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## Guatemala Forest Protocol V1.0

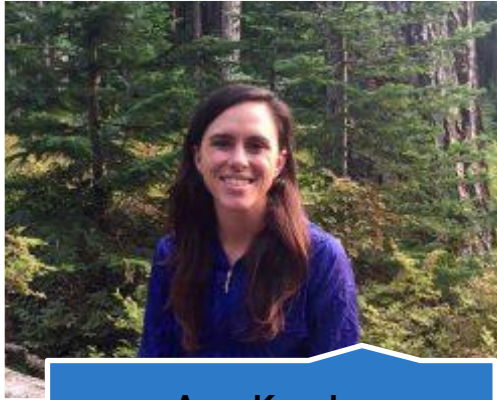
Workgroup Meeting 4:  
Quantification, Permanence & MRV

June 13, 2023

# Reserve Staff Introduction



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**Amy Kessler**  
Director of Latin America



**Claudia Jurado**  
Analytical Associate, Latin  
America



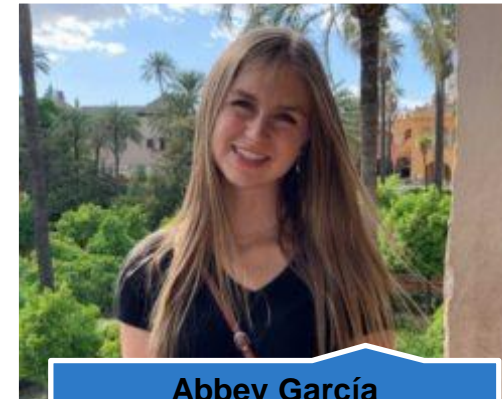
**Miguel López Delgado**  
Analytical Manager, Latin  
America



**Celeste Meléndez**  
Analytical Associate, Latin  
America



**Jon Remucal**  
Associate Director of Nature  
Based Solutions



**Abbey García**  
Analytical Associate, Latin  
America

# Housekeeping

- Workgroup members have the opportunity to actively participate throughout the meeting
  - Ask that you keep yourselves muted unless / until would like to speak
- We will ask and take questions throughout the session
  - Please use the raise your hand function
- All other attendees/observers are in listen-only mode
- Observers are free to submit questions in the question box
- We will follow up via email to answer any questions not addressed during the meeting
- The slides and a recording of the presentation will be posted online

# Agenda



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1. Presentations
2. Process Overview
3. Key Considerations for Eligibility
  1. Summary Social Safeguards and Additionality
  2. Quantification Principles
  3. Permanence
  4. MRV
4. Questions, comments, and next steps



Development process

# GUATEMALA FOREST PROTOCOL

# Workgroup Members

Organization (Alphabetical)	Name
ACOFOP	Sergio Guzman
Agroproyectos S.A.	Silverio Espino
Asociación SOPLANETSH	Xiomara Villeda
BRET CONSULTORES	Teresa Tattersfield
Carbonof	Geronimo Quiñonez Barraza
Climate Impact Partners	Eddy Melendez
Cool Effect	Rafael Mendoza
EARTHLAB	Juan Pablo Caamal Sosa
Fundación Solar	Hugo Romeo Arriaza Moralesa
Independent consultant	Carlos Renaldo Bonilla Alarcón
Independent consultant	Aristides Lara
Independent Consultant	Teodoro Si Cuc
Itsmo Verde	Ivan Barrientos
Karbone, Inc.	Ariela Farchi Behar
MÉXICO2	Alejandra Blanco
Munnings Advisory Group LLC	Alicia Robinson
Swisscontact	Miguel Chacón (alternative)
The Nature Conservancy	Sara Ortiz
Universidad Rafael Landívar	Roberto Waldemar Moya Fernández
WRI	Rene Ibarra
YAAX Carbon	Johny Romero Correa

# Protocol Development Overview

- **GOAL:** To create a robust Guatemala Forest Protocol that provides best practices for GHG accounting to generate Climate Reserve Tonnes (CRTs)
- Ensure high quality carbon credits that guarantee the environmental and social integrity of the project.
- Align the protocol with the laws and regulations of Guatemala.
- Incentivize activities that increase carbon sequestration in the forestry sector.
- Generate co-benefits (social and environmental).
- Leverage lessons learned from the Reserve's US and Mexico Forest protocols
- Solicit and incorporate expert stakeholder feedback.







# Workgroup Process and Expectations

## CAR/Process:

- Manage the protocol development process
- Hold ~4 workgroup meetings
- Reserve staff identify and solicit feedback on specific protocol criteria
  - **Specific questions for WG will be highlighted in red**
- Reserve staff will share the draft protocol with WG
- Revise protocol based on feedback

## WG/Expectations:

- Attend all (~4) workgroup sessions
- Be active participants: provide input and ask questions on protocol concepts and language
- After meetings, share additional input and expertise as needed
- Review draft protocol and provide written feedback to Reserve staff
- Be constructive, collaborative, and productive



Summary previous session

# PROTOCOL DEVELOPMENT CONSIDERATIONS

# Summary of Social Safeguards

## Free Prior and Informed Consent:

- SS1 Concepts related to forest carbon projects.
- SS2 Anticipated Costs
- SS3 Anticipated Benefits
- SS4 Sale of Credits and Use of Funds
- SS5 Project Approval
- SS6 Project Developer Approval
- SS7 Aggregate Approval

## Notification, Participation and Documentation:

- SS8 Proper Notification
- SS9 Participation
- SS10 Assembly documentation

## Project Governance:

- SS11 Identification of a Project Coordinator
- SS12 PC Role and Participation
- SS13 PC Termination and
- SS14 PC Replacement

The Reserve proposes the consideration of social safeguards **for any type of forest owner** (public, private and communal lands).  
SS1-SS4 (Presentation for Forest Owners, Cost-Benefit Analysis Tool)  
SS5 Project Owner & Forest Owner Agreement  
SS6 & SS7 Contracts  
SS8  
SS9 & SS10 N/A  
SS11 & SS12 - Project Coordinator  
SS13 & SS14 N/A

# Summary of Additionality

A forest project is considered additional if it would not have been implemented without carbon market incentives.

