruments of other types. Further information about types of policies and actions is provided in the *Introduction to the ICAT Assessment Guides*.

TABLE **3.1**

**Common policy instruments applicable to the forestry sector**

| Type of policy or action | Description | Examples |
|---|---|---|
| Regulations and standards | Rules or standards that specify abatement technologies (technology regulation or standard), or increasing the minimum diameter limit of cutting thresholds or other management activities (performance regulation or standard). They typically include legal penalties for non-compliance. | • Standards for timber management practices<br>• Standards for implementing agroforestry or silvopastoral systems<br>• Conservation mandate requiring landowners to reforest an area equivalent to 10% of cultivated lands into conservation reserve<br>• Laws that promote connectivity between natural ecosystems<br>• Moratorium on new land concessions<br>• Moratorium on exporting forest risk commodities from deforestation risk regions (e.g. Brazil municipality black list)<br>• New systems to effectively enforce existing or new environmental regulation (e.g. improve coordination of observation, enforcement and prosecution agencies against illegal logging and land grabbing) |
| Subsidies and incentives | Direct payments, tax reductions, price supports or the equivalent provided by a government to an entity for implementing a practice or performing a specified action | • Payments for setting aside agricultural land<br>• Payments for ecosystem services |

TABLE **3.1,** continued

**Common policy instruments applicable to the forestry sector**

| Type of policy or action | Description | Examples |
|---|---|---|
| Voluntary agreements or actions | Agreements, commitments or actions undertaken voluntarily by public or private sector actors, either unilaterally or jointly in a negotiated agreement. Some voluntary agreements include rewards or penalties associated with participating in the agreement or achieving the commitments. | • Zero net-deforestation commitments<br>• Ecosystem restoration commitments (e.g. Bonn Challenge)<br>• Agroforestry agreements with landowners<br>• National programmes to reduce emissions in a sector (e.g. NAMA)<br>• Low-carbon development projects |
| Information instruments | Requirements for public disclosure of information. These include labelling programmes, emissions reporting programmes, rating and certification systems, benchmarking, and information or education campaigns aimed at changing behaviour by increasing awareness. | • Programmes requiring standardized labelling on environmental attributes of agricultural and forest products |
| Trading programmes | Programmes that establish a limit on aggregate emissions or pollutants from specified sources; require sources to hold permits, allowances or other units equal to their actual emissions or pollution; and allow permits to be traded among sources | • Nutrient trading programmes<br>• Cap-and-trade programmes |
| Research, development and deployment policies | Policies aimed at supporting technological advances, through direct government funding or investment, or facilitation of investment, in technology research, development, demonstration and deployment activities | • Efforts to strengthen formal education of land managers, provide training, and introduce technologies or practices provided by extension services or other programmes supported by the government to encourage improved practices, technology adoption and even monitoring of activities<br>• Training modules about sustainable production and climate change disseminated through extension agents<br>• Regional workshops for land managers |
| Financing and investment | Public or private sector grants or loans (e.g. those supporting low-carbon development strategies or policies) | • Low–interest rate loans for forest land managers who implement sustainable timber management practices |

## 3.2 Mitigation practices or technologies

This methodology can be used to assess a range of mitigation practices or technologies that reduce emissions and/or enhance removals in the forestry sector. Box 3.1 lists common mitigation practices through A/R, SFM and reduced deforestation/degradation, and to which this methodology is applicable. These mitigation practices are enabled or incentivized by the policy instruments described above.

BOX **3.1**

### Common mitigation practices in the forestry sector

**Common mitigation practices that reduce emissions or enhance removals through A/R**

- Planting trees/woody biomass (including agroforestry and silvopasture)
- Removing vegetation that competes with trees
- Making sites suitable for natural regeneration (e.g. protecting mother trees and seedlings)
- Removing ongoing disturbances that prevent reforestation or natural regeneration

