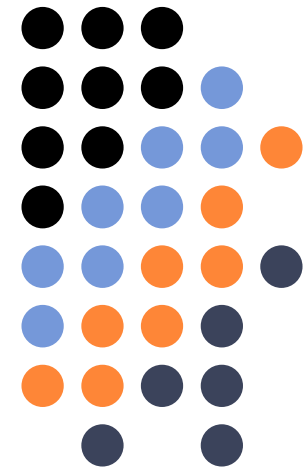


Afforestation Reforestation

20th May 2011
JICA Expert Team
Shiro Chikamatsu



Objectives of the Seminar



- To understand the major issues regarding A/R carbon credit projects
- To understand the basic components of the A/R CDM methodology
- To know that there are new approaches to forestry carbon credit projects

Table of contents



1. Basics

- What are A/R projects?
- A/R Definitions
- Remote Sensing Technology
- Geographic Information System
- Stratification

2. A/R Issues

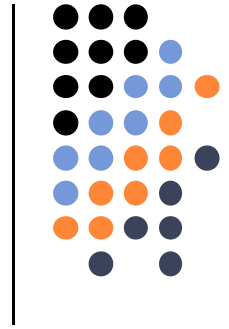
- CDM Statistics
- Issue1: Permanence
- Issue2: Monitoring

3. A/R Methodology

- Types of Methodologies
- Methodologies used for registered projects
- Basic concept
- Procedure

4. New Approach

- Credit pooling
- REDD
- REDD & A/R Comparison
- Countries which may benefit from REDD projects
- REDD, REDD+ and REDD++
- Potential projects in Sri Lanka³



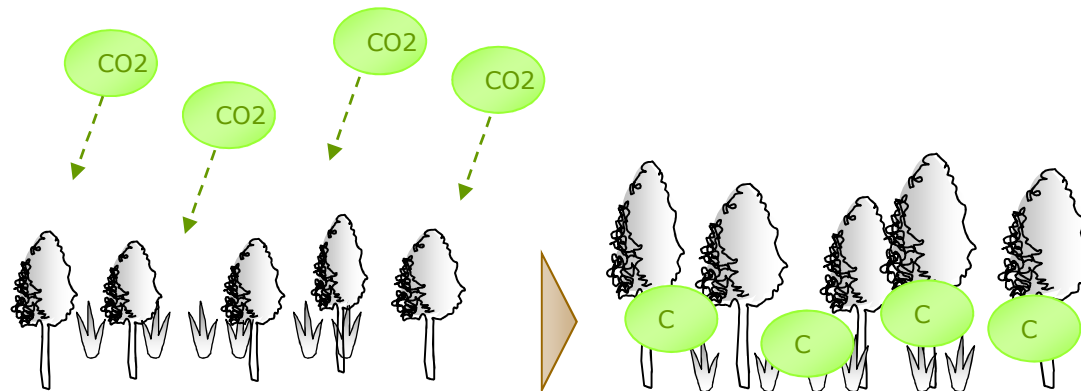
1. Basics



1. Basics

What are A/R projects?

- A/R → Afforestation Reforestation
- CO₂ is absorbed by the trees
- Trees fix the carbon during its growth, thus prevent emission of CO₂ to the atmosphere.



1. Basics

A/R definitions



- **Reforestation (CDM definition)**

is the direct human-induced conversion of non-forested land to forested land through planting, seeding and/or the human-induced promotion of natural seed sources, on land that was forested but that has been converted to non-forested land. For the first commitment period, reforestation activities will be limited to reforestation occurring on those lands that did not contain forest on 31 December 1989.

- **Afforestation (CDM definition)**

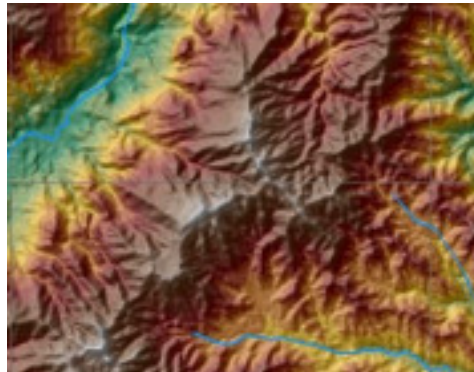
is the direct human-induced conversion of land that has not been forested for a period of at least 50 years to forested land through planting, seeding and/or the human-induced promotion of natural seed sources.

1. Basics

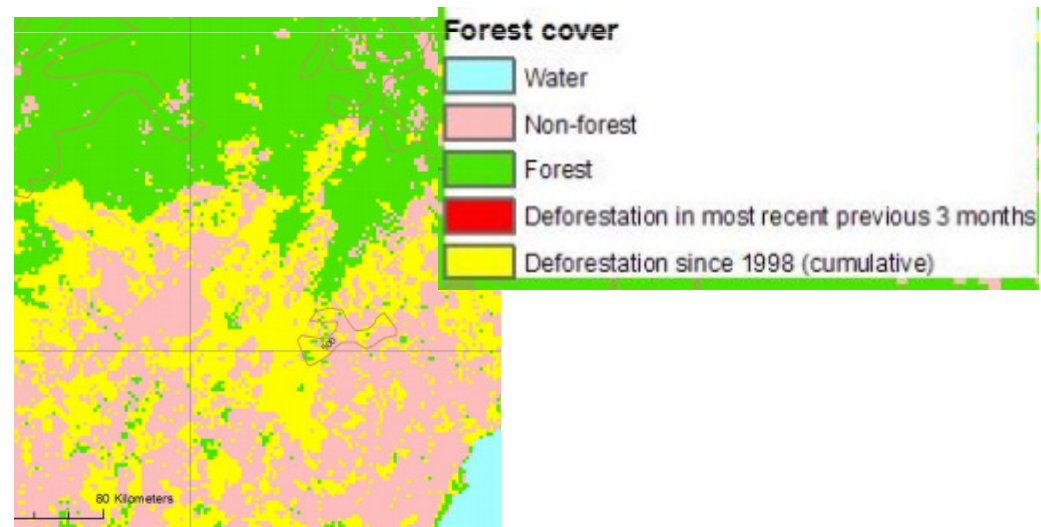
Remote Sensing Technology



Remote Sensing involves acquisition of the land surface data using aerial sensor technologies, such as aerial surveillance and satellite imaging.