- Forest Project must comply with the following :



## Legal requirement test



## Performance standard test

- Agroforestry/Silvopastoral Systems and Small Urban Forests pass automatically due to inherent risks to forest cover
- Reforestation passes automatically per definition
- Large Urban Forests require historical canopy cover trendline
- Restoration has specific tool

- Review of the Restoration PED tool and related studies on risks of deforestation or degradation in Guatemala
- Studies on deforestation in mangrove forests in Guatemala



## Quantification Principles

# PROTOCOL DEVELOPMENT CONSIDERATIONS

A Forest Project must include the following Sources, Sinks, and Reservoirs:

Primary  
Effects:

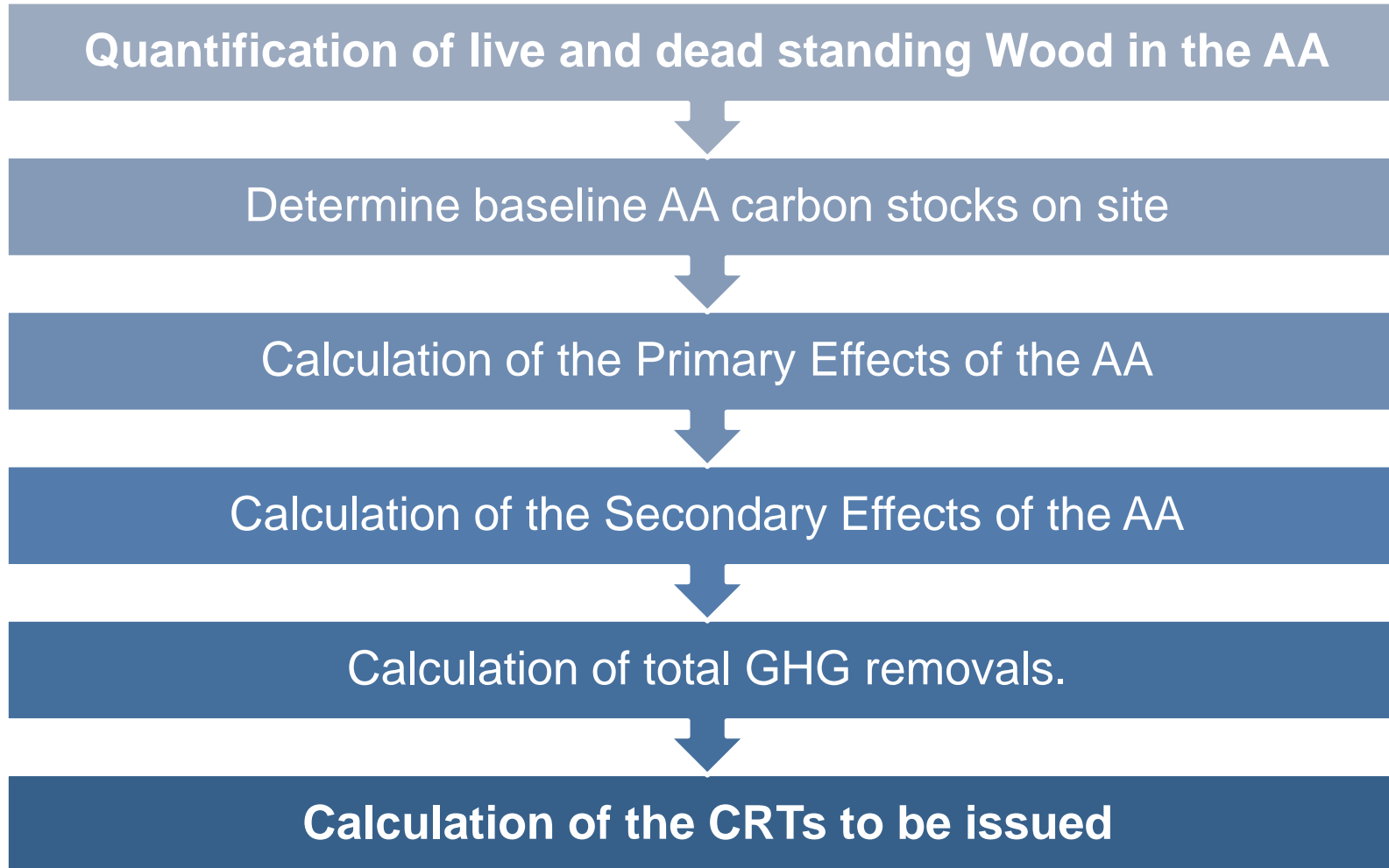
1. Standing live carbon
3. Standing dead carbon

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Secondary  
Effects:

10. Mobile combustion emissions from site preparation activities
13. Emissions from clearing of shrubs and herbaceous understory carbon
14. Biological emissions from clearing of forestland outside the Activity Area for agriculture and/or grazing
15. Biological GHG emissions/removals from changes in timber harvesting on forestland outside of the Activity Area

# GHG Quantification Steps



- A field sampling inventory is required:
  - The installation of field sample plots.
  - Field measurements of trees.
  - Measurements are entered into the CALCBOSK tool.
  - There is a standardized methodology



- A field sampling inventory is required:
  - The inventory of carbon stocks that are not affected by site preparation may defer until the second full verification.
  - For the second full verification, an inventory estimate of all carbon stocks must be provided, using the field sampling inventory methodology.
  - Reforestation projects are not eligible to receive CRTs until after the second full verification where inventory verification is conducted.

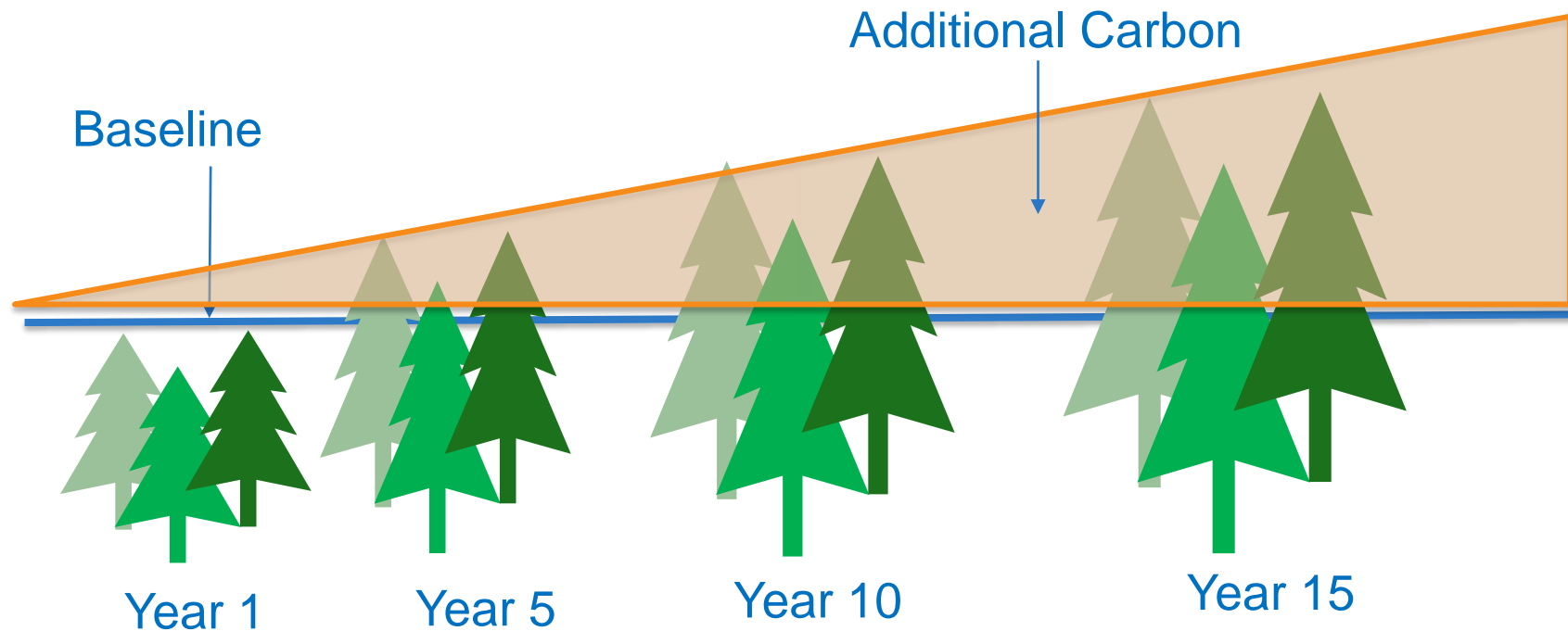
# Small Urban Forests, Agroforestry and Silvopastoral Systems

