

**United States Agency for International Development  
Cooperative Agreement No. EEM-A-00-06-00024-00**



**USAID**  
FROM THE AMERICAN PEOPLE

**Global Climate Change:  
Carbon Reporting Initiative**

**The AFOLU Carbon Calculator**



# AFOLU Carbon Calculator

## THE EFFECTIVENESS GUIDE

Winrock International

December, 2014

This publication was produced for review by the United States Agency for International Development. Prepared by Winrock International under the Cooperative Agreement No. EEM-A-00-06-00024-00.

# AFOLU CARBON CALCULATOR

## THE EFFECTIVENESS GUIDE

### DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

### *Cite report as:*

Winrock International. 2014. AFOLU Carbon Calculator. The Effectiveness Guide. Prepared by Winrock International under the Cooperative Agreement No. EEM-A-00-06-00024-00.

## TABLE OF CONTENTS

<b>List of Figures .....</b>	<b>3</b>
<b>1. Scope .....</b>	<b>4</b>
<b>2. Applicability .....</b>	<b>4</b>
<b>3. General Approach of the Effectiveness Tool .....</b>	<b>4</b>
<b>4. Tool Specific Applications of The Effectiveness Guide .....</b>	<b>7</b>
<b>4.1. Forest Protection Tool: .....</b>	<b>7</b>
Sub-activity: avoiding deforestation / avoiding illegal logging .....	8
Sub-activity: avoided fire .....	8
<b>4.2. Forest Management Tool:.....</b>	<b>9</b>
Sub-activity: stop logging.....	9
Sub-activity: reduced impact logging.....	10
Sub-activity: extended rotation logging.....	10
<b>4.3. Afforestation/Reforestation and Agroforestry Tools: .....</b>	<b>11</b>
<b>4.4. Cropland Management and Grazing management Tool: .....</b>	<b>11</b>
<b>5. Appendix 1 – Full list of Effectiveness Tool Questions, Logic, and Deductions .....</b>	<b>12</b>
<b>Forest Protection Questions: .....</b>	<b>12</b>
Avoided Deforestation/ Avoided Illegal Logging Questions: .....	12
Avoided Fire Questions: .....	17
<b>Forest Management Questions:.....</b>	<b>20</b>
Uneven-Aged Forest Management Questions: .....	20
Even-Aged Forest Management Questions: .....	27
<b>Afforestation / Reforestation and Agroforestry Questions:.....</b>	<b>32</b>

## LIST OF FIGURES

Figure 1: Initial effectiveness profiles for two example projects.....	5
Figure 2: Maximum effectiveness profiles for two example projects.....	6
Figure 3: Final effectiveness profiles for two example projects.....	7

## 1. SCOPE

This document describes the Effectiveness Guide which is built into the AFOLU Carbon Calculator<sup>1</sup>'s Tools. The Effectiveness Guide generates an effectiveness rating for project activities, which is an estimated measure the overall success a project activity has had in achieving emissions reductions. For example, for an avoided deforestation project to be considered 100% effective, it would successfully prevent 100% of projected baseline deforestation in the project area, thus avoiding 100% of potential emissions caused by deforestation. However, few projects are likely to achieve 100% success.

There are two main factors that ultimately determine the degree of success that a project activity will have in any given year:

1. The extent to which project activities have been rolled out to their full planned capacity, and
2. The extent to which the project has been designed and implemented relative to the key success factors for that project activity type. Success factors are discussed in more detail in sections below.

The Effectiveness Guide allows users to account for these aspects of project activities and determine the project activity's effectiveness for the given reporting year, as well as for each year the Tools project emissions reductions/removals into the future.

There is an Effectiveness Guide built into the Forest Management, Afforestation/Reforestation and Agroforestry Tools. There are no effectiveness tools for the Cropland Management or Grazing Management Tools as these land use activities are typically either implemented or not implemented, with no scale of success in terms of implementation.

## 2. APPLICABILITY

The Effectiveness Guides are applicable to most project activities that can be accounted for with the Forest Management, Afforestation/Reforestation and Agroforestry Tools. However, if a user finds that the questions or results are not applicable to the project activity, there is an option to override the effectiveness rating and enter his/her own estimate.

## 3. GENERAL APPROACH OF THE EFFECTIVENESS TOOL

The Effectiveness Guide was built on the premise that any project will have an effectiveness profile that increases over time. The approach attempts to identify this profile and place a project activities on it by asking questions that a user can answer quickly with a modest understanding how the project activity has been implemented.

The Effectiveness Guide has two main steps that are explained in more detail below.

---

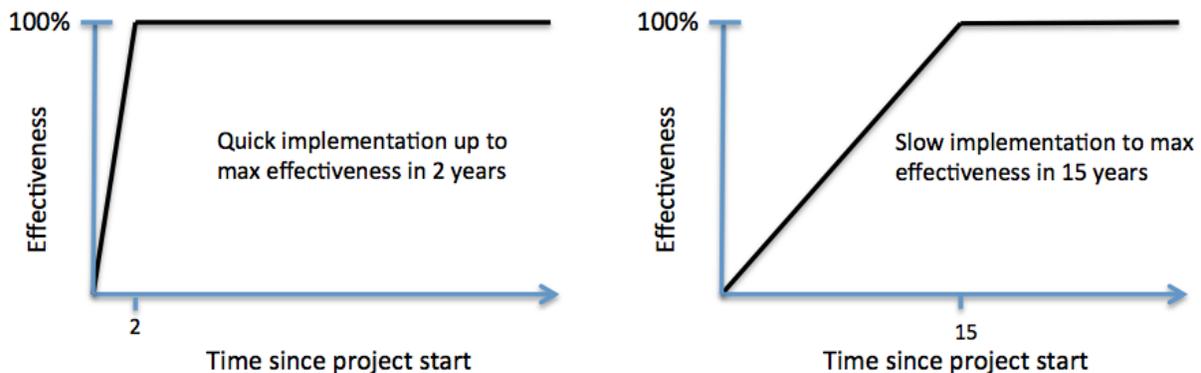
<sup>1</sup> [www.afolucarbon.org](http://www.afolucarbon.org)

