Fiji NFMS ER Calculation

R Code Explanation/Vignette

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# Introduction

* Explanation of structure of document
  + Scope
  + Code Reference
  + Input Parameters (from where)
  + Output/Requirement
* Emissions and removals are all estimated in tCO2e/yr
* Terminology / Acronyms (See file directory for starter of acronyms)
  + Naming Convention for code eg CalcNetEMFD
  + Emissions – represents the emissions to the atmosphere in tco2 due to deforestation and forestry activities.
  + Removals – represents the emissions removed from the atmosphere in tco2e due to forestry activities.
  + ERs – Emissions Reductions represent the difference between the baseline Forest Reference Level Values and the Annual Estimated Emissions and Removals from REDD+ activities. [HOLD]

# R Script Calculation

## REDD+ Activities Annual Estimations:

The REDD+ Activities note the contribution of emissions and removals from Deforestation, Forest Degradation and Enhancements.

### Deforestation

* **Scope**

Estimates emissions from deforestation from lowland and upland natural forest, excluding areas subject to logging, in Fiji.

* **Code Reference**
* **Input Parameters**
* **Output/Requirement**

### Forest Degradation

Emissions from degradation are estimated as the combination of the net emissions/removals from logging in Natural Forests and the emissions from Fire in Pine Plantations.

### Felling

* **Scope**

Emissions related to logging practices in natural forests

* **Code Reference**
* **Input Parameters**
* **Output/Requirement**

### Emissions from Fire

* **Scope**
* **Code Reference**
* **Input Parameters**
* **Output/Requirement**

### Enhancements

### Afforestation

* **Scope**
* **Code Reference**
* **Input Parameters**
* **Output/Requirement**

### Forest Plantations

1. Hardwood

* **Scope**
* **Code Reference**
* **Input Parameters**
* **Output/Requirement**

1. Softwood

* **Scope**
* **Code Reference**
* **Input Parameters**
* **Output/Requirement**

### Annual Net Emissions/Removals from REDD+ Activities

* Scope

This is the calculated value for the net emissions/removals from the REDD+ Activities

* Code Reference
* Input Parameters

(All above….)

* Output/Requirement

(Used to calculate ERs – see section 2.2)

## Emission Reductions

* **Scope**
* **Code Reference**
* **Input Parameters**

FRL

Annual Emissions and Removals

* **Output/Requirement**

## Outputs for Monitoring Report

Tables:

4.2 – Estimation of emissions by sources and removals by sinks included in the ER Program’s scope

4.3 – Calculation of Emission Reductions

5.2.2 – Quantification of the uncertainty of the estimate of Emission Reductions

7.2 – Quantification of Reversals during the Reporting Period

8 – Emission Reductions Available for Transfer to the Carbon Fund

# Discussion

## Drivers

### Values

### Values with Uncertainty

### Sensitivity Analysis

## Modification of Code

### Resulting from changes to Methodology

### Adoption of code for a new country context

* e.g a new country or a change in methodology for Fiji

## Testing & Unit Testing

* Seed
* Dummy input data from Fiji

# Packages

## Fiji NFMS Calculations

* Afforestation.R
* Burning.R
* CarbonConversion.R
* Constants.R
* Default\_Parameters.R
* Deforestation.R
* EmissionReductions.R
* ER\_Calculated\_Values.R
* Felling.R
* Fiji\_Constants\_from\_Reference\_Level.R
* Fiji\_Specific\_Parameters.R
* ForestPlantations.R
* FRL\_Calculated\_Values.R
* ReportTotals.R
* utils-pipe.R

## Value with Uncertainty

* gen\_sample.R
* init.R
* ops.R
* summary.R
* types.R
* utils.R
* utils-pipe.R
* ValuesWithUncertainty.R

## Monte Carlo Utils

* ASCBRMonteCarloSamples.R
* GenMonteCarloSamples.R
* PlotMonteCarloSamples.R
* StableMonteCarloSamples.R
* utils-pipe.R

## FCPF Monitoring Report Tables

* TableCreationFunctions.R