- Canopy cover inventory methodology can be used:
  - There is always the possibility of using the intensive inventory methodology for all AAs.
  - The canopy cover inventory methodology involves obtaining a measurement of the **area of canopy cover** within the Activity Area, to which a **ratio factor** is applied to generate an estimate of CO<sub>2</sub>e.
  - Ratio estimators are a relationship between CO<sub>2</sub>e in standing trees and canopy cover.
    - **Are there studies to determine ratio estimators (t CO<sub>2</sub>e) for Guatemala?**
      - The Reserve is evaluating MX studies for applicability.

# Baseline

After passing the additionality requirements, the baseline establishes:

- The quantification of the baseline will be pending further evaluation of forest management programs for IFM activity areas.
- For other activity types the baseline will be established as Initial Carbon Stock (ICS).



# The independent Baseline is calculated by Activity Area

- For field sampling inventory activities:
  - CALCBOSK automatically grows the inventory data to represent the inventory as of the start date.
- For activities using the canopy cover methodology:
  - A satellite image representing the start date is used to calculate carbon stocks for the baseline

# Calculation of Primary Effects

- For each Activity Area: quantify the actual change in GHG removals associated with the expected effects.
  - For activities that require a field sampling inventory:
    - CALCBOSK automatically grows the inventory data to represent the inventory as of the end date of the reporting period.
  - For activities using the canopy cover methodology:
    - A satellite image representing the start date is used to calculate carbon stocks for the baseline

The Carbon Monitoring Spreadsheet facilitates the calculation of Primary Effects.

# Calculation of Secondary Effects

Carbon stock enhancement activities by the Forest Project may result in increased forest carbon emissions outside the Forest Project.

## Depends on the forest activity:

1. **Reforestation activities** secondary effects from site preparation activities
  - Mobile combustion emissions from site preparation
  - Biomass removal during site preparation
2. **Reforestation, Restoration and Agroforestry and Silvopastoral Systems Activities:** Secondary effects from displacement of agricultural activities.
3. **Improved Forest Management Activities:** Secondary effects from reduced displacement of harvesting activities.

# Secondary Effects of Mobile Combustion for Reforestation Activities

Need to calculate mobile combustion emissions associated with site preparation:

- Require analysis of shrub cover before and after site preparation activities through remote sensing to calculate the percentage of shrub cover lost due to site preparation activities.
  - Only quantify these emissions for areas where mechanical equipment is used for vegetation removal
- The mobile combustion emission factor is applied based on conservative assumption:
  - 1.61 tCO<sub>2</sub>e/ha

$$SE_{mobil,init} = \sum(-1) \times (1.61 \times (CC_{arbusto,pre,AA} - CC_{arbusto,post,AA}) \times A_{AA})$$

# Secondary Effects of Biomass Removal for Reforestation Activities

Emissions from biomass removals associated with site preparation need to be calculated:

- Requires analysis of shrub cover before and after site preparation activities through remote sensing.
- A default proportion estimator for shrubs is applied based on the assessment area ( $RE_{AA}$ )

$$SE_{arbusto,init} = \Sigma[(-1) \times (A_{AA} \times (CC_{arbusto,pre,AA} - CC_{arbusto,post,AA}) \times RE_{AA})]$$

- Are there studies to determine ratio estimators (t CO<sub>2</sub>e) for Guatemala?
  - The Reserve is evaluating MX studies for applicability.