**Common mitigation practices that reduce emissions or enhance removals through SFM**

- Improving forest management practices (e.g. increasing the minimum age or the minimum diameter of cutting thresholds, extending the re-entry period for selective harvesting, improving the selection of trees for harvesting, implementing sustainable harvest modelling, implementing stocking retention requirements)
- Enhancing productivity (e.g. supplemental planting and thinning, introducing tree species with higher growing rates)
- Improving harvest efficiency (e.g. reducing damage or felling of other trees, reducing the size of logging roads)
- Improving mill efficiency and utilization of wood products

**Common mitigation practices that reduce emissions through reduced deforestation/degradation**

- Conserving forests on public or private land
- Providing alternative sources for fuelwood (e.g. woodlots for fuel, gas or kerosene for cooking)
- Converting logged forests to protected forests
- Increasing sustainable agricultural intensification to reduce conversion of forest lands

# 4 Using the methodology

*This chapter provides an overview of the steps involved in assessing the GHG impacts of forest policies, and outlines assessment principles to help guide the assessment.*

**Checklist of key recommendations**

- Base the assessment on the principles of relevance, completeness, consistency, transparency and accuracy

## 4.1 Overview of steps

This document is organized according to the steps a user follows in assessing the GHG impacts of a policy (see Figure 1.1). Depending on when the methodology is applied and the approach chosen, users can skip certain chapters. For example, users assessing impacts ex-ante but not ex-post can skip Chapter 9.

## 4.2 Planning for the assessment

Users should review this methodology, and plan the steps, responsibilities and resources needed to meet their objectives for assessing GHG impacts of forest policies in advance. The time and human resources required to implement the methodology and carry out an impact assessment depend on a variety of factors, such as the complexity of the policy being assessed, the extent of data collection needed and whether relevant data have already been collected, and the desired level of accuracy and completeness needed to meet the objectives of the assessment.

### 4.2.1 Choosing a desired level of accuracy based on objectives

A range of options exist for assessing GHG impacts that allow users to manage trade-offs between the accuracy of the results, and the resources, time and data needed to complete the assessment, based on objectives. Some objectives require more detailed assessments that yield more accurate results (to demonstrate that a specific reduction in GHG emissions is attributable to a specific policy, with a higher level of certainty), whereas other objectives may be achieved with simplified assessments that yield less accurate results (to show that a policy contributes to reducing GHG impacts, but with less certainty around the magnitude of the impact).

Users should choose approaches and methods that are sufficient to accurately meet the stated objectives of the assessment and ensure that the resulting claims are appropriate – for example, whether a policy contributes to achieving GHG emissions reductions or whether emissions reductions can be attributed to the policy. Users should also consider the resources required to obtain the data needed to meet the stated objectives of the assessment.

### 4.2.2 Approaches for assessing the GHG impacts of forest policies

This methodology provides two approaches for estimating the GHG impacts of forest policies ex-ante:

- **Emissions approach.** This compares GHG emissions and removals between the policy scenario and the baseline scenario. The difference between policy and baseline scenario emissions and removals is the GHG impact resulting from the policy.
- **Activity data approach.** This focuses on estimating the effect of the policy on activity data by estimating the expected increase or decrease in the area of land in a land category, or the extent of adoption of a mitigation practice that is triggered by the policy. The emissions associated with the increase or decrease in activity data are estimated to give the expected GHG impact resulting from the policy.

**Emissions approach**

In this method, users determine the most likely baseline scenario for land use, land-use change and/or timber management practices, and estimate baseline emissions and removals (Chapter 7). Users

then develop the most likely policy scenario by determining the likely implementation potential of the policy (Sections 8.2–8.5). Policy scenario emissions and removals are quantified by using the same method that was used to estimate the baseline emissions and removals, with parameter values that are adjusted for the policy scenario. The net change in GHG emissions and removals is the difference between policy and baseline emissions and removals.

### Activity data approach

In this approach, users estimate the maximum implementation potential of the policy (following the approach in Chapter 8), based on the causal chain that is developed in Chapter 6. The maximum implementation potential is estimated in terms of activity data. "Activity data" are parameters that are expected to change in value as a result of the policy. This approach is best for policies that target changes in activity data (e.g. hectares [ha] of forest land remaining as forest land).