- Step 1 – Determine the period of time needed to achieve full effectiveness and determine where the project currently stands in relation to this period.
- Step 2 – Determine the likely maximum effectiveness based on the project design.

## STEP 1 – DETERMINE THE PERIOD OF TIME NEEDED TO ACHIEVE FULL EFFECTIVENESS AND DETERMINE WHERE THE PROJECT CURRENTLY STANDS IN RELATION TO THIS PERIOD

All projects require a period of time to reach full effectiveness in terms of achieving all objectives. For example, a project that supports alternative livelihoods to reduce pressure on forests that drives deforestation will not be fully effective in preventing deforestation until all stakeholders driving deforestation have been engaged and fully assume alternative livelihoods.

Within the Effectiveness Guide, users are first asked how many years they think the project will need to reach full effectiveness, and then how many years they are into that process. The Effectiveness Guide begins assuming that all projects can be 100% effective, so after answering this first question, an initial effectiveness profile is generated<sup>2</sup>. Two examples of such profiles are shown below, depicting the discrepancy in effectiveness between projects that take a short and long time to reach full effectiveness. The curves are relative to the time since the start of the project.



**Figure 1: Initial effectiveness profiles for two example projects.**

The user is then asked how long it has been since the project activity's initiation. This adjusts the start of the effectiveness profile and generates a maximum effectiveness profile. Using the examples above, and assuming a project had been underway for three years, the effectiveness tool would generate the following effectiveness curves (not visible to the user), relative to the time since the start of the reporting year.

<sup>2</sup> The user will not see these graphs. They are shown here to aid understanding in the methodology that the tool employs.

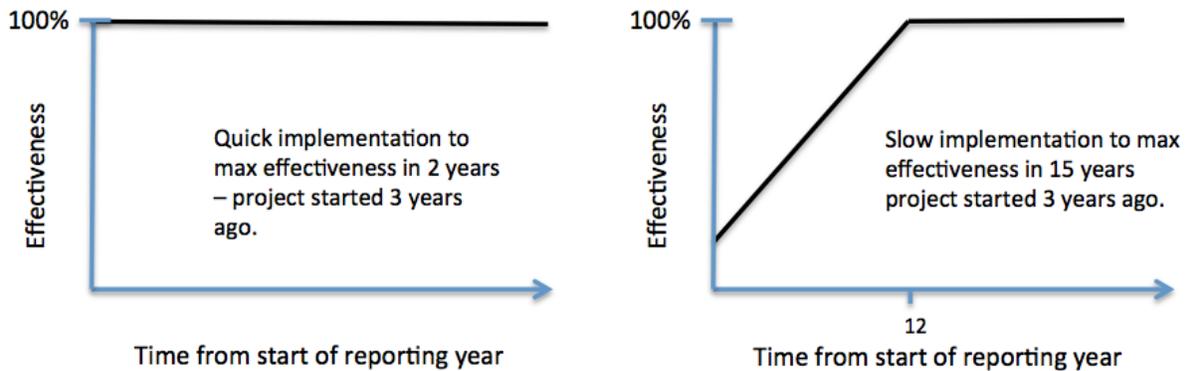


Figure 2: Maximum effectiveness profiles for two example projects.

## STEP 2 – DETERMINE THE LIKELY MAXIMUM EFFECTIVENESS BASED ON THE PROJECT DESIGN

The user is then presented with a series of multiple choice questions pertaining to the project activity design. Questions for determining the maximum effectiveness pertain to how the project is designed, not how it is actually currently functioning on the ground. Effectiveness deductions are then applied according to user answers.

To generate the questions presented in the Effectiveness Guide, characteristics of successful project activities were identified according to previous project management experience and literature (see section 4 below). Questions attempt to determine the extent to which projects have incorporated these key characteristics in their design (see questions in Appendix I) and where the characteristics are not incorporated in project design and implementation, deductions are made to the project's overall effectiveness (see Box I).

Where projects have taken steps to conduct capacity building activities, an effectiveness addition is made. This is to credit the increased likelihood of success that projects have when local capacity is enhanced. Effectiveness deductions and additions are then summed, and the result is the effectiveness deduction percentage for a project activity for the given year relative to its maximum effectiveness (which varies by year according to the period to achieve full effectiveness).

Using the two examples above, and assuming that the outcome of the tool was a 20% effectiveness deduction, each year's maximum effectiveness would be multiplied by 80%, resulting in the following final effectiveness profiles. The effectiveness for any given year is determined by the value in this final effectiveness profile, and is multiplied by the estimated emissions reductions determined by the tool.