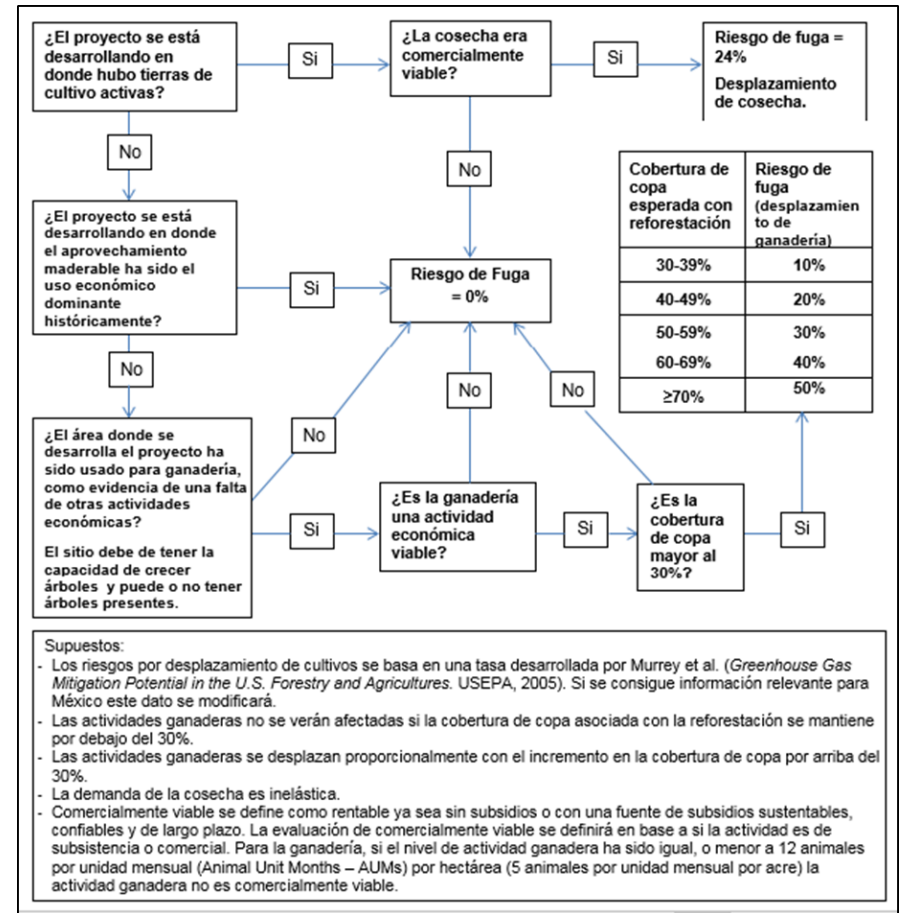


# Secondary Effects for Reforestation, Restoration, Agroforestry and Silvopastoral Systems Activities



The risk of secondary effects associated with the displacement of agricultural activities needs to be calculated:

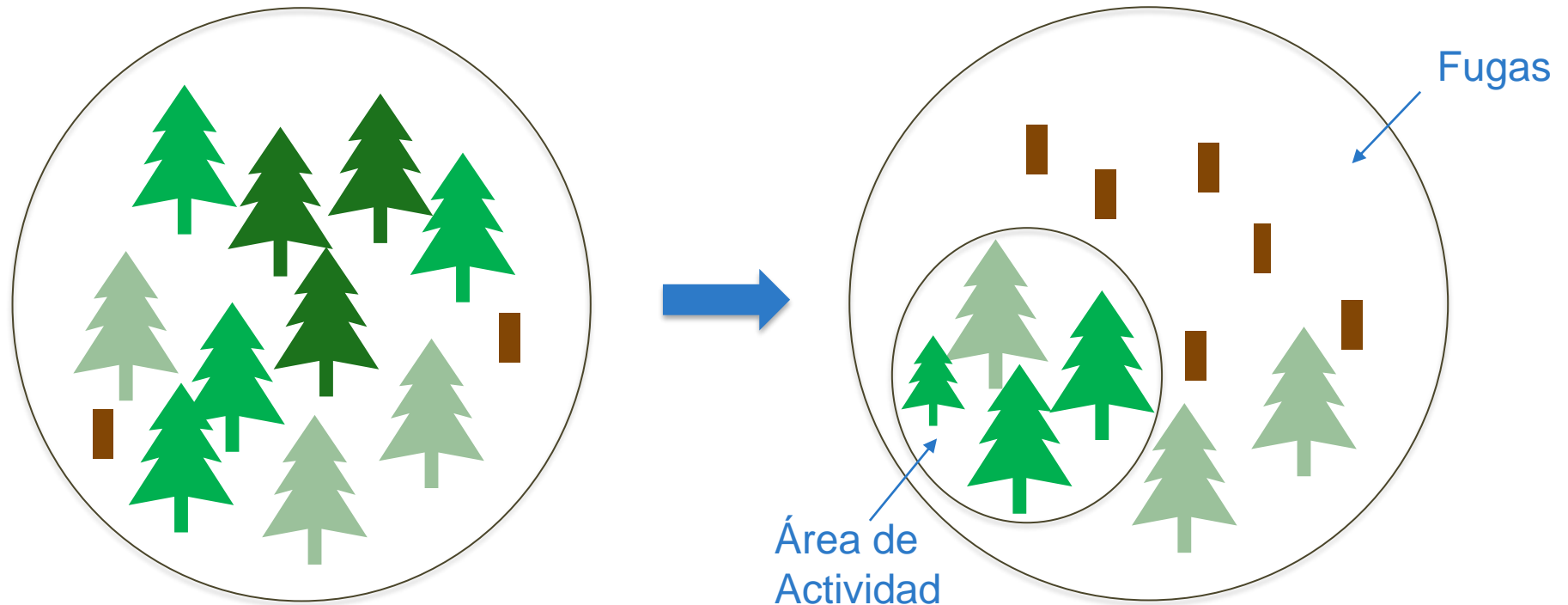
- The flow chart is used to determine the risk of leakage and the leakage deduction for each Activity Area.
- The flow chart consists of questions about the level of agriculture activities before project implementation and the level of reforestation activities by the project.



# Improved Forestry Management Secondary Effects

Emissions associated with displacement of harvesting activities need to be calculated:

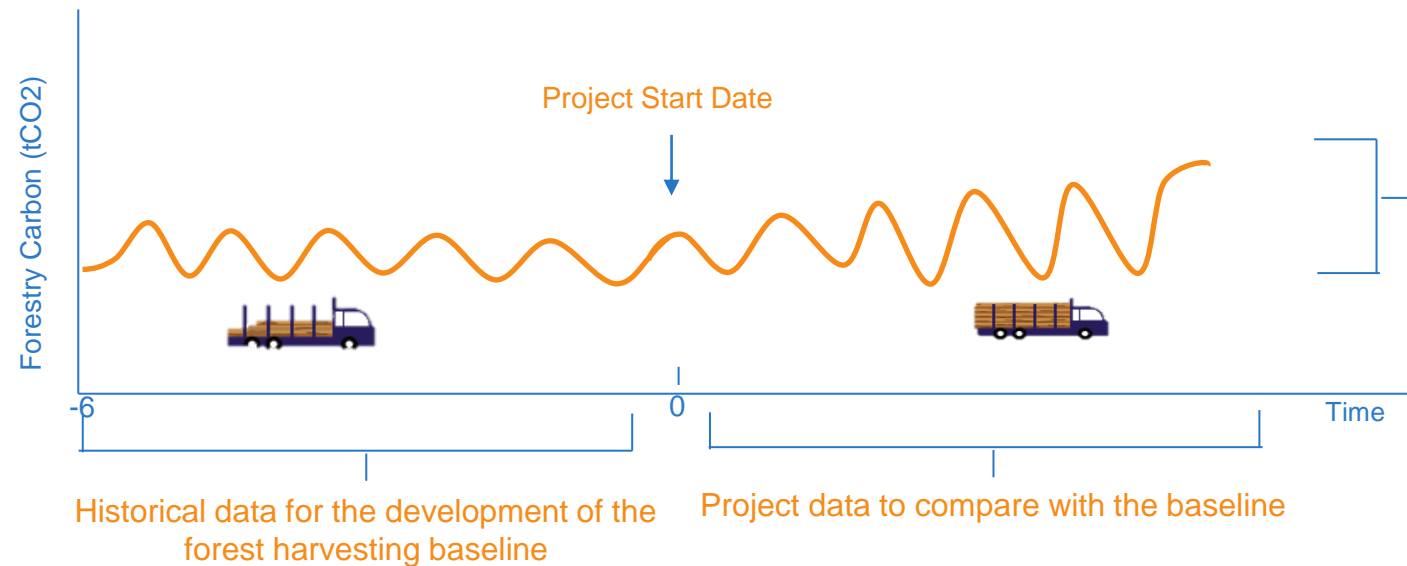
- the difference between timber extraction before and after implementation of project activities.