Users then evaluate how barriers to implementation and other factors may limit the policy's overall effectiveness, and determine the policy's likely implementation potential. The likely implementation potential represents the effects that are expected to occur as a result of the policy (the most likely policy scenario). The implementation potential is the area of land in a land category that will be impacted by the policy (e.g. the hectares of degraded land that are planted with trees) or the expected extent of adoption of a mitigation practice (e.g. the percentage of timber land managers who increase the diameter cutting threshold). Implicitly, these effects are relative to the baseline scenario.

GHG emissions and removals are estimated based on the increase or decrease in activity data (Section 8.6), with emission factors that are updated to represent the policy scenario. Estimating baseline emissions is optional when using this approach; the GHG impacts of the policy can be calculated directly, without explicitly determining separate baseline and policy scenarios. In such cases, users can skip Chapter 7.

Table 4.1 sets out the advantages and disadvantages of the two approaches, and Box 4.1 provides further information on deciding between them.

TABLE **4.1**

**Advantages and disadvantages of different approaches**

| Approach | Advantage | Disadvantage |
|---|---|---|
| Emissions | • Enables more robust and accurate understanding of the GHG impacts of forestry policies<br>• Meets a wider set of objectives (related to understanding policy impact)<br>• Meets the widest set of stakeholder needs | • Increased time, cost, data and capacity needs, depending on approach taken (simpler to more complex) |
| Activity data | • Gives an understanding of expected GHG impacts<br>• Easier; simpler; and requires less time, resources and capacity | • Provides a more informative estimate of the GHG impacts of the policy, which may limit the range of reporting objectives the assessment can meet<br>• Risk of oversimplification or limited understanding of relevant impact drivers |

BOX **4.1**

### Choosing an approach based on objectives

The approach to follow should be guided by the user's objectives, capacity and resources. If the objective is to understand the impact of a policy and use that information to meet other objectives – such as informing policy design, improving policy implementation, evaluating policy effectiveness, reporting on policy impacts, and attracting finance based on policy impacts – the user should use a more robust approach for assessing impacts, and obtaining and estimating data.

Some objectives may be achieved with an activity data approach, such as gaining an understanding of impacts in a short time to guide decision-making. Other objectives may require a more rigorous emissions approach, such as attracting public or private financing to implement an intervention and achieve specific results. The emissions approach to assessing GHG impacts better supports several objectives, but generally requires more time and resources, whereas the activity data approach is less resource-intensive but may not fully meet all of a user's objectives. In general, users should quantify significant impacts of the policy, where feasible.

## 4.2.3 Methods for obtaining or estimating data

This methodology provides simplified (Tier 1) methods for estimating spatial data and carbon stock change (e.g. emission factors). It does not provide more robust measurement, modelling or estimation methods (e.g. higher Tier 3 methods). The use of tiers and approaches is consistent with the IPCC 2006 GL. It is helpful to become familiar with basic best practices and tables in the IPCC 2006 GL.[8]

Users may decide on their method of assessment based on both their assessment objectives and their capacity, resources and time available to carry out the assessment (Figure 4.1). For planning purposes, it is helpful for users to identify the desired estimation method before beginning an impact assessment. Users may rely on a combination of methods within a policy estimation. For example, if a policy affects multiple carbon pools, each carbon pool estimate could use a different methodological tier. Similarly, data availability may vary across policy locations, requiring the use of different approaches. Users using a combination of methods and approaches should heed the consistency and comparability assessment principles described in the next section.

## 4.2.4 Expert judgment

It is likely that expert judgment and assumptions will be needed to complete an assessment where information is not available or requires interpretation. Expert judgment is defined by the IPCC as a "carefully considered, well-documented qualitative or quantitative judgment made in the absence of unequivocal observational evidence by a person or persons who have a demonstrable expertise in the given field".[9] The goal is to be as representative as possible to reduce bias and increase accuracy. Users can apply their own expert judgment or consult experts.

When relying on expert judgment, information can be obtained through methods that help to avoid bias – known as "expert elicitation". The IPCC 2006 GL provides a procedure for expert elicitation, including a process for helping experts understand the elicitation process, avoiding biases, and producing independent and reliable judgments.