Terrain information



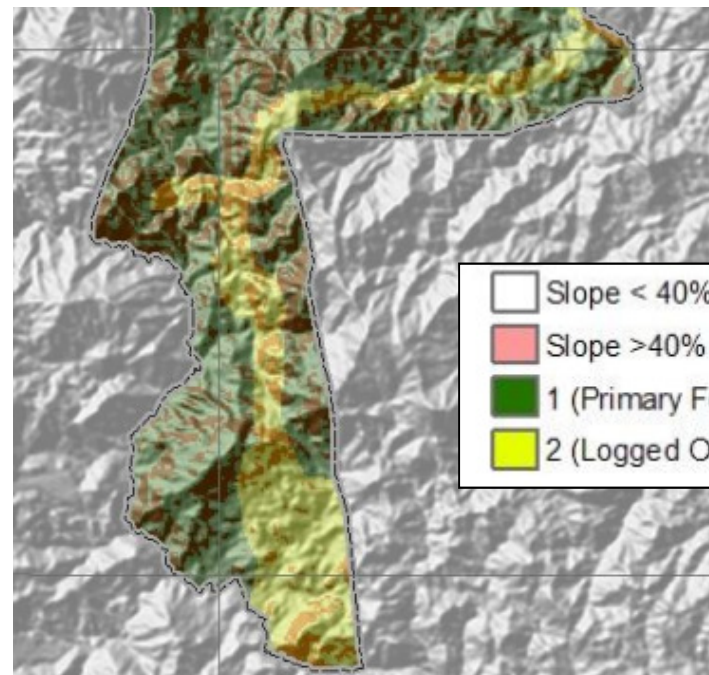
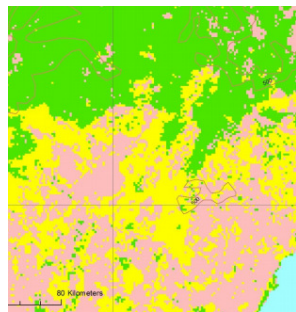
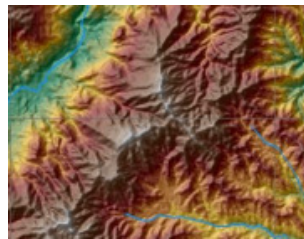
Forest Cover Information

1. Basics

Geographic Information System



Geographic Information System (GIS) is an information technology system which manages data in reference to geographic location data.



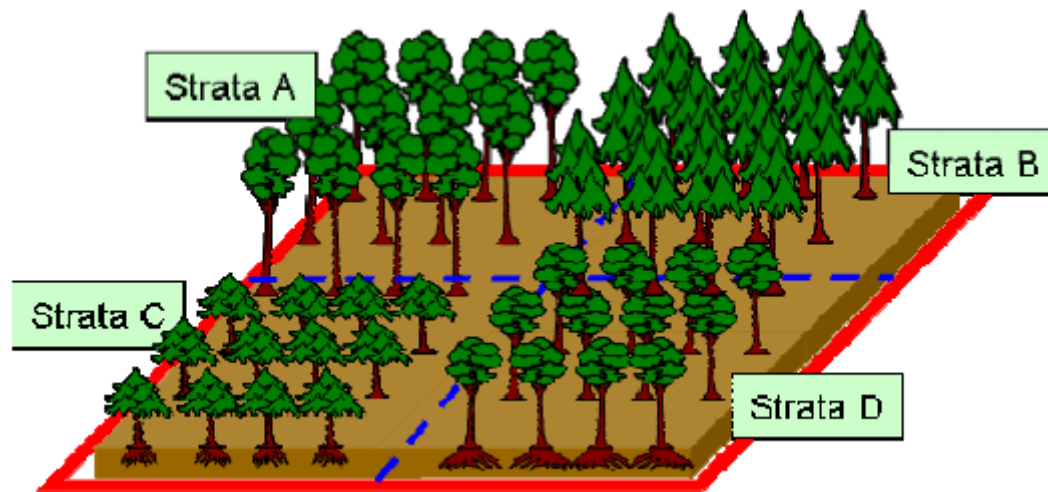
Terrain and forest cover information combined

1. Basics

Stratification



- REDD project sites are divided into strata.
- Each strata is in homogenous condition
- Sampling needs to be conducted at each strata.



Factors which affects carbon stock change:

- ❑ Soil
- ❑ Climate
- ❑ Slope
- ❑ Previous land use
- ❑ Project plan
 - Tree species
 - Timing of planting & harvesting