# Improved Forestry Management Secondary Effects

The temporality for assessing secondary effects is carried out throughout the life of the project:

- A historical ave is calculated, using the harvest volumes of the previous 6 yrs from the start date as the baseline.
- Each year the current value is calculated for comparison with the baseline.
- Sum the project scenario values up to the current year and sum the baseline values up to the current year and compare the summed volumes each year.
  - Apply a 20% deduction to the difference in RPs when the sum of the project scenario < the sum of the baseline scenario.



- The amount of CO<sub>2</sub> in the forest fluctuates with the harvesting cycle.
- After project implementation, carbon stocks increase, which increases wood products in the long term.

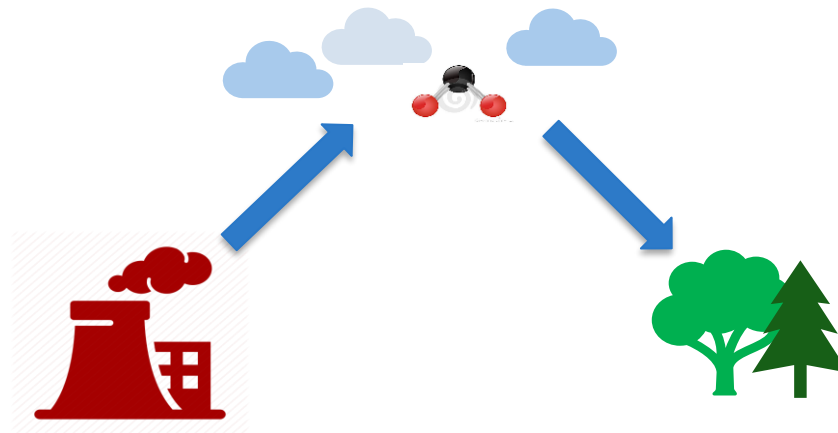


Permanence

# PROTOCOL DEVELOPMENT CONSIDERATIONS

## Forest Projects must meet the permanence standards:

- The climate benefit of the project must be "permanent," which is defined by a 100-year period for Forest Projects.
- A CRT credit is issued for each ton of CO<sub>2</sub>e that is removed from the atmosphere for a 100-year period.



# Ensuring the Permanence of Accredited GHG Removals

The Reserve requires Forest Projects to ensure that the carbon associated with credited GHG removals remains **stored for a period of time between 30 and 100 years**.

- The number of **credits is stipulated according to the commitment period relative to**

The protocol establishes multiple procedures to ensure that credited GHG removals meet permanence obligations:

1. A legal contract, known as a **Project Implementation Agreement**, signed by the Forest Owner and the Reserve, that establishes the obligations of each party in the event of a reversal.
2. In the case of communal and collective lands, a **Resolution with a formal commitment approved by the Communal land** to maintain credited carbon stocks for a period of 100 years aligned with their Comarca or collective land processes and legal standards.
3. An insurance mechanism, known as the **Buffer Pool**, based on the project's risk profile.
4. An **incentive approach that redistributes the dividends from the buffer pool** to projects that demonstrate continued compliance and maintenance of sequestered carbon stocks over time.

# Project Implementation Agreement (PIA)

The Project Implementation Agreement (PIA) is the contractual agreement between the Forest Owner and the Reserve:

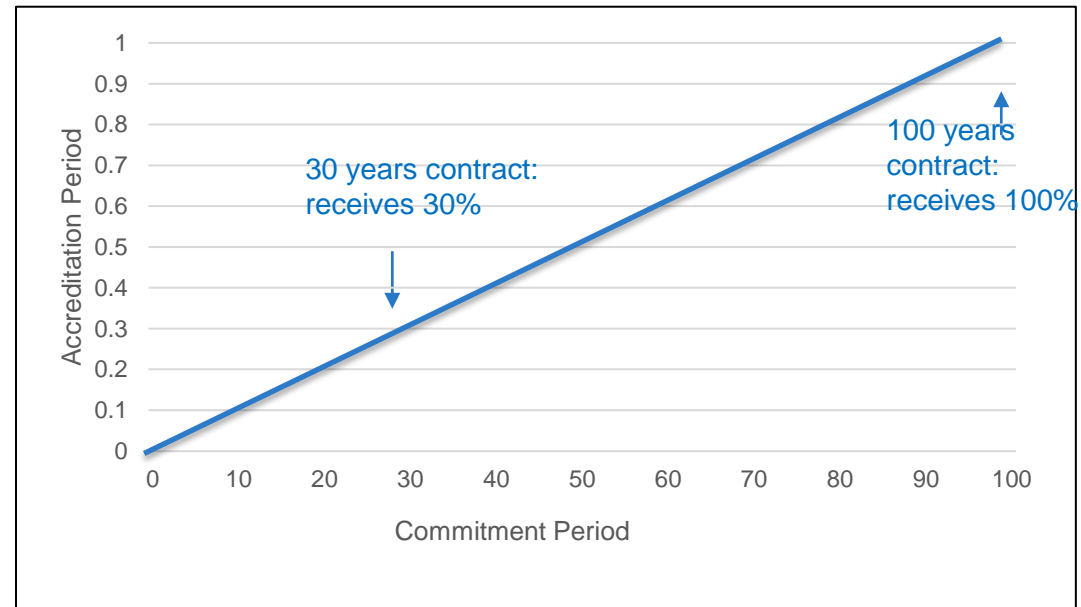
- The PIA establishes the Forest Owner's obligations to comply with the protocol's requirements.
- The Forest Owner can define the commitment period between **30 and 100 years**.
  - The PIA can be renewed annually
  - The number of credits is stipulated according to the commitment period length.
- **What is the process to record before a Public Notary?**
- **Could the PIAs be registered with the Public Registry?**



# Accounting Ton/Year and the Emission of CRTs

Time commitment periods less than 100 years will receive a fraction of the total credit:

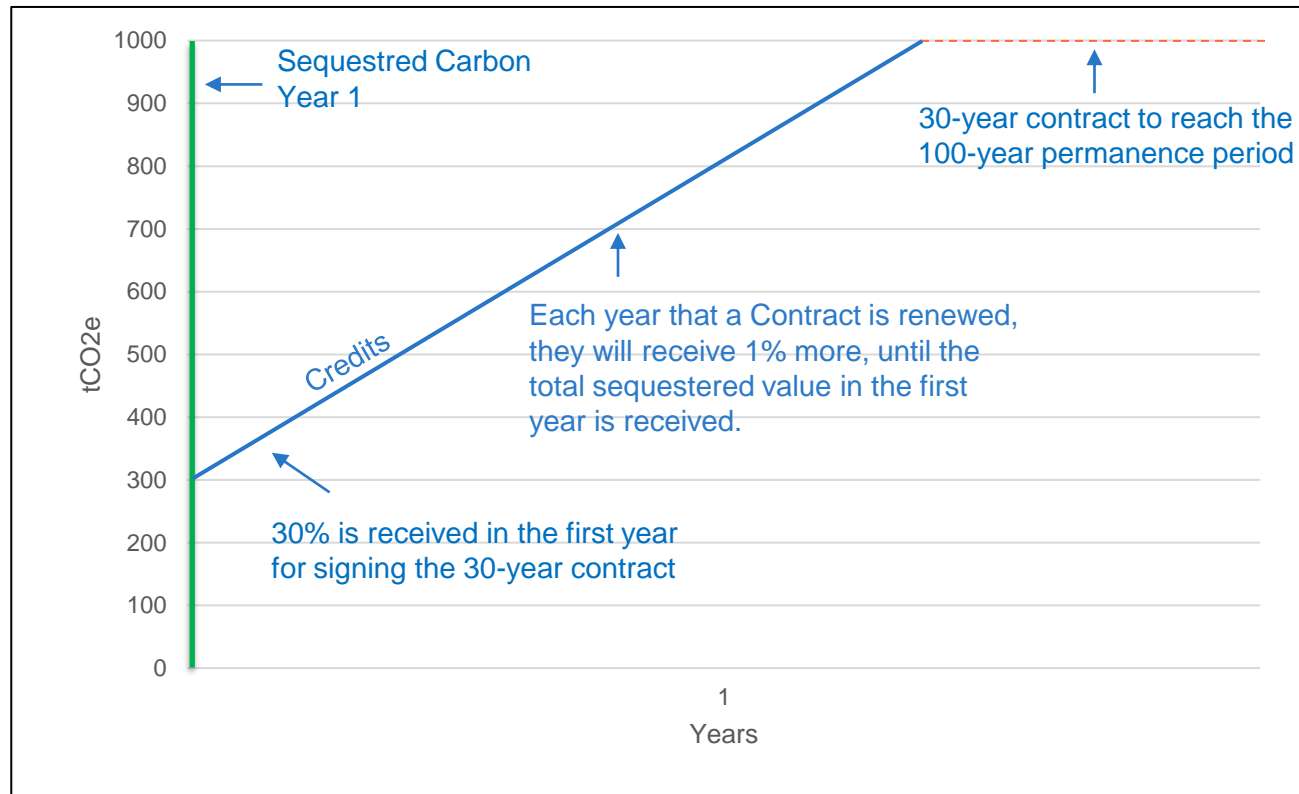
- Protocol uses ton/year accounting to ensure permanence
- For each additional ton of CO<sub>2</sub>e, the crediting will be equivalent to the portion of the commitment period relative to the 100-year permanence period





# Accounting Ton/Year and Emission of CRTs

Tons secured in a short-term period will have additional annual emissions over time, which is an additional incentive to achieve long-term permanence:



This process is repeated each year when additional carbon is sequestered.

- Contributions to the Buffer pool are determined through a **project-specific risk assessment**.
- Forest Projects also receive an **economic incentive** to protect against reversals, based on an expected flow of future credits.
  - As projects demonstrate continued compliance, a percentage of their contribution to the Buffer Pool may be redistributed to the Forest Owner over time based on the ton-year value of project-specific credits in the Buffer Pool.
- The Reserve adaptively manages the Buffer Pool, including its dividends, based on an ongoing assessment of programmatic risk and the health of the Buffer Pool.

# Project Contribution to the Buffer Pool

Risk Category	Contribution		
	Private Lands	Public Ownership	Collective Lands
Financial Failure	6% o 8%	4% o 6%	4% o 6%
Illegal Forest Biomass Removal *	2% o 4%	2% o 4%	2% o 4%
Conversion	4% o 8%	4% o 6%	4% o 6%
Over Harvesting**	0% o 4%	0% o 4%	0% o 4%
Social	2%	2%	4% o 6%
Political***	2%	4%	2%
Wildfire, Disease, or Insect Outbreak****	4% o 6%	4% o 6%	4% o 6%
Other Catastrophic Events	8%	8%	8%

\*Calculated based on implementation of forest management program and/or international forest certification programs.

\*\* Calculated based on the inclusion AA of MFM.

\*\*\* Calculated based on World Governance Indicators (<https://info.worldbank.org/governance/wgi/Home/Reports>)

\*\*\*\* Calculated based on the implementation of fire risk reduction works in your project area

*Rerversal Risk Rating* =  $100\% - [(1 - \text{FinancialFailure}\%) \times (1 - \text{IllegalForestBiomassRemoval}\%) \times (1 - \text{Conversion}\%) \times (1 - \text{OverHarvesting}\%) \times (1 - \text{Social Risk}\%) \times (1 - \text{Political Risk}\%) \times (1 - \text{Wildfire / Disease/ InsectOutbreak}\%) \times (1 - \text{OtherCatastrophicEvents}\%)]$