Expert judgment can be associated with a high level of uncertainty. As such, experts can be consulted to provide a range of possible values and the related uncertainty range, or to help select suitable values from a range of values. Expert judgment can be informed or supported by broader consultations with stakeholders.

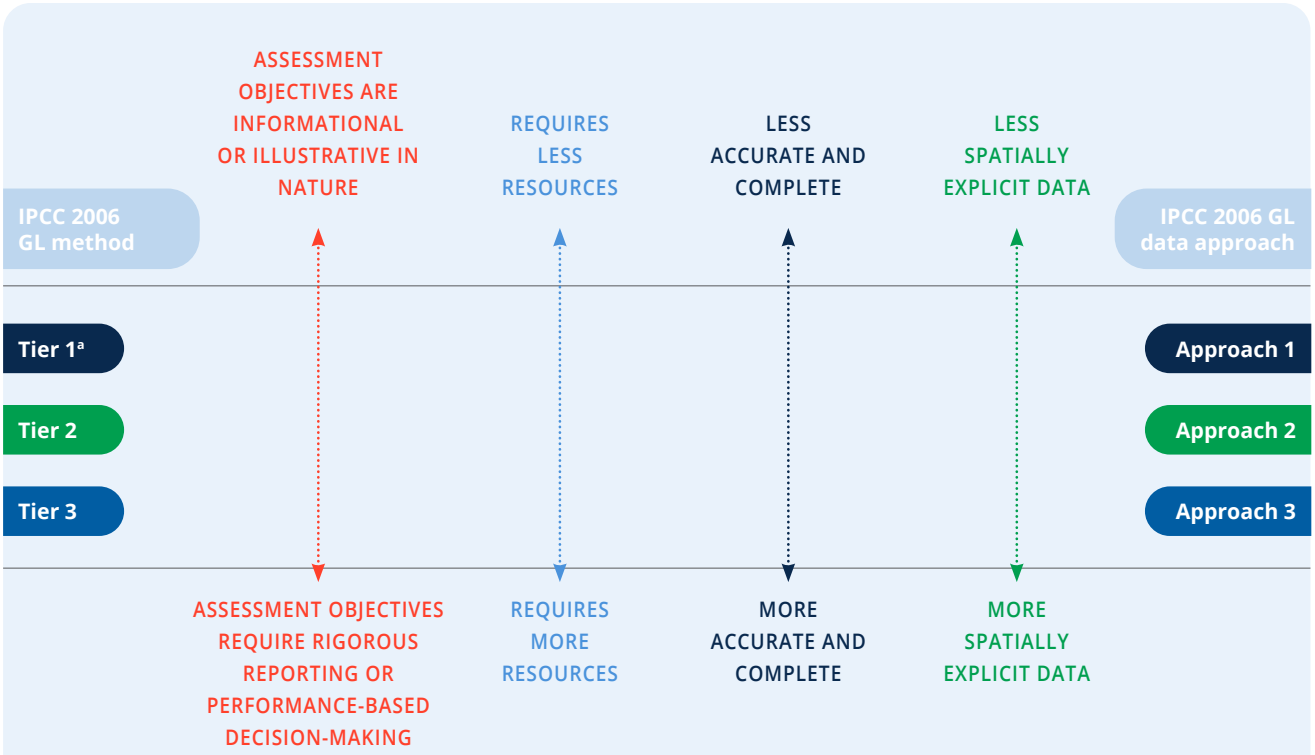
It is important to document the reason that no data sources are available and the rationale for the value chosen.

[8] For information on tiers, see IPCC 2006 GL, Chapter 1, Section 1.3.2, Box 1.1, and Figures 1.2 and 1.3 (www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_01_Ch1_Introduction.pdf). For information on approaches, see IPCC 2006 GL, Chapter 3, Section 3.3.1 and Figure 3.1 (www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_03_Ch3_Representation.pdf).

[9] IPCC (2000).

FIGURE **4.1**

**Methods and approaches for estimating GHG emissions based on data availability**




[a] It is not appropriate to use a Tier 1 method for a stock-difference calculation.