Source: JICA (2008) Guidebook for Small Scale AR CDM activities



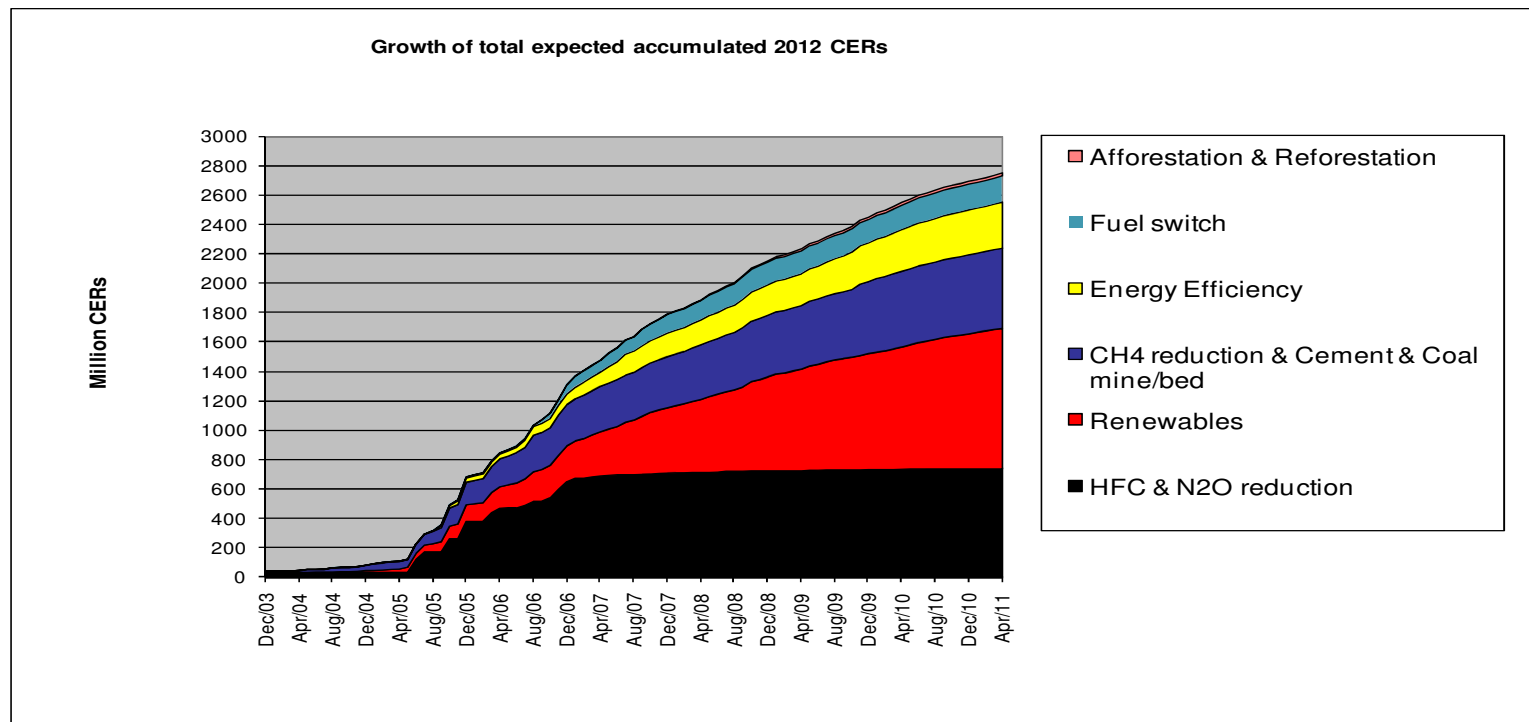
2. A/R Issues

2. A/R Issues

CDM Statistics



- As of May 2011, there are 3034 registered projects.
- Of which 21 projects are registered A/R projects.
- That is 0.7% of the total registered projects.



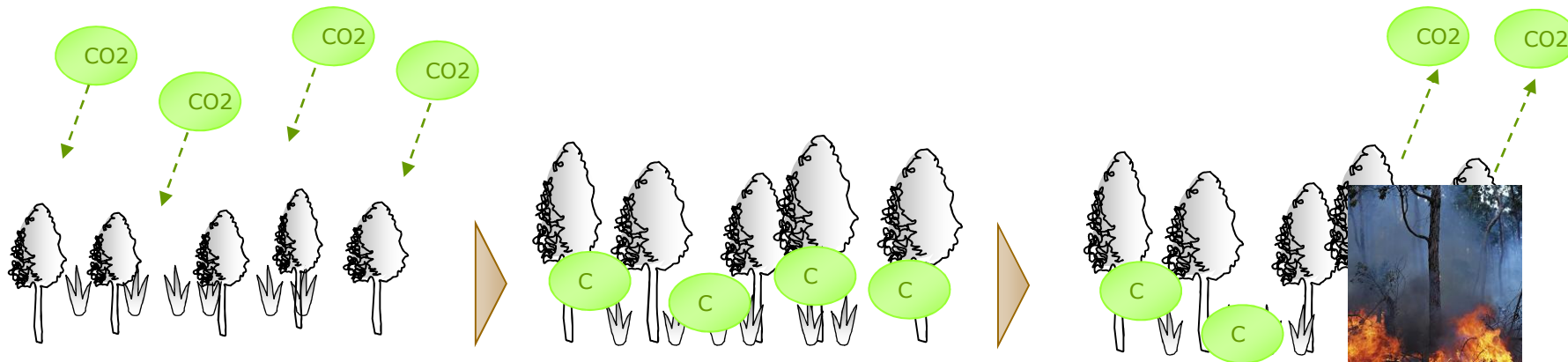
There are two major issues regarding A/R CDM...

2. A/R Issues

Issue1: Non-Permanence



- Trees stocks carbon (thus it is a carbon sink).
- Once the tree is combusted or rotten, CO₂ and methane are released to the atmosphere.



Carbon credit generated from A/R CDM activities are different from the other CDM projects. **They are time limited credits.**

I-CER: expires at the end of the crediting period (end of project)

t-CER: expires during every commitment period (end of Kyoto Protocol)

2. A/R Issues

Issue2: Monitoring



Monitoring of forestry activity involves covering vast area of land, from 1,000 ha to even 10,000ha.

It involves field survey (per strata) and that requires significant manpower. Therefore monitoring activity is often carried out every 5 years, in which case carbon credit could only be issued every 5 years.

Example of Monitoring Parameters for Hydro Power Project:

- Supply of electricity to the grid
- Flow rate of the water
- CO2 emission factor of the grid
- Inhouse electricity consumption

Specific monitoring points

Example of Monitoring Parameters for AR CDM project:

- Fossil fuel use at the site (chainsaw/ tractors)
- Burning of biomass
- Nitrogen Fertilization
- Tree diameter sampling

AR CDM needs to cover vast area



3. A/R Methodology

3. A/R Methodology

Types of methodologies



There are currently 12 large scale and 6 small scale approved CDM methodologies.
Small scale methodology is less than 60,000t