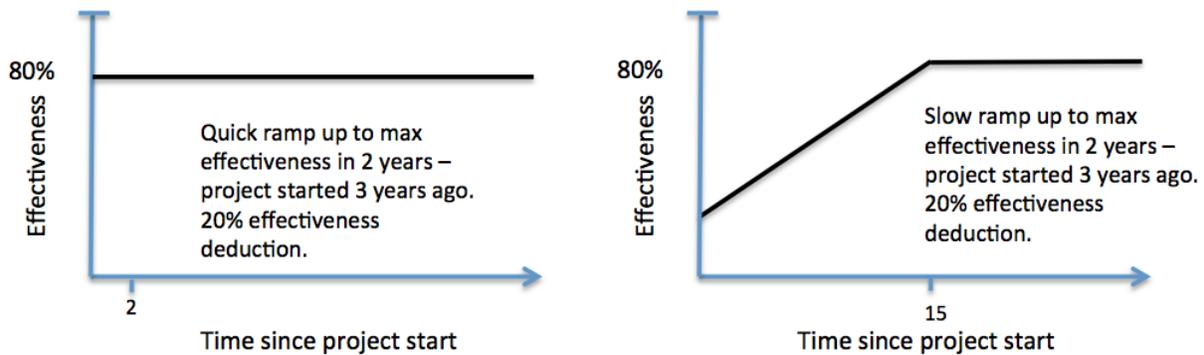


Figure 3: Final effectiveness profiles for two example projects.

### Box 1: Effectiveness deductions

- A deduction of **10** indicates an effectiveness factor is not being fully addressed
- A deduction of **20** indicates an effectiveness factor is only being addressed to a limited extent
- A deduction of **40** indicates a potentially serious deficiency in project design, that could severely limit effectiveness
- A deduction of **60** indicates the project design is unlikely to be successful due to a fundamental success factor not being addressed
- An addition of 10% (or a deduction of **-10**) indicates capacity building or additional activities that are likely to lead to increased long term success, compensating for effectiveness deductions made for other reasons

The maximum effectiveness rating a project can have in any year is 100% and the lowest is zero.

## 4. TOOL SPECIFIC APPLICATIONS OF THE EFFECTIVENESS GUIDE

The specific application of the Effectiveness Guide for each Tool is described in more detail below.

### 4.1. FOREST PROTECTION TOOL:

Forest Protection Tool allows users to select more than one sub-activity: (1) avoided deforestation and/or illegal logging and (2) avoided fire. If a user selects avoided actions of deforestation and/or illegal logging, an Effectiveness Guide will appear for avoided deforestation and illegal logging. If avoided fire is also selected as a sub-activity, an additional Effectiveness Guide specific to fire is presented.

Each of the sub-activities within the Forest Protection Tool are presented below, along with some of the characteristics and actions that highly effective forest protection project activities incorporate. Primary

sources of information used to determine these characteristics are also included at the end of this section.

Note: In the forest protection tool, if a user specifies a deforestation rate in the Advanced Inputs section for forests or mangroves, it is assumed that effectiveness is known and therefore no effectiveness deduction is applied. This is because using the actual ex-post rate means that any ineffectiveness has been captured already. However, if the project also avoids illegal logging, the effectiveness value calculated for illegal logging will still be applied to benefits from avoiding illegal logging.

### **SUB-ACTIVITY: AVOIDING DEFORESTATION / AVOIDING ILLEGAL LOGGING**

#### ***Characteristics of highly effective projects***

- ✓ The drivers have been identified (e.g., commercial crop production, subsistence activities, weak land tenure) and the project is taking steps to address them in a comprehensive manner that will not lead to leakage.
- ✓ The project is able to rapidly detect deforestation/degradation and implement activities to slow or stop it.
- ✓ The project area is suitably protected relative to its accessibility and drivers.
- ✓ The project area is put under long-term protection, either legally binding or a form of community conservation management.
- ✓ The project activities include capacity building of the institutions and stakeholders that are charged with the areas protection.

#### ***Primary sources of data used to develop this list:***

Research conducted by Winrock on USAID Forest Protection projects

AFOLU Non-Permanence Risk Tool: VCS Version 3 (Available from: [www.v-c-s.org/program-documents/find-program-document](http://www.v-c-s.org/program-documents/find-program-document) )

### **SUB-ACTIVITY: AVOIDED FIRE**

#### ***Characteristics of highly effective projects***

- ✓ The project involves institutionalizing fire management in the policies, laws and resource management plans at the country/regional level through capacity building.
- ✓ The appropriate use and management of fire is designed to promote sustainable livelihoods. Communities, concession holders, local organizations and government are engaged in the fire prevention activities through activities such as education, participation in fire prevention work, technical support to implement fire-friendly agricultural practices and appropriate incentive structures.
- ✓ Have a documented, region specific, fire management plan which includes:
  - Fire prevention plans based on local data on fire sources and risk periods
  - A system for rating the fire danger over space and time which provides an early warning system

- Preparedness plans
- Monitoring and assessment of activities
- ✓ There is a robust fire detection system that uses an appropriate combination of remote sensing, land/water based observation, aerial routes and community networks. The detection system is linked to a communications and dispatch system.
- ✓ There are well-equipped local fire brigades that are trained to deal with both initial attack and large scale suppression of fires.
- ✓ Where peat fires are an issue, there are specific activities to control and monitor water levels.