### 4.2.5 Planning stakeholder participation

Stakeholder participation is recommended at many steps throughout the methodology. It can strengthen the impact assessment and the contribution of policies to GHG mitigation goals in many ways, including by:

- establishing a mechanism through which people who may be affected by, or can influence, a policy have an opportunity to raise issues and have these issues considered before, during and after policy implementation
- raising awareness and enabling better understanding of complex issues for all parties involved, building their capacity to contribute effectively
- building trust, collaboration, shared ownership and support for policies among stakeholder groups, leading to less conflict and easier implementation
- addressing stakeholder perceptions of risks and impacts, and helping to develop measures to reduce negative impacts and increase benefits for all stakeholder groups, including the most vulnerable
- increasing the credibility, accuracy and comprehensiveness of the assessment by drawing on diverse expert, local and traditional knowledge and practices – for example, to provide inputs on data sources, methods and assumptions
- increasing transparency, accountability, legitimacy and respect for stakeholders' rights
- enabling enhanced ambition and financing by strengthening the effectiveness of policies and credibility of reporting.

Various sections throughout this methodology explain where stakeholder participation is recommended – for example, in identifying the impacts of the policy (Chapter 6), estimating the

baseline scenario and emissions (Chapter 7), estimating GHG impacts ex-ante (Chapter 8), monitoring performance over time (Chapter 10) and reporting (Chapter 11).

Before beginning the assessment process, users should consider how stakeholder participation can support the objectives, and include relevant activities and associated resources in assessment plans. It may be helpful to combine stakeholder participation for GHG impacts assessment with other participatory processes involving similar stakeholders for the same or related policies, such as those being conducted for assessment of sustainable development and transformational impacts, and for technical review.

It is important to conform with national legal requirements and norms for stakeholder participation in public policies. Requirements of specific donors, and of international treaties, conventions and other instruments to which the country is party should also be met. These are likely to include requirements for disclosure, impact assessments and consultations. They may include specific requirements for certain stakeholder groups (e.g. United Nations Declaration on the Rights of Indigenous Peoples, International Labour Organization Convention 169) or specific types of policies (e.g. United Nations Framework Convention on Climate Change [UNFCCC] guidance on safeguards for activities that reduce emissions from deforestation and degradation in developing countries).

During the planning phase, it is recommended that users identify stakeholder groups that may be affected by, or may influence, the policy. Appropriate approaches should be identified to engage with stakeholder groups, including through their legitimate representatives. Effective stakeholder participation could be facilitated by establishing a multi-stakeholder working group or advisory body consisting of stakeholders and experts with relevant and diverse knowledge and experience. Such a group may provide advice and potentially contribute to decision-making; this will ensure that stakeholder interests are reflected in design, implementation and assessment of policies, including on stakeholder participation in the assessment of GHG impacts of a particular policy. It is also important to ensure that stakeholders have access to a grievance redress mechanism to protect their rights related to the impacts of the policy.

Refer to the ICAT *Stakeholder Participation Guide* for more information, such as how to plan effective stakeholder participation (Chapter 4), identify and analyse different stakeholder groups (Chapter 5), establish multi-stakeholder bodies (Chapter 6), provide information (Chapter 7), design and conduct consultations (Chapter 8), and establish grievance redress mechanisms (Chapter 9). Appendix A of this document summarizes the steps in this methodology where stakeholder participation is recommended and provides specific references to relevant guidance in the ICAT *Stakeholder Participation Guide*.

### 4.2.6 Planning technical review (if relevant)

Before beginning the assessment process, user should consider whether the assessment report will be subject to technical review. The technical review process emphasizes learning and continual improvement, and can help users identify areas for improving future impact assessments. Technical review can also provide confidence that the impacts of policies have been estimated and reported according to ICAT key recommendations. Refer to the ICAT *Technical Review Guide* for more information on the technical review process.

## 4.3 Assessment principles

Assessment principles underpin and guide the impact assessment process, especially where the methodology provides flexibility. It is a *key recommendation* to base the assessment on the principles of relevance, completeness, consistency, transparency and accuracy, as follows:[10]

- **Relevance.** Ensure that the assessment appropriately reflects the GHG impacts of the policy and serves the decision-making needs of users and stakeholders – both internal and external to the reporting entity. Applying the principle of relevance depends on the objectives of the assessment, broader policy objectives, national circumstances and stakeholder priorities.