Large scale Methodologies

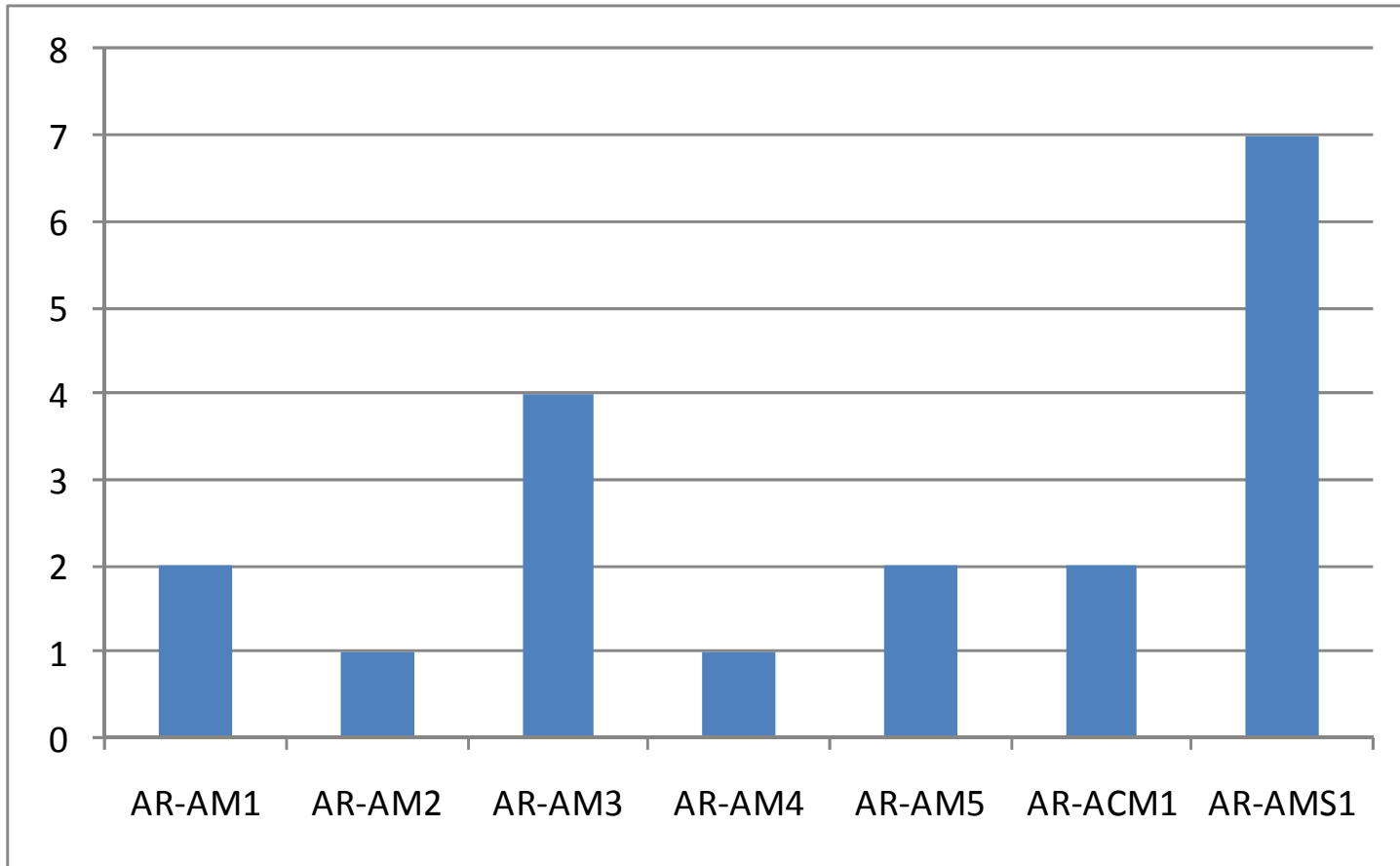
- AR-AM0002** Restoration of degraded lands through afforestation/reforestation
- AR-AM0004** Reforestation or afforestation of land currently under agricultural use
- AR-AM0005** Afforestation and reforestation project activities implemented for industrial and/or commercial uses
- AR-AM0006** Afforestation/Reforestation with Trees Supported by Shrubs on Degraded Land
- AR-AM0007** Afforestation and Reforestation of Land Currently Under Agricultural or Pastoral
- AR-AM0009** Afforestation or reforestation on degraded land allowing for silvopastoral activities
- AR-AM0010** Afforestation and reforestation project activities implemented on unmanaged grassland in reserve/protected areas
- AR-AM0011** Afforestation and reforestation of land subject to polyculture farming
- AR-AM0012** Afforestation or reforestation of degraded or abandoned agricultural lands
- AR-AM0013** Afforestation and reforestation of lands other than wetlands
- AR-ACM0001** Afforestation and reforestation of degraded land
- AR-ACM0002** Afforestation or reforestation of degraded land without displacement of pre-project activities

Small scale Methodologies

- AR-AMS0001** Simplified baseline and monitoring methodologies for small-scale A/R CDM project activities implemented on grasslands or croplands with limited displacement of pre-project activities
- AR-AMS0002** project activities under the CDM implemented on settlements
- AR-AMS0003** Simplified baseline and monitoring methodology for small scale CDM afforestation and reforestation project activities implemented on wetlands
- AR-AMS0004** Simplified baseline and monitoring methodology for small-scale agroforestry - afforestation and reforestation project activities under the clean development mechanism
- AR-AMS0005** Simplified baseline and monitoring methodology for small-scale afforestation and reforestation project activities under the clean development mechanism implemented on lands having low inherent potential to support living biomass
- AR-AMS0006** Simplified baseline and monitoring methodology for small-scale silvopastoral - afforestation and reforestation project activities under the clean development mechanism
- AR-AMS0007** Simplified baseline and monitoring methodology for small-scale A/R CDM project activities implemented on grasslands or croplands