**Primary sources of data used to develop this list:**

FAO. 2006. Fire management: voluntary guidelines. Principles and strategic actions. Fire Management Working Paper 17. Rome (available at: [www.fao.org/forestry/site/35853/en](http://www.fao.org/forestry/site/35853/en) ).

ITTO 1999, ITTO guidelines on fire management in tropical forests (available at: [www.fire.uni-freiburg.de/programmes/itto/itto.htm](http://www.fire.uni-freiburg.de/programmes/itto/itto.htm)

*Peat specifically:*

[www.fire.uni-freiburg.de/GlobalNetworks/PeatlandFireNetwork/Burning\\_no.7.pdf](http://www.fire.uni-freiburg.de/GlobalNetworks/PeatlandFireNetwork/Burning_no.7.pdf)

[www.wri.org/sites/default/files/uploads/wrr\\_case\\_study\\_managing\\_peatland\\_fire\\_risk\\_indonesia.pdf](http://www.wri.org/sites/default/files/uploads/wrr_case_study_managing_peatland_fire_risk_indonesia.pdf)

## 4.2. FOREST MANAGEMENT TOOL:

In the Forest Management Tool, users choose from a set of project activities that impact emissions including: (1) implementing reduced impact logging practices, (2) stopping logging, or (3) extending rotation lengths. Users first choose which type of Forest Management project activity is being undertaken, and the effectiveness rating guide produces questions relevant only to the selected activity.

Each of the sub-activities within the Forest Management Tool are presented below, along with some of the characteristics and actions that highly effective forest management projects incorporate. Primary sources of information used to determine these characteristics are also included at the end of this section.

### **SUB-ACTIVITY: STOP LOGGING**

#### **Characteristics of highly effective projects**

- ✓ The harvest area has been placed under legally binding protection.
- ✓ All the logging agents have been identified and their licenses to log the project area terminated.
- ✓ Communities in and around the protected forest have been provided alternative livelihood options.
- ✓ Capacity building programs are in place for logging communities to enable them to conduct alternative livelihoods.

**SUB-ACTIVITY: REDUCED IMPACT LOGGING*****Characteristics of a highly effective project***

- ✓ The operation has a detailed set of operational and environmental standards, known as 'standard operating procedures', with which the managers and operators are familiar with.
- ✓ The timber management practices employed involve:
  - Pre-harvest inventory and mapping using operational scale contour maps
  - Pre-harvest infrastructure planning including roads, skid trails and landings
  - Use controlled felling and bucking techniques including directional felling where appropriate
  - Standards for road construction
  - Marking of skid trails and opening prior to felling
  - Deactivating skid trails after use
- ✓ A training program is in place for manager, planners and logging crews.
- ✓ Suitably trained supervisors will be present in the field to oversee work, ensure standard operating procedures are followed and that the schedule of activities is adhered to.
- ✓ A management and control system is in place that will provide timely operating information to the project manager, the concession holder, logging manager and external auditors.
- ✓ The operation is pursuing or has achieved a third party sustainability standard.

**SUB-ACTIVITY: EXTENDED ROTATION LOGGING*****Characteristics of highly effective projects***

- ✓ The operation has a detailed management plan that includes:
  - Pest and disease management
  - A planned thinning age and targeted basal area
  - Establishing wind breaks for saplings
  - Mitigates fire risk
- ✓ An assessment has been made to ensure the extended rotation length is a financially viable option for logging agents.
- ✓ A clear methodology for credibility and sustainability is being pursued or is in place through a third party sustainability standard (e.g. Forest Stewardship Council Certification)

***Primary sources of data used to develop this list:***

Tropical Forest Foundation, 2006, Management considerations for successful implementation of reduced impact logging ([www.itto.int/direct/topics/topics\\_pdf\\_download/topics\\_id=1907&no=4](http://www.itto.int/direct/topics/topics_pdf_download/topics_id=1907&no=4) )

Reduced-Impact Logging: Challenges, Opportunities and Strategies in the Emerging Forest Carbon Economy ([www.leafasia.org/library/resources-asia-pacific-workshop-ril-challenges-opportunities-and-strategies-emerging-forest](http://www.leafasia.org/library/resources-asia-pacific-workshop-ril-challenges-opportunities-and-strategies-emerging-forest) )

### 4.3. AFFORESTATION/REFORESTATION AND AGROFORESTRY TOOLS:

The A/R and Agroforestry Tools share the same Effectiveness Tool<sup>3</sup>. Common characteristics of highly effective A/R and agroforestry projects are listed below. The primary sources of information used to determine these characteristics are also included at the end of this section.

#### *Characteristics of highly effective projects*

- ✓ Larger, commercial plantation(s) are managed according to a documented forest management plan which includes consideration of:
- ✓ Smallholders managing small-scale plantations receive ongoing technical assistance/extension.
- ✓ Soil and climate conditions are optimal for the species planted.
- ✓ Pest and disease management plans are implemented
- ✓ Maintenance of plantings to reduce mortality and/or replanting of dead seedlings
- ✓ Irrigation treatment is provided in dry spells if needed
- ✓ Soil testing has been undertaken to ensure that the optimum inputs are applied to the soil.
- ✓ The plantations are managed by appropriately trained personnel.

#### *Primary sources of data used to develop this list:*

Research conducted by Winrock on tree planting projects conducted by USAID and others.