- **Completeness.** Include all significant impacts – both positive and negative – in the GHG assessment boundary. Disclose and justify any specific exclusions.

- **Consistency.** Use consistent assessment approaches, data-collection methods and calculation methods to allow meaningful

[10] Adapted from WRI (2014).

performance tracking over time. Document any changes to the data sources, GHG assessment boundary, methods or any other relevant factors in the time series.

- **Transparency.** Provide clear and complete information for stakeholders to assess the credibility and reliability of the results. Disclose and document all relevant methods, data sources, calculations, assumptions and uncertainties. Disclose the processes, procedures and limitations of the assessment in a clear, factual, neutral and understandable manner through an audit trail with clear documentation. The information should be sufficient to enable a party external to the assessment process to derive the same results if provided with the same source data. Chapter 11 provides a list of recommended information to report to ensure transparency.

- **Accuracy.** Ensure that the estimated impacts are systematically neither over nor under actual values, as far as can be judged, and that uncertainties are reduced as far as practicable. Achieve sufficient accuracy to enable users and stakeholders to make appropriate and informed decisions with reasonable confidence about the integrity of the reported information. If accurate data for a given impact category are not currently available, strive to improve accuracy over time as better data become available. Accuracy should be pursued as far as possible, but, once uncertainty can no longer be practically reduced, conservative estimates should be used. Box 4.2 provides guidance on conservativeness.

In addition to the principles above, users should follow the principle of comparability if it is relevant to the assessment objectives – for example, if the objective is to compare multiple policies based on their GHG impacts, or to aggregate the results of multiple impact assessments and compare the collective impacts with national goals (described further in Box 4.3).

- **Comparability.** Ensure common methods, data sources, assumptions and reporting formats, such that the estimated impacts of multiple policies can be compared.

In practice, users may encounter trade-offs between principles when developing an assessment. For example, a user may find that achieving the most complete assessment requires using less accurate data for a portion of the assessment, which could compromise overall accuracy. Users should balance trade-offs between principles depending on their objectives. Over time, as the accuracy and completeness of data increase, the trade-off between these principles will likely diminish.

BOX **4.2**

### Conservativeness

Conservative values and assumptions are more likely to overestimate negative impacts or underestimate positive impacts resulting from a policy. Users should consider conservativeness in addition to accuracy when uncertainty can no longer be practically reduced, when a range of possible values or probabilities exists (e.g. when developing baseline scenarios), or when uncertainty is high.

Whether to use conservative estimates and how conservative to be depends on the objectives and the intended use of the results. For some objectives, accuracy should be prioritized over conservativeness, to obtain unbiased results. The principle of relevance can help guide what approach to use and how conservative to be.

BOX **4.3**

### Applying the principle of comparability when comparing or aggregating results

Users may want to compare the estimated impacts of multiple policies – for example, to determine which policy has the greatest positive impacts. Valid comparisons require that assessments have followed a consistent methodology – for example, regarding the assessment period, the types of impact categories, impacts, and indicators included in the GHG assessment boundary; baseline assumptions; calculation methods; and data sources. Users should exercise caution when comparing the results of multiple assessments, since differences in reported impacts may be a result of differences in methodology rather than real-world differences. To understand whether comparisons are valid, all methods, assumptions and data sources used should be transparently reported. Comparability can be more easily achieved if a single person or organization assesses and compares multiple policies using the same methodology.

Users may also want to aggregate the impacts of multiple policies – for example, to compare the collective impact of several policies in relation to a national goal. Users should likewise exercise caution when aggregating the results if different methods have been used and if there are potential overlaps or interactions between the policies being aggregated. In such a case, the sum would either overestimate or underestimate the impacts resulting from the combination of policies. For example, the combined impact of a local energy efficiency policy and a national energy efficiency policy in the same country will probably be less than the sum of the impacts had they been implemented separately, since they affect the same activities. Chapter 5 provides more information on policy interactions.