3. A/R Methodology

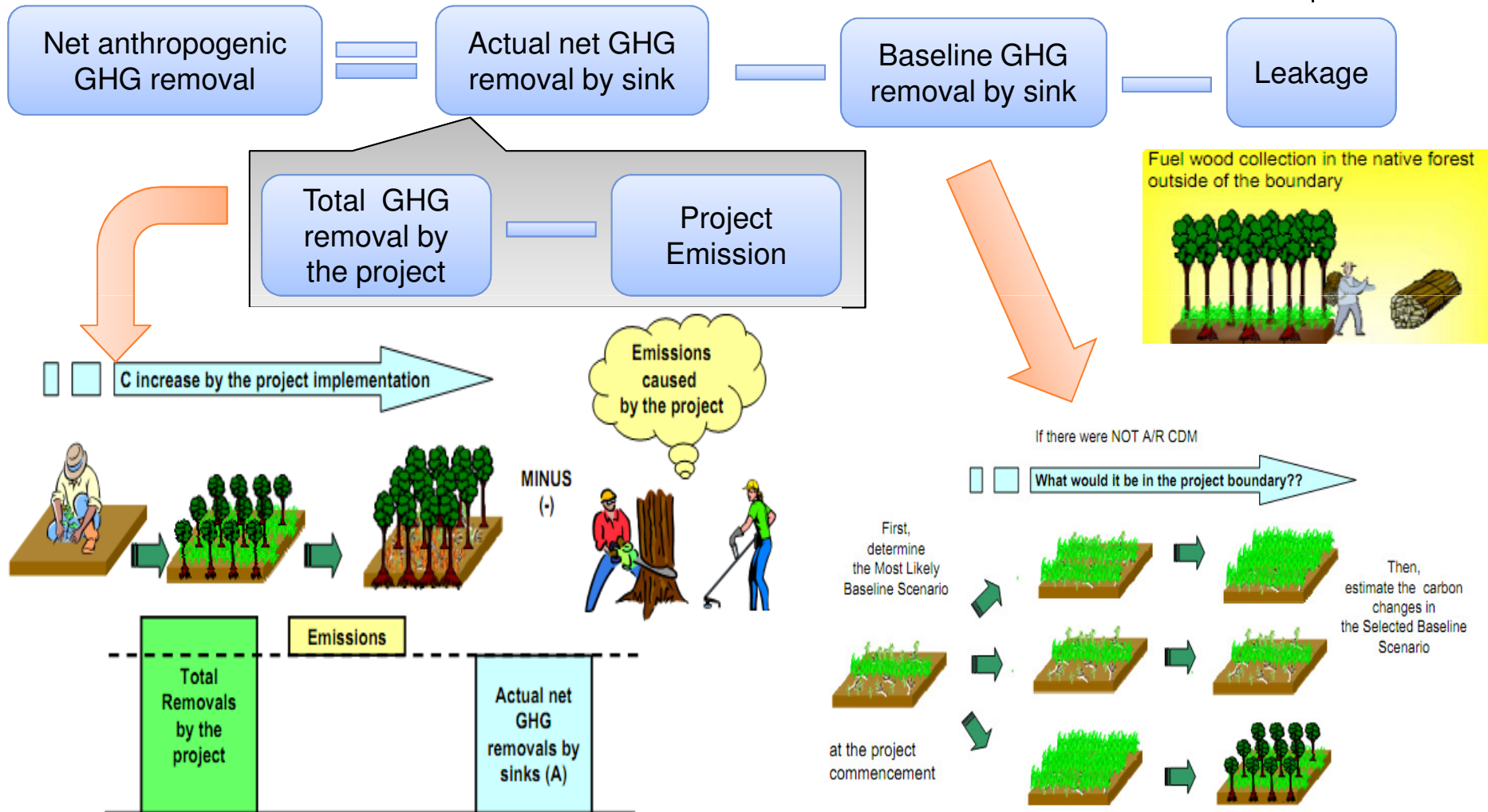
Methodologies used for registered projects



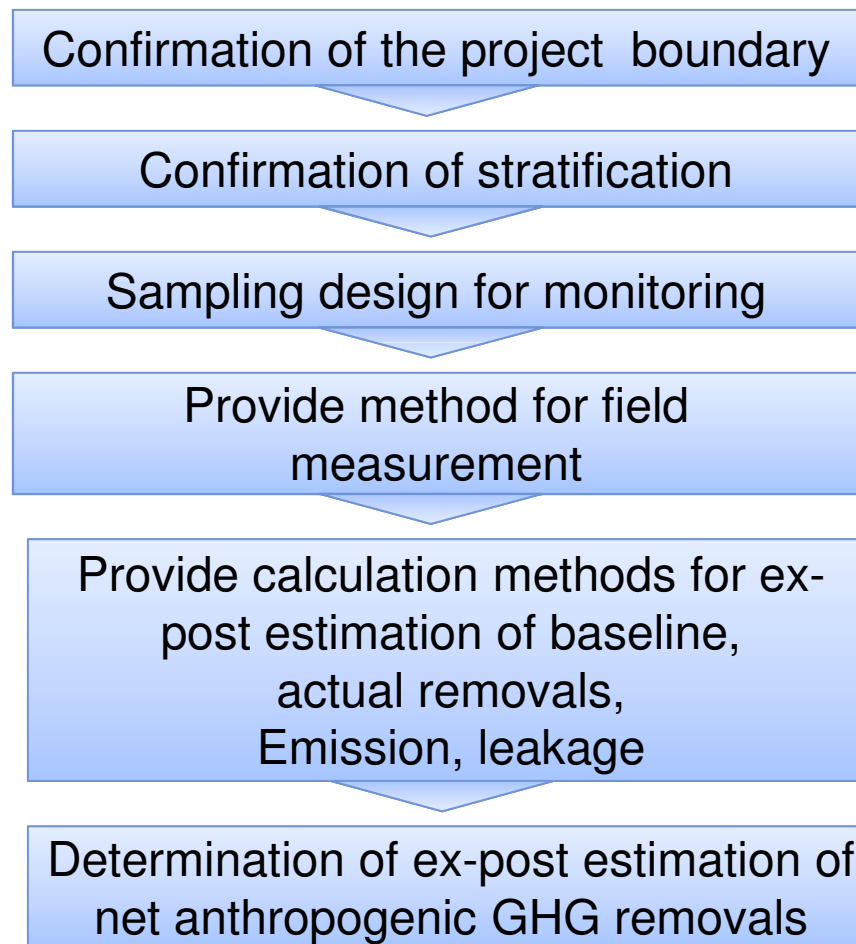
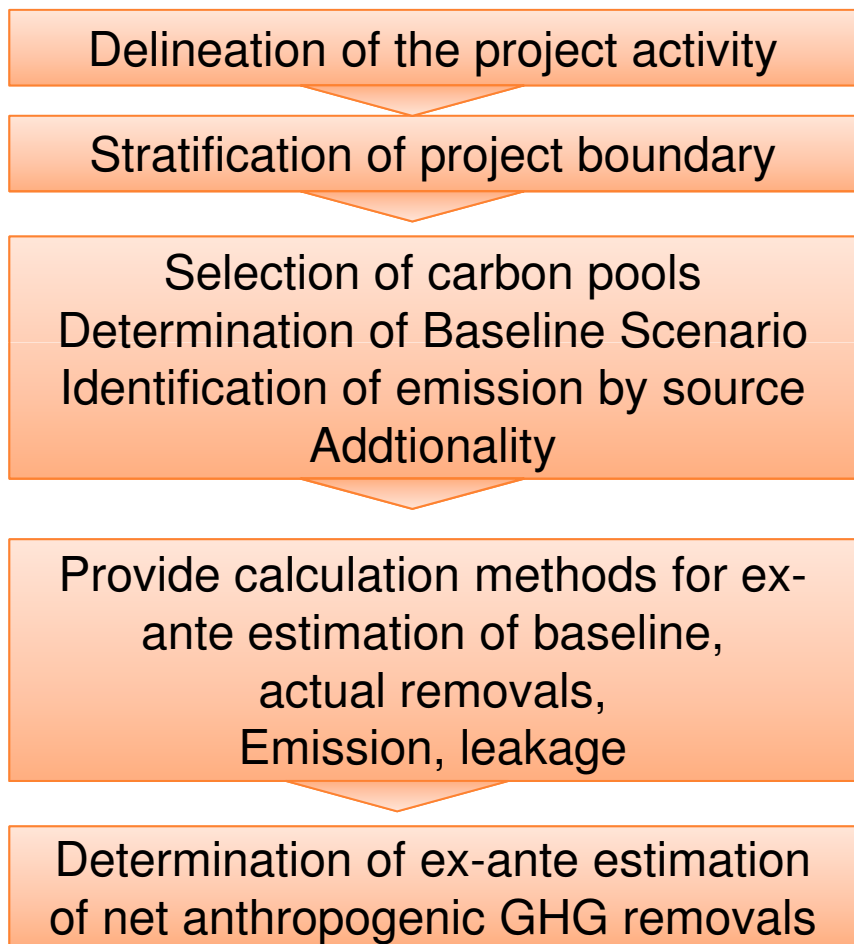
AR-AMS0001 Simplified baseline and monitoring methodologies for small-scale A/R CDM project activities implemented on grasslands or croplands with limited displacement of pre-project activities

3. A/R Methodology

Basic Concept



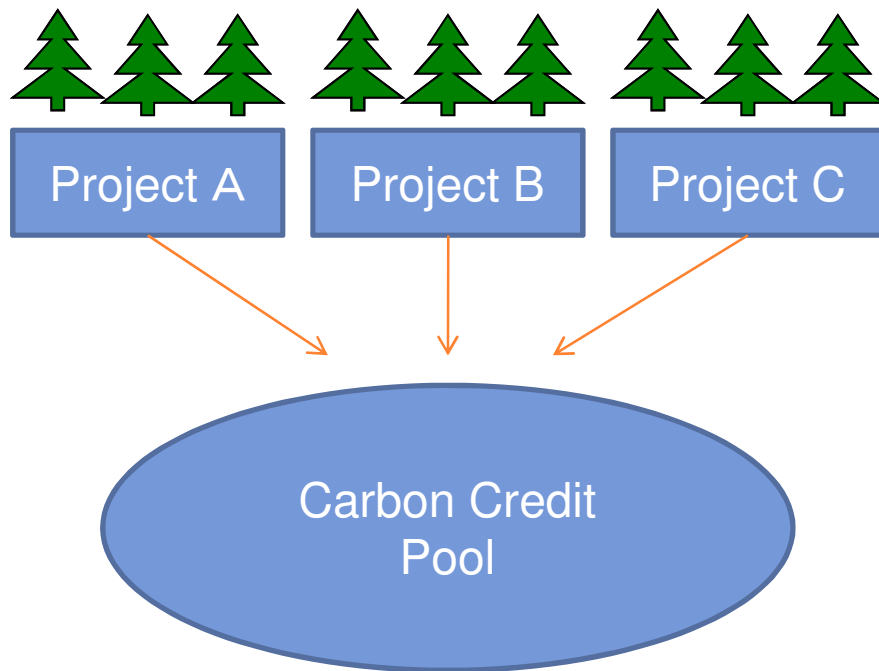
3. A/R Methodology Procedure



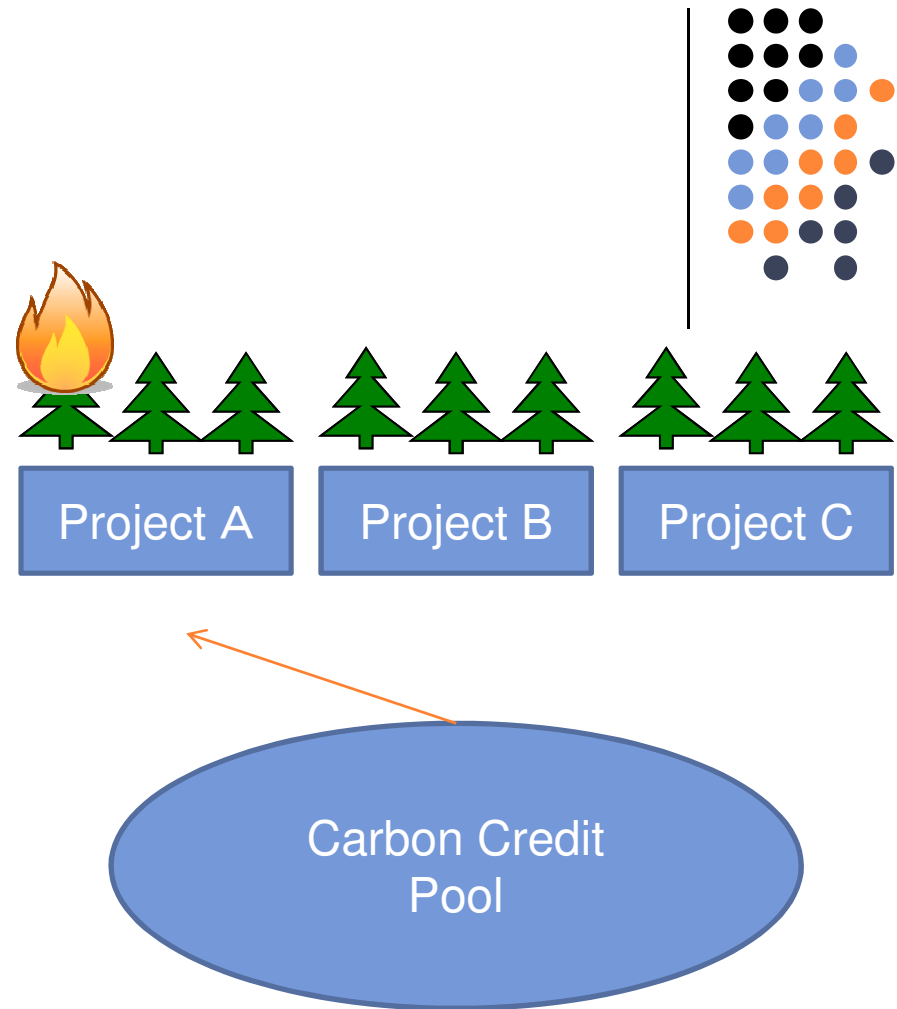


4. New Apporach

4. New Approach Credit pooling



Portion of the carbon credit from each project are pooled to a specific fund



If the CO₂ is emitted from one of the project the carbon credit from the pool could be utilized to offset the loss

As long the carbon credit pool is managed correctly, the carbon credit from these projects, could be treated as “permanent”.

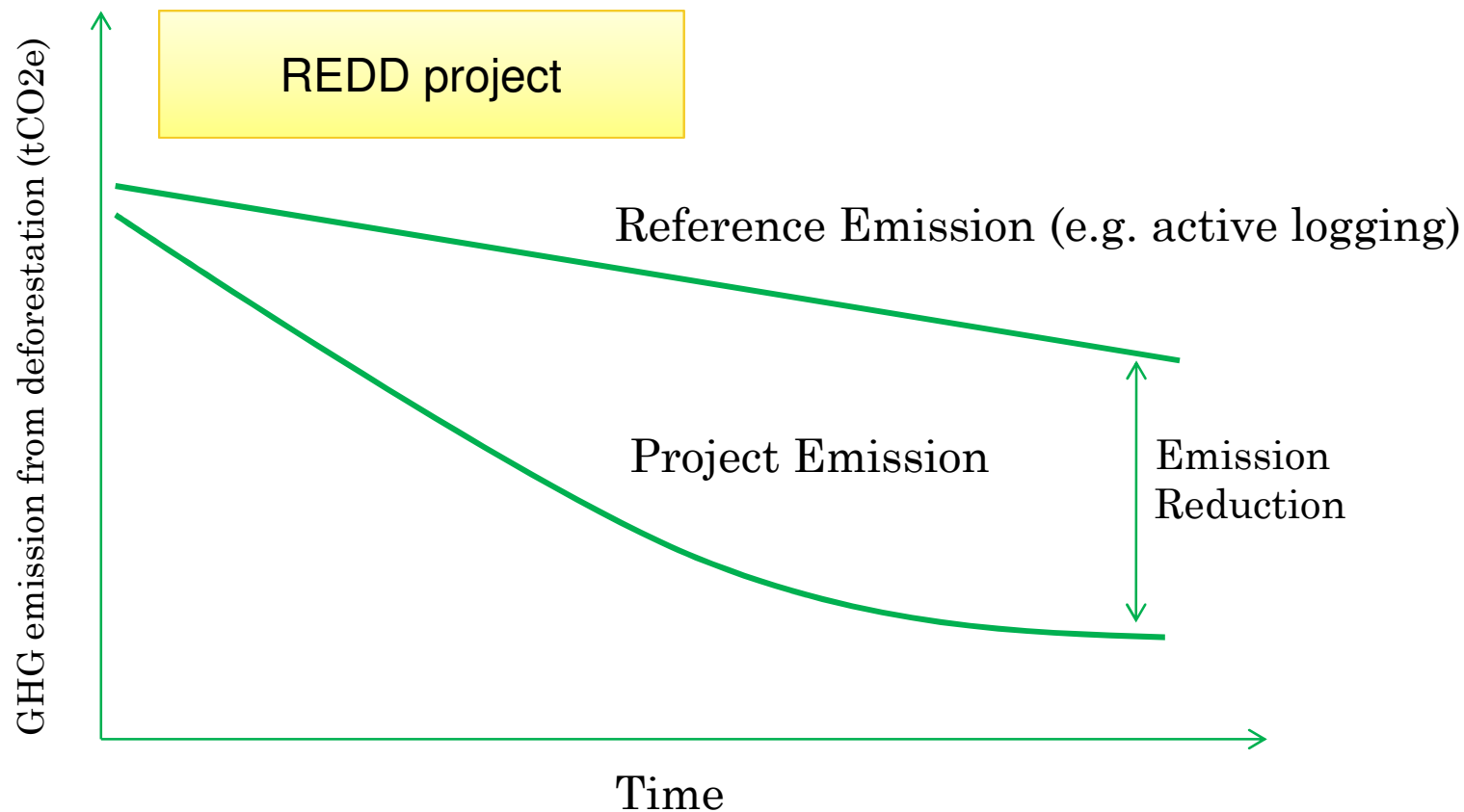
4. New Approach

REDD



REDD:

Reducing Emissions from Deforestation and forest Degradation

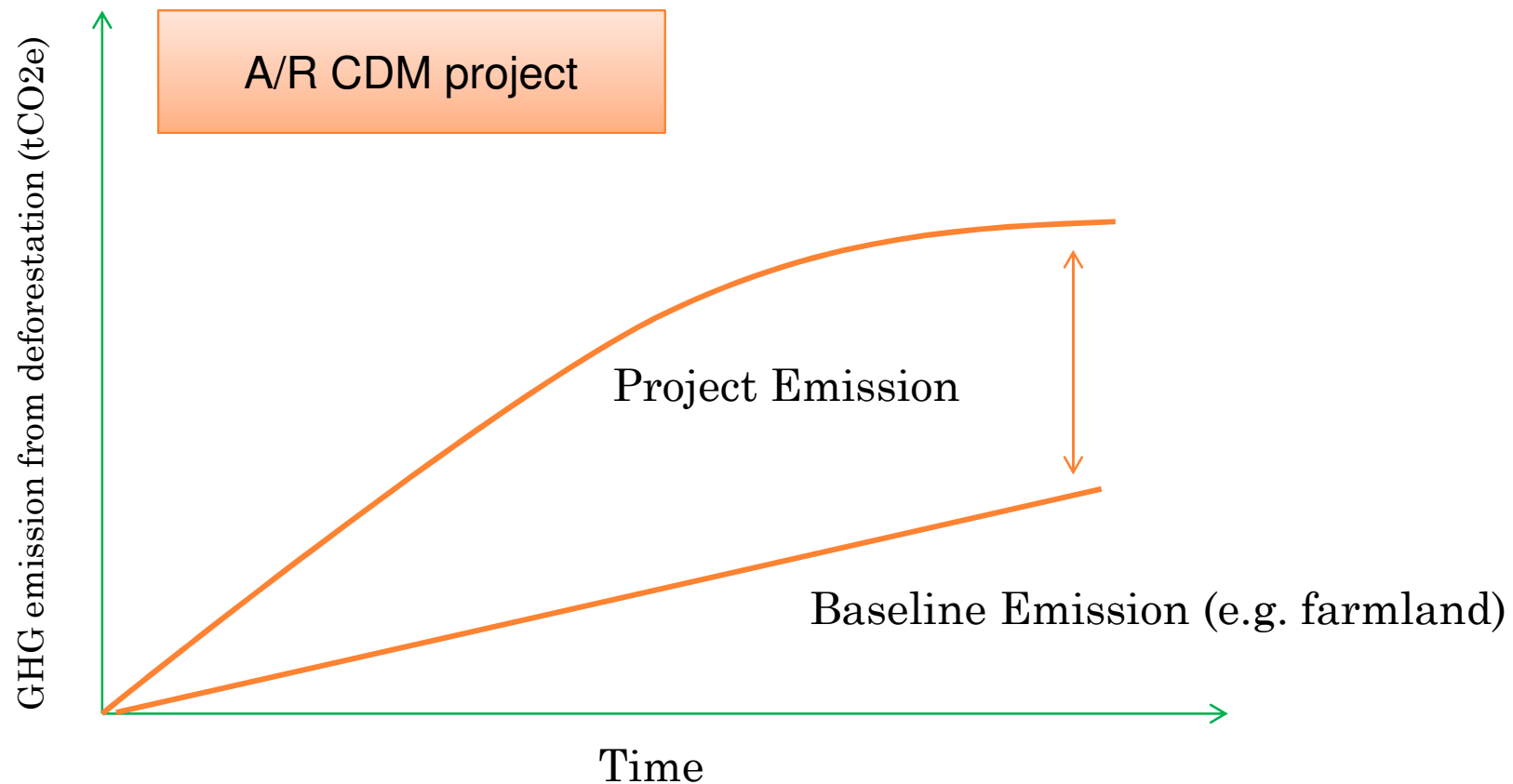


4. New Approach

REDD & A/R Comparison

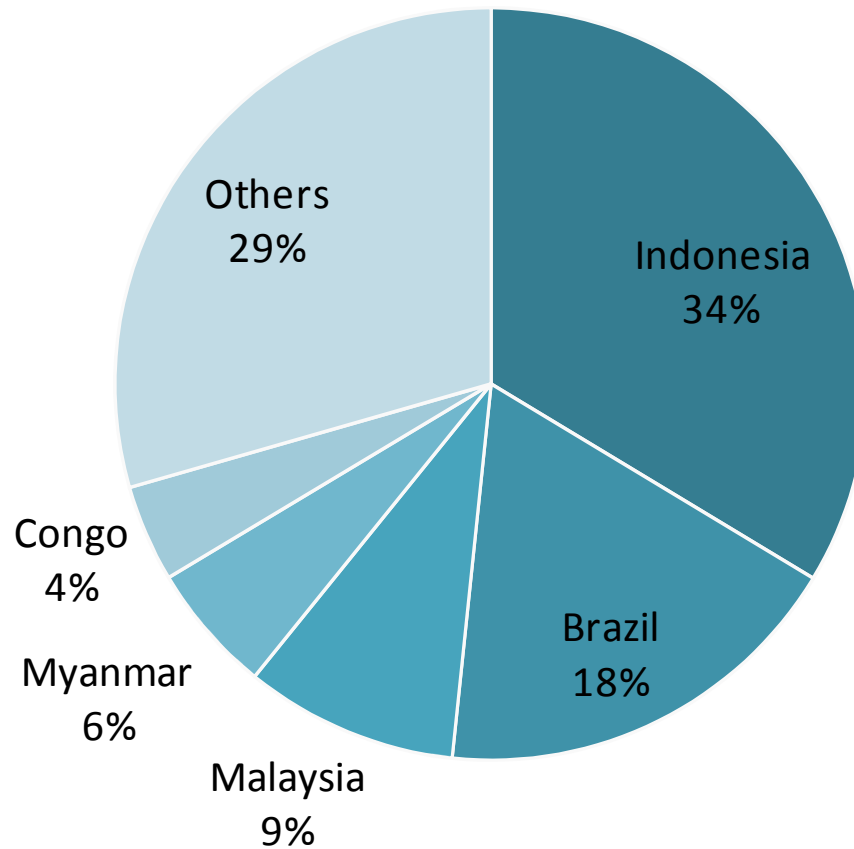


AR/CDM stocks carbon, where as REDD project avoids the GHG emission caused by the loss of forest cover.



4. New Approach

Countries which may benefit from REDD projects



IPCC Report states that emissions from deforestation accounts for 20% of global GHG emissions.

WRI, US based research organization, highlights that 34% of the GHG emission from Land Use and Land Use Change and Forestry (LULUCF) resulted from Indonesia followed by Brazil 18% in 2000.

4. New Approach

REDD, REDD+ and REDD++



Avoiding deforestation in one part of the land may cause increase in timber harvesting activities in another part of the land.
 By providing timber from a sustainably managed REDD+ site, it ensures sufficient quantity of timber will be supplied to the market.

REDD, REDD+ and REDD++ categorisation

REDD	DD	Deforestation
		Forest Degradation
REDD+	+	Reforestation
		Sustainable Forest Management
REDD++	Another+	Management of the buffer zones (social aspect)

Potential projects in Sri Lanka



- REDD+ and REDD++
- Sustainable forest management
- A/R projects may be beneficial, if it has significant social and/or environmental benefits such as watershed conservation and agroforestry.