### 4.4. CROPLAND MANAGEMENT AND GRAZING MANAGEMENT TOOL:

The Cropland Management and Grazing Management Tools do not include an effectiveness rating or an associated Effectiveness Tool. This is because in both Tools, users enter the ex-ante and the ex-post results in the calculator, so the effectiveness in implementation is already accounted for (e.g. in the ex-post results). This works for these Tools because the outcomes of a project tend to be binary -- for example, a project either did or did not remove a head of cattle from an area. In contrast, when protecting an area from deforestation or fire, it is likely that a project will reach some degree of success, but it is unlikely that it will completely succeed or completely fail.

---

<sup>3</sup> When using the A/R or agroforestry tool, the assumption is that the parcel area entered is the total area planted in a given year. If the project involves planting over multiple years, each year's plantings should be recorded as a separate activity under one project.

## 5. APPENDIX I – FULL LIST OF EFFECTIVENESS TOOL QUESTIONS, LOGIC, AND DEDUCTIONS

### FOREST PROTECTION QUESTIONS:

Initial question to determine which Effectiveness Guide questions for the Forest Protection Tool are produced:

QA	What activities are within the scope of this project?			
	Answer	Calculation	Logic	Explanation
A	Avoiding deforestation or degradation from illegal logging only	None	Ask questions on avoided deforestation / degradation	NA
B	Avoiding fire only	None	Ask questions on avoiding fire only	NA
C	Avoiding deforestation or degradation from illegal logging AND fire	None	Ask questions on avoiding deforestation/degradation and generate a separate Effectiveness deduction value for that sub-activity, and avoiding fire again creating a separate sub-activity effectiveness deduction.	NA

### AVOIDED DEFORESTATION/ AVOIDED ILLEGAL LOGGING QUESTIONS:

Q1	Is the main driver of deforestation/degradation subsistence activities or commercial commodity production?			
	Answer	Effectiveness deduction	Logic	Explanation
A	Commercial commodity production	0	Go to Q2	NA
B	Subsistence activities	0	Go to Q3	NA

Q2	<b>Will the project maintain or increase supply of that commodity through sustainable intensification that does not require further deforestation/degradation?</b>			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	0	Go to Q3	NA
B	No	40	Go to Q3	A 40% effectiveness deduction was made because commercial commodity production is the main driver of deforestation and an alternative supply has not been provided. It is assumed that 40% of emissions will leak elsewhere through market leakage, even if the project is successful in reducing deforestation at the project site (in line with the Verified Carbon Standard's assumptions).

Q3	<b>Will the project work with local communities that have access to the project area to provide sustainable livelihoods that are not dependent on further deforestation/degradation?</b>			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes, with all	0	Go to Q4	NA
B	Yes, with the majority	10	Go to Q5	A 10% effectiveness deduction was made because not all communities are being provided with sustainable livelihoods that are not dependent on deforestation
C	Yes, with less than half	20	Go to Q5	A 20% effectiveness deduction was made because less than half of communities are being provided with sustainable livelihoods that are not dependent on deforestation or degradation.
D	No	60	Go to Q5	An 60% effectiveness deduction was made because the project is not addressing the driver of

				subsistence agriculture by providing alternative livelihoods that do not rely on deforestation or degradation.
E	Not applicable	0	Go to Q5	

Q4	Will the project help secure land tenure for communities in and around the project area?			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes for all	0	Go to Q5	
B	Yes for the majority	10	Go to Q5	A 10% effectiveness deduction was made because although insecure land tenure is a driver of deforestation/degradation, not all communities are being supported in clarifying it.
C	Yes for a minority	40	Go to Q5	A 40% effectiveness deduction was made because although insecure land tenure is a driver of deforestation/degradation, only a minority of communities are being supported in clarifying it.
D	No	60	Go to Q5	A 60% effectiveness deduction was made because although insecure land tenure is a driver of deforestation/degradation, communities are not being supported in clarifying it.
E	Not applicable	0	Got to Q5	

Q5	Will the project conduct monitoring (remote sensing, patrols, community monitoring etc) to detect and respond to incidents of deforestation/degradation?			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	0	Go to Q6	NA
B	Yes, but infrequently	20	Go to Q6	A 20% effectiveness deduction was made because the project will only have infrequent monitoring and therefore may not be able to detect and respond to deforestation/degradation in a timely manner.
C	Yes, but not comprehensively	20	Go to Q6	A 20% effectiveness deduction was made because the project will not have comprehensive monitoring and therefore may

				not be able to detect and respond to deforestation/degradation occurring in areas not covered by the monitoring.
D	No	60	Go to Q6	A 60% effectiveness deduction was made because the project will not conduct monitoring and therefore it will not be able to detect and respond to deforestation and degradation if it occurs.

<b>Q6</b>	<b>Is the project area easy to access? (e.g. has many access roads / rivers etc.)</b>			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	0	Go to Q7	NA
B	No	0	Go to Q8	NA

<b>Q7</b>	<b>Will the area be well guarded? (e.g. guard stations on lookout posts)</b>			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	20	Go to Q9	A 20% effectiveness deduction was made because the project area will be well guarded but is easily accessible. With many access points there is always a risk that deforestation can occur undetected.
B	No	40	Go to Q9	A 40% effectiveness deduction was made because the project area will not be well guarded and has many access points. This will make controlling deforestation agents difficult.

<b>Q8</b>	<b>Will the area be well guarded? (e.g. guard stations on lookout posts)</b>			
	Answer	Effectiveness deduction	Logic	Explanation

A	Yes	0	Go to Q9	NA
B	No	20	Go to Q9	A 20% effectiveness deduction was made because although the project area is difficult to access, the entry points will not be well guarded.

<b>Q9</b>	<b>Does the project involve putting the project area under long-term legal protection or under a long-term community conservation agreement?</b>			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	-10	Go to Q10	A 10% effectiveness addition was made because the project is putting an area under long-term legal protection or a long-term community conservation agreement. This increases the chances of long-term protection / sustainable use of the project.
B	No	10	Go to Q10	A 10% effectiveness deduction was made because the project is not putting the area under long-term legal protection or a long-term community conservation agreement. This could make enforcement more difficult and leaves the project area vulnerable to policy changes in the future.
C	Not applicable	0	Go to Q10	

<b>Q10</b>	<b>Does the project involve building the capacity of the stakeholders that are/will be responsible for the protection of the area?</b>			
	Answer	Effectiveness deduction	Logic	Explanation

A	Yes	-20	End of Tool	A 20% effectiveness addition was made because the project involves capacity building of the stakeholders responsible for the project area. This increases the chances of sustained success in the future.
B	No	10	End of Tool	A 10% effectiveness deduction was made because the project does not involve capacity building of the stakeholders responsible for the project area. This reduces the chances of sustained success in the future.

**AVOIDED FIRE QUESTIONS:**

Q1	<b>Does the project involve developing fire management in the policies, laws and resource management plans at the country/regional level through capacity building?</b>			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	-10	Go to Q2	A 10% effectiveness addition was made because the project addresses some of the fundamental drivers of fire by building capacity and developing laws, policies and/or natural resource management plans.
B	No	20	Go to Q2	A 20% effectiveness deduction was made because the project does not address some of the fundamental drivers of fire by building capacity and developing laws, policies and/or natural resource management plans.

Q2	<b>Are communities, concession holders, local organizations and governments engaged in the fire prevention activities through education, fire prevention work, technical support to fire-friendly agriculture and other appropriate incentives?</b>			
	Answer	Effectiveness deduction	Logic	Explanation

A	Yes	0	Go to Q3	NA
B	Yes, to some extent	10	Go to Q3	A 10% effectiveness deduction was made because communities, concession holders, local organizations and governments will not be fully engaged in fire prevention activities. Without their full engagement it is not likely fires can be controlled.
C	No	40	Go to Q3	A 40% effectiveness deduction was made because communities, concession holders, local organizations and governments will not be engaged in fire prevention activities. Without their full engagement it is not likely fires can be controlled.

Q3	<b>Will the project use a documented, region specific, fire management plan been developed and implemented for the project area?</b>			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	0	Go to Q4	NA
B	No	40	Go to Q4	A 40% effectiveness deduction was made because a documented, region specific, fire management plan is not being developed and implemented for the project area. Without a plan it is difficult to determine if the appropriate steps to tackle fire have been taken.

Q4	Does the project involve ensuring there are well-equipped local teams trained to suppress fires?			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	0	Go to Q5	
B	Yes, lacking training or equipment	20	Go to Q5	A 20% effectiveness deduction was made because the project does not involve ensuring there are local fire fighting teams who are adequately trained and equipped to deal with fires.
C	No	40	Go to Q5	A 40% effectiveness deduction was made because there will be no local team available to tackle fires.
D	NA	0	Go to Q5	

Q5	Where peat fires are an issue, are there specific activities to control and monitor water levels?			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	0	End of Tool	NA
B	No	40	End of Tool	A 40% effectiveness deduction was made peat fires are an issue in the project area yet water levels are not being monitored and controlled. If the peat is allowed to dry out excessively this leads to large fire risks.
C	NA	0	End of Tool	

**FOREST MANAGEMENT QUESTIONS:**

Initial question to determine which Effectiveness Guide questions for the Forest Management Tool are produced:

QA	Which activity is this project undertaking?			
	Answer	Calculation	Logic	Explanation
A	Selective Logging or Uneven-Aged Forest Management	None	Ask questions on Uneven-Aged Forest Management	NA
B	Clearcutting or Even-Aged Forest Management	None	Ask questions on Even-Aged Forest Management	NA

**UNEVEN-AGED FOREST MANAGEMENT QUESTIONS:**

QB	Which activity is this uneven-aged forest management project undertaking?			
	Answer	Calculation	Logic	Explanation
A	Stop logging	None	Ask questions on stop logging	NA
B	Reduced impact logging	None	Ask questions on RIL	NA

*Uneven-Aged FM Questions: Stop logging:*

Q1	Does the project involve placing the planned harvest area under legally binding protection from logging?			
	Answer	Effectiveness deduction	Logic	Explanation

A	Yes	0	Go to Q2	NA
B	The majority has	10	Go to Q2	A 20% effectiveness deduction was made because not all of the area has been placed under legally binding protection from logging.
C	No, none of the area has	40	Go to Q2	A 40% effectiveness deduction was made because the area has not been placed under legally binding protection from logging. This reduces the enforceability of any strategy and the long term security of the area.

Q2	<b>Does the project involve identifying all logging agents and terminating their licenses/leases to log the project area?</b>			
	Answer	Effectiveness deduction	Logic	Explanation

A	Yes	0	Go to Q3	
B	The majority have	10	Go to Q3	A 10% effectiveness deduction was made because not all logging agents have been identified and have their licenses terminated. Therefore logging will still continue in the project area.
C	A minority have	40	Go to Q3	A 40% effectiveness deduction was made because only a minority of logging agents have been identified and have their licenses terminated. Therefore significant logging will still continue in the project area.
D	No, none	80	Go to Q3	A 80% effectiveness deduction was made because the logging agents have not been identified and have their licenses terminated. Therefore logging will still continue in the project area.

Q3	<b>Will alternative livelihood options not related to logging be provided to communities in and around the project area?</b>			
	Answer	Effectiveness deduction	Logic	Explanation

A	Yes	0	Go to Q4	NA
B	Yes, for the majority	10	Go to Q4	A 10% effectiveness deduction was made because not all communities that rely on logging in the project area are provided with alternative livelihoods.
C	Yes, for a minority	20	Go to Q4	A 20% effectiveness deduction was made because only a minority of communities that rely on logging in the project area are provided with alternative livelihoods.
D	No	60	Go to Q4	A 60% effectiveness deduction was made because no communities that rely on logging in the project area are provided with alternative livelihoods, therefore logging would be expected to continue out of necessity.

Q4	<b>Does the project involve capacity building programs being put in place for key stakeholders in the project area's management and use?</b>			
	Answer	Effectiveness deduction	Logic	Explanation

A	Yes	-10	End of Tool	A 10% effectiveness addition has been made because the project involves putting in places capacity building programs for key stakeholders, therefore improving their ability to manage the area.
B	No	10	End of Tool	A 10% effectiveness deduction has been made because the project involves putting in places capacity building programs for key stakeholders.

*Uneven-Aged FM Questions: Reduced impact logging*

Q1	<b>Has the project developed a set of operational and environmental standards (often known as 'standard operating procedures') implemented by managers and operators?</b>			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	0	Go to Q2	NA
B	No	40	Go to Q2	A 40% effectiveness deduction has been made because the project does not involve managers and operators adhering to a set of operational and environmental standards. Only by defining and following such standards can RIL be achieved.

Q2	<b>Does the project involve following the main principles of reduced impact logging such as pre-harvest planning, considerate infrastructure and felling procedures, and post-harvest deactivation of sites?</b>			
	Answer	Effectiveness deduction	Logic	Explanation

A	Yes	0	Go to Q3	NA
B	No	60	Go to Q3	A 60% effectiveness deduction has been made because the project does not involve following the main principles of RIL.

<b>Q3</b>	<b>Has a RIL training program been in place for managers, planners and logging crews?</b>			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	0	Go to Q4	
B	No	20	Go to Q4	A 20% effectiveness deduction has been made because the project does not involve training managers, planners and logging crews in RIL. Without adequately trained staff RIL practices are not likely to be implemented properly.

<b>Q4</b>	<b>Have trained supervisors been present in the field to oversee work, ensure standard operating procedures are followed and that planned activities are followed?</b>			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	0	Go to Q5	NA
B	No	20	Go to Q5	A 20% effectiveness deduction has been made because the project does not involve having trained supervisors in the field overseeing operations. Without proper supervision RIL practices are not likely to be implemented properly.

Q5	<b>Does the project involve putting in place a management and control system that will provide timely operating information to the project manager, the concession holder, logging manager and external auditors?</b>			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	0	Go to Q6	
B	No	20	Go to Q6	A 20% effectiveness deduction has been made because the project does not involve having a system to report operating information to management. Without such information flows it is difficult for managers to ensure that practices are being conducted.

Q6	<b>Does the project involve pursuing or already achieved a third party sustainability standard?</b>			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	-10	End of Tool	A 10% effectiveness addition has been made because the project attempts to achieve 3 <sup>rd</sup> party standard with independent audits and certification of best practices.
B	No	10	End of Tool	A 10% effectiveness deduction has been made because the project does not involve pursuing a third party sustainability standard. Such standards provide extra assurances that standards are adhered to due to regular audits.

**EVEN-AGED FOREST MANAGEMENT QUESTIONS:**

QC	Which activity is this project undertaking?			
	Answer	Calculation	Logic	Explanation
A	Stop logging	None	Ask questions on stop logging	NA
B	Extended Rotation	None	Ask questions on ER	NA

*Even-Aged FM Questions: Stop logging:*

Q1	Does the project involve placing the planned harvest area under legally binding protection from logging?			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	0	Go to Q2	NA
B	The majority has	10	Go to Q2	A 20% effectiveness deduction was made because not all of the area has been placed under legally binding protection from logging.
C	No, none of the area has	40	Go to Q2	A 40% effectiveness deduction was made because the area has not been placed under legally binding protection from logging. This reduces the enforceability of any strategy and the long term security of the area.

Q2	Does the project involve identifying all logging agents and terminating their licenses/leases to log the project area?			
	Answer	Effectiveness deduction	Logic	Explanation

A	Yes	0	Go to Q3	
B	The majority have	10	Go to Q3	A 10% effectiveness deduction was made because not all logging agents have been identified and have their licenses terminated. Therefore logging will still continue in the project area.
C	A minority have	40	Go to Q3	A 40% effectiveness deduction was made because only a minority of logging agents have been identified and have their licenses terminated. Therefore significant logging will still continue in the project area.
D	No, none	80	Go to Q3	A 80% effectiveness deduction was made because the logging agents have not been identified and have their licenses terminated. Therefore logging will still continue in the project area.