# Redistribution of Contributions to the Buffer Pool

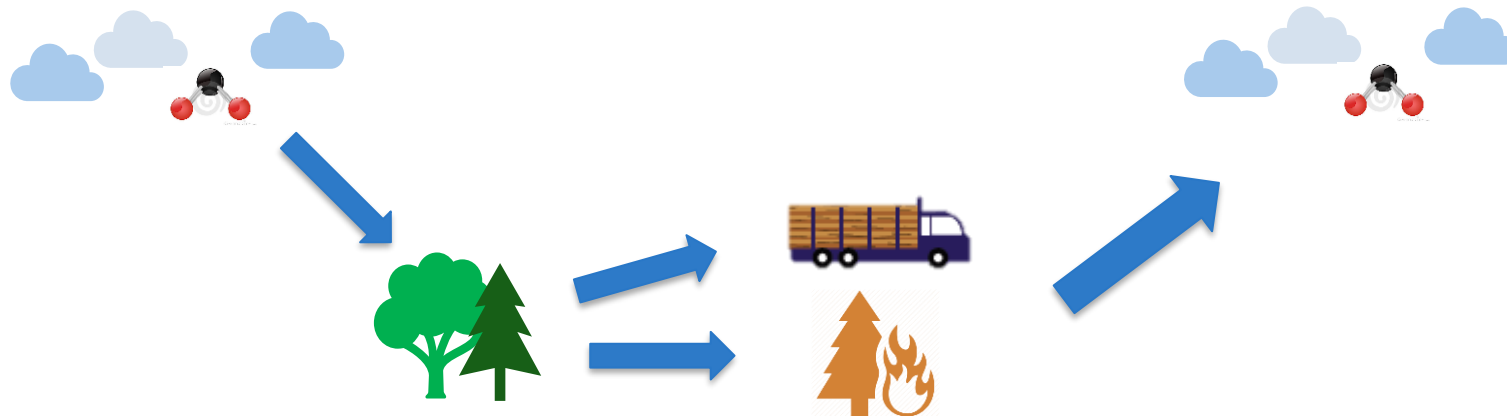
- Forest Projects receive an **economic incentive for** protecting against reversals based on redistributions of contributions to the Buffer Pool or dividends from the Buffer Pool.
  - As projects demonstrate continued compliance, a percentage of their contribution to the Buffer Pool may be redistributed over time based on the tonne-year value of the project's credits in the Buffer Pool.



# Redistribution of Contributions to the Buffer Pool

- Redistributions and tonne-year value:
  - **Each year that one tCO<sub>2</sub>e is kept out of the atmosphere provides an atmospheric benefit of approximately 1%** relative to the atmospheric benefit produced by one tCO<sub>2</sub>e kept out of the atmosphere for 100 years.
  - As tCO<sub>2</sub>e are kept out of the atmosphere over time, **the portion of credits that have already provided an atmospheric benefit changes from being "at risk of reversal" to "not at risk of reversal"**.
  - The principle of tonne-year accounting is applied to the long-term management of the Buffer Pool, **such that the contributions made are redistributed over time as dividends as the credits change from being at risk to not being at risk of reversal.**

- Any reversal needs to be compensated for if they affect the contractually secured CRTs.
- There are two types of reversal:
  - Avoidable
  - Unavoidable



# Unavoidable Reversal

An Unavoidable Reversal is one that is not caused by the negligence or premeditation of a Forest Owner, for example, **natural events** such as fires and pests.

To compensate:

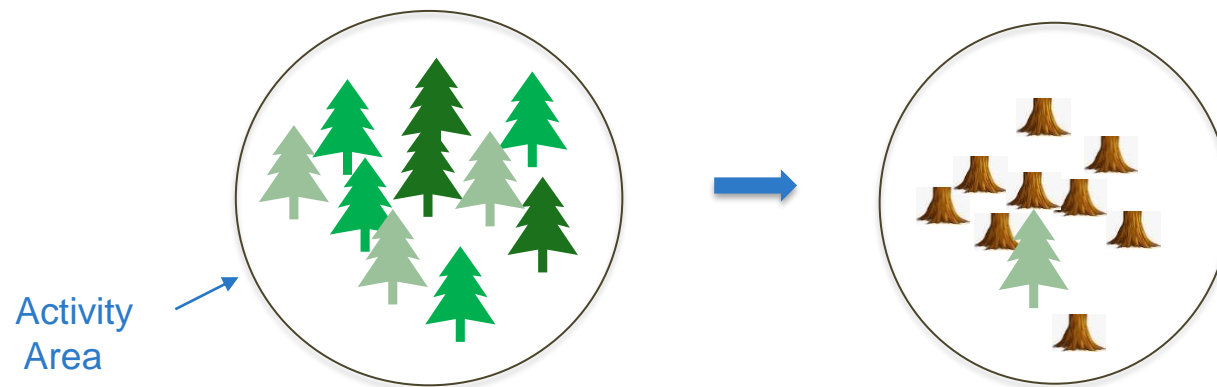
- A Forest Project contributes an amount of CRTs to a Buffer Pool each year that credits are issued.
- The Reserve manages the Buffer Pool and will retire an amount of CRTs equal to the number of tons affected by an unavoidable reversal.



# Avoidable Reversal

An Avoidable Reversal is any reversal that is due to the Forest Owner's **gross negligence or willful intent**, for example harvesting, urban developments, or harm to the Activity Area, that reduces carbon stocks more than the total tons secured and emitted as credits.

- Not covered by the Buffer Pool
- The Forest Owner is responsible for removing a number of CRTs equal to the number of tons affected by the avoidable reversal.







**MRV**

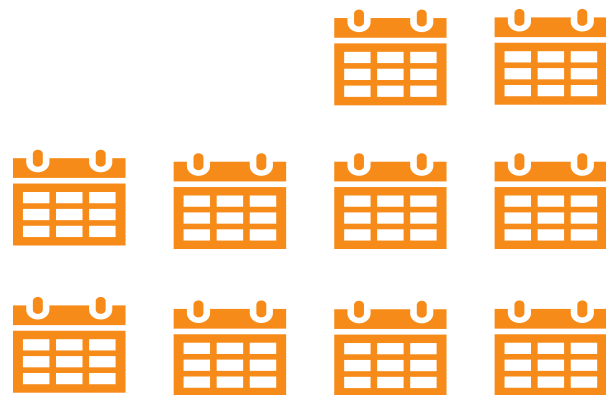
# **PROTOCOL DEVELOPMENT CONSIDERATIONS**

# Reporting Period

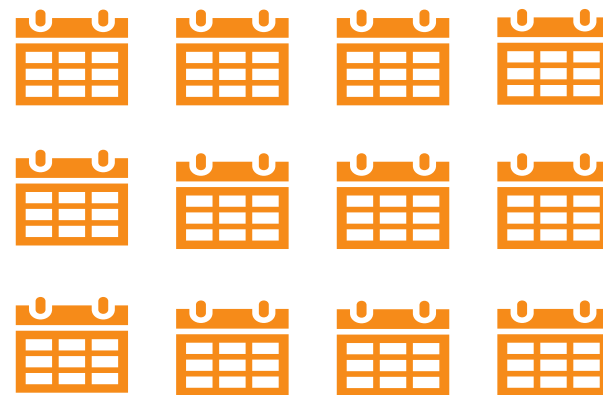
A Reporting Period is a period of time in which the Forest Owner quantifies and reports GHG removals:

- Duration of 12 months
- Exception: the first Reporting Period, which can be up to 12 months from the Project Start Date

Reporting Period 1:

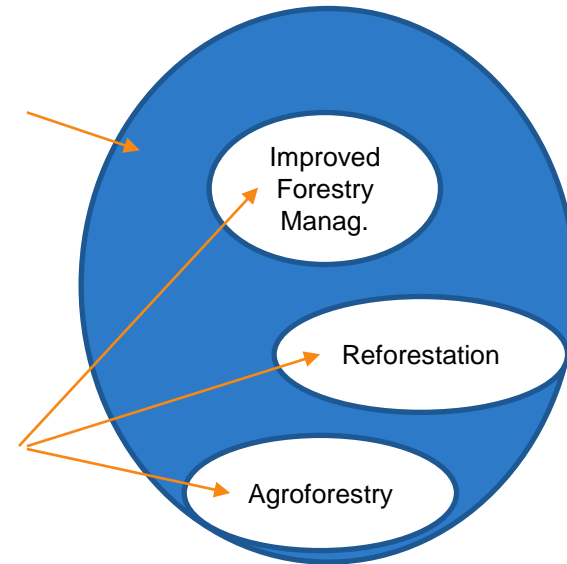


Reporting Period 2-X:



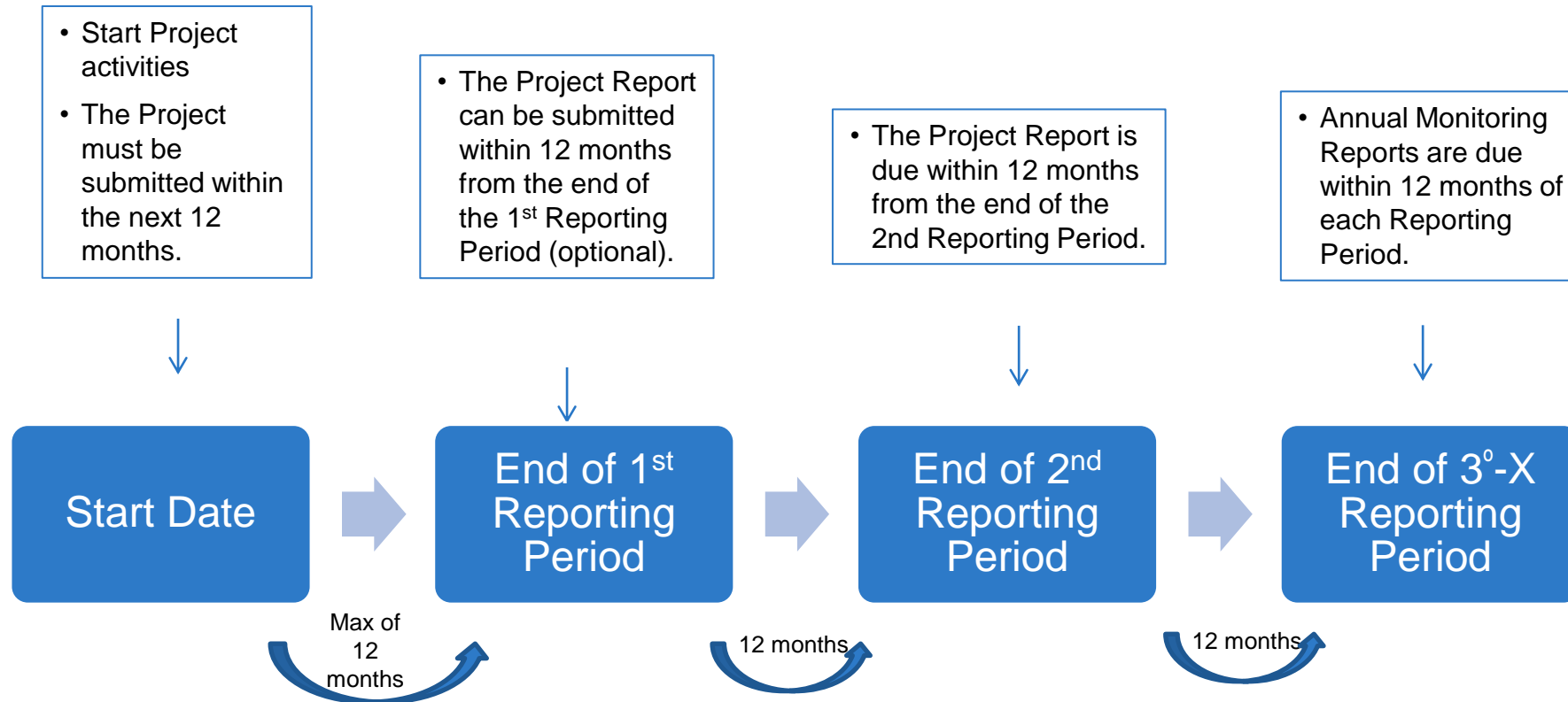
The Project Area and Activity Area serve as two distinct levels of monitoring:

- Project Area:
  - Forest cover monitoring for leakage (environmental safeguard 4)
- Activity Area:
  - Quantification of carbon stocks
  - Native species reporting (environmental safeguards 2 and 3)



- **Project Submission Form:** required to determine if the project meets the eligibility criteria.
  - To be submitted within 12 months after the start date.
- **The Project Report:** The main document describing the Project.
  - Defines the Project Area and Activity Areas, how it meets the eligibility, additionality, permanence requirements, and shows the quantification of its baseline and project carbon stocks.
  - To be submitted within 12 months after the end of the first or second Reporting Period.
- **Annual Monitoring Report:** the basis for reporting Project updates annually.
  - To be submitted within 12 months after the end of each Reporting Period.

# Monitoring Cycle



## Initial Verification

- Is a Full Verification
- 12 months from the end of the Reporting Period in which the Project Report was submitted.

## Full Verification



# SUMMARY AND NEXT STEPS

# Timeline of protocol development



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# Next steps

- ***For Interested Stakeholders:***
  - Email us feedback anytime
- ***For Reserve:***
  - Compile summary notes on discussion
  - Post recording, notes, and presentation to the webpage
  - Drafting protocol with workgroup considerations
  - Finalize for Guatemala Forestry Protocol Draft : **tentative, June 26<sup>th</sup>**
- ***For Workgroup:***
  - Email feedback on today's discussion by **June 20<sup>th</sup>**
  - Look out for a communication with the Forestry Protocol for Guatemala Draft version : **June 26<sup>th</sup>**
  - Review of the draft Protocol by the working group: Potential date: **June 26 - July 7**



# QUESTIONS OR COMMENTS?

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