

GHG Emission Reduction calculation guidance note



DATE November 12, 2015
PLACE Washington, D.C.
VENUE CIF Trust Fund Committees Meetings





FIP MONITORING AND REPORTING



“The ultimate impact of the FIP is with regard to long term changes to forest landscapes and ecosystems.

FIP intends to contribute, in a long-term, transformative manner to “reduced GHG emissions from deforestation and forest degradation; enhancement of forest carbon stocks” - FIP Results Framework



CONTEXT ON FIP PROJECTS AND M&R



GHG Emission Reductions should be reported as part of Theme 1.1. There are other five indicators not linked to GHG ER that have to be reported.

CATEGORY 1: COMMON THEMES

 **THEME 1.1: GHG EMISSION REDUCTIONS OR AVOIDANCE / ENHANCEMENT OF CARBON STOCK**

THEME 1.2: LIVELIHOOD CO-BENEFITS

CATEGORY 2: OTHER RELEVANT CO-BENEFIT THEMES

Theme 2.1: Biodiversity and other environmental services

Theme 2.2: Governance

Theme 2.3: Tenure, rights and access

Theme 2.4: Capacity development

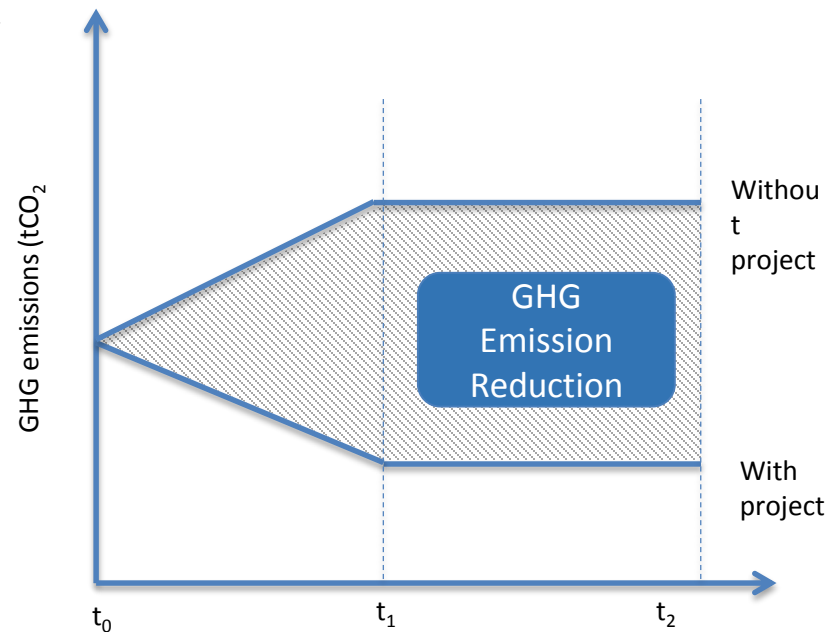
CATEGORY 3: ELEMENTS FOR NARRATIVE (IF IT APPLIES TO THE INVESTMENT)



THEME 1.1 : GHG EMISSION REDUCTIONS OR AVOIDANCE / ENHANCEMENT OF CARBON STOCKS



“Indicators will estimate the climate change mitigation potential of country actions as estimated quantities of avoided or reduced GHG emissions and removals or increase in carbon stocks that the implementation of the investment plan is able to achieve directly through its associated investments”. FIP M&R toolkit





FIP REPORTING REQUIREMENTS FOR THEME 1.1



THEME 1.1 : GHG EMISSION REDUCTIONS OR AVOIDANCE / ENHANCEMENT OF CARBON STOCKS

<Country>		Lead MDB:		Level: Investment Plan (IP)				
Other Implementing MDBs:		Endorsed FIP funding (million USD):						
Co-financing (million USD):		Reporting period		From	mm/dd/yy	:	To:	mm/dd/yy
Table 1.1	Unit	Reference emissions level/baseline	Target 1	Target 2	Report year 2014	Report year 2015	Report year 2016	Total actual to date
		(if applicable)	<i>(Expected results after the financial closure of the last project/program under the investment plan)</i>	<i>(Lifetime projection of expected results of projects/programs under the investment plan)</i>	Actual annual	Actual annual	Actual annual	
GHG emission reductions/avoidance/enhancement of carbon stock (Total) ⁸	Million tons of CO2 equivalent							
GHG emissions from reduced/avoided deforestation and forest degradation	Million tons of CO2 equivalent							
GHG sequestered through natural regeneration, re- and afforestation, and other related activities	Million tons of CO2 equivalent							
Type of forest(s)								
Area covered	ha							
IP lifetime	years							
Please specify methodology (ies) used for GHG accounting (e.g. by project/program), including the start year and period for the Reference Emissions Level								
Please provide a brief description of the interventions (context and objective)								
1. What have been key contributions (successes) of FIP regarding GHG emission reductions / avoidance / enhancement of carbon stock in your country context during this reporting year?								
2. What have been your key challenges and what opportunities for improvement do you see?								



GHG ER ASSESSMENT CHALLENGE



- FIP projects are very diverse. GHG ER methodologies have to adjust to this diversity of approaches.
- MRV systems offer data based on national systems. It is difficult to make assessments with this data on a project basis.