Q3	<b>Will alternative livelihood options not related to logging be provided to communities in and around the project area?</b>			
	Answer	Effectiveness deduction	Logic	Explanation

A	Yes	0	Go to Q4	NA
B	Yes, for the majority	10	Go to Q4	A 10% effectiveness deduction was made because not all communities that rely on logging in the project area are provided with alternative livelihoods.
C	Yes, for a minority	20	Go to Q4	A 20% effectiveness deduction was made because only a minority of communities that rely on logging in the project area are provided with alternative livelihoods.
D	No	60	Go to Q4	A 60% effectiveness deduction was made because no communities that rely on logging in the project area are provided with alternative livelihoods, therefore logging would be expected to continue out of necessity.

Q4	<b>Does the project involve capacity building programs being put in place for key stakeholders in the project area's management and use?</b>			
	Answer	Effectiveness deduction	Logic	Explanation

A	Yes	-10	End of Tool	A 10% effectiveness addition has been made because the project involves putting in places capacity building programs for key stakeholders, therefore improving their ability to manage the area.
B	No	10	End of Tool	A 10% effectiveness deduction has been made because the project involves putting in places capacity building programs for key stakeholders.

*Even-Aged FM Questions: Extended Rotation:*

Q1	<p><b>Are the forest stands managed according to a documented management plan that includes:</b></p> <ul style="list-style-type: none"> <li>○ <b>Pest and disease management</b></li> <li>○ <b>Thinning age and basal area</b></li> <li>○ <b>Wind breaks</b></li> <li>○ <b>Fire risk mitigation</b></li> </ul>			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	0	Go to Q2	NA
B	No	20	Go to Q2	A 20% effectiveness deduction has been made because the forests are not managed according to management plans. Without such plans there cannot be confidence that best management practices are followed.

Q2	<b>Has financial planning been conducted to ensure extended rotation length is financially viable to logging agents in the project area?</b>			
	Answer	Effectiveness	Logic	Explanation

		deduction		
A	Yes	0	Go to Q3	NA
B	No	40	Go to Q3	A 20% effectiveness deduction has been made because without financial planning the forest may be harvested at sooner stage than anticipated.

Q3	Is the operation pursuing or has it already achieved a third party sustainability standard? Eg: FSC			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	-10	End of Tool	A 10% effectiveness addition has been made because the project attempts to achieve 3 <sup>rd</sup> party standard with independent audits and certification of best practices.
B	No	0	End of Tool	

**AFFORESTATION / REFORESTATION AND AGROFORESTRY QUESTIONS:**

Q1	How would the project's tree planting activities be best described?			
	Answer	Effectiveness deduction	Logic	Explanation
A	Large scale / commercial operations	0	Go to Q2	NA
B	Small scale / smallholder led operations	0	Go to Q3	NA

Q2	Does the project involve plantations being managed according to a documented forest management plan including:			
	Answer	Effectiveness deduction	Logic	Explanation
				<ul style="list-style-type: none"> <li>○ Pest and disease management</li> <li>○ Maintenance of plantings to reduce mortality and/or replanting of dead seedlings</li> <li>○ Irrigation treatment in dry spells (if necessary)?</li> </ul>
A	Yes	0	Go to Q4	NA
B	No	20	Go to Q4	A 20% effectiveness deduction has been made because the project does not involve having documented forest management plans. Without such plans there cannot be confidence that best management practices are being followed.

Q3	Will smallholders receive technical support/extension and access to inputs?			
	Answer	Effectiveness deduction	Logic	Explanation

A	Yes	0	Go to Q4	NA
B	No	20	Go to Q4	A 20% effectiveness deduction has been made because the project does not involve providing smallholders with access to input and technical support. Without this, the trees are not likely to achieve the performance assumed in the model.

Q4	<b>How are the climate and conditions relative to the requirements of the species selected?</b>			
	Answer	Effectiveness deduction	Logic	Explanation
A	Optimal	0	Go to Q5	NA
B	Sub-optimal	10	Go to Q5	A 10% effectiveness deduction has been made because the climate and soil conditions are sub-optimal, meaning trees would not be expected to reach the same size as in optimal soils.
C	Poor	20	Go to Q5	A 20% effectiveness deduction has been made because the climate and soil conditions are poor, meaning trees would not be expected to reach the same size as in optimal soils.

Q5	<b>Will fertilizers and irrigation available be applied where required?</b>			
	Answer	Effectiveness deduction	Logic	Explanation

A	Yes	0	Go to Q6	NA
B	No	20	Go to Q6	A 20% effectiveness deduction has been made because fertilizers/irrigation are needed, but are not available or are not being applied. This will result in lower growth rates of the trees.
C	NA	0	Go to Q6	NA

Q6	<b>Will the plantation(s) be managed by people who have received adequate training and capacity building?</b>			
	Answer	Effectiveness deduction	Logic	Explanation
A	Yes	-10	End of Tool	A 10% effectiveness addition has been made because the managers of the plantation have received capacity building that enables them to manage the plantations effectively in the long run.
B	No	20	End of Tool	A 20% effectiveness deduction has been made because the plantations are not being managed by people who have adequate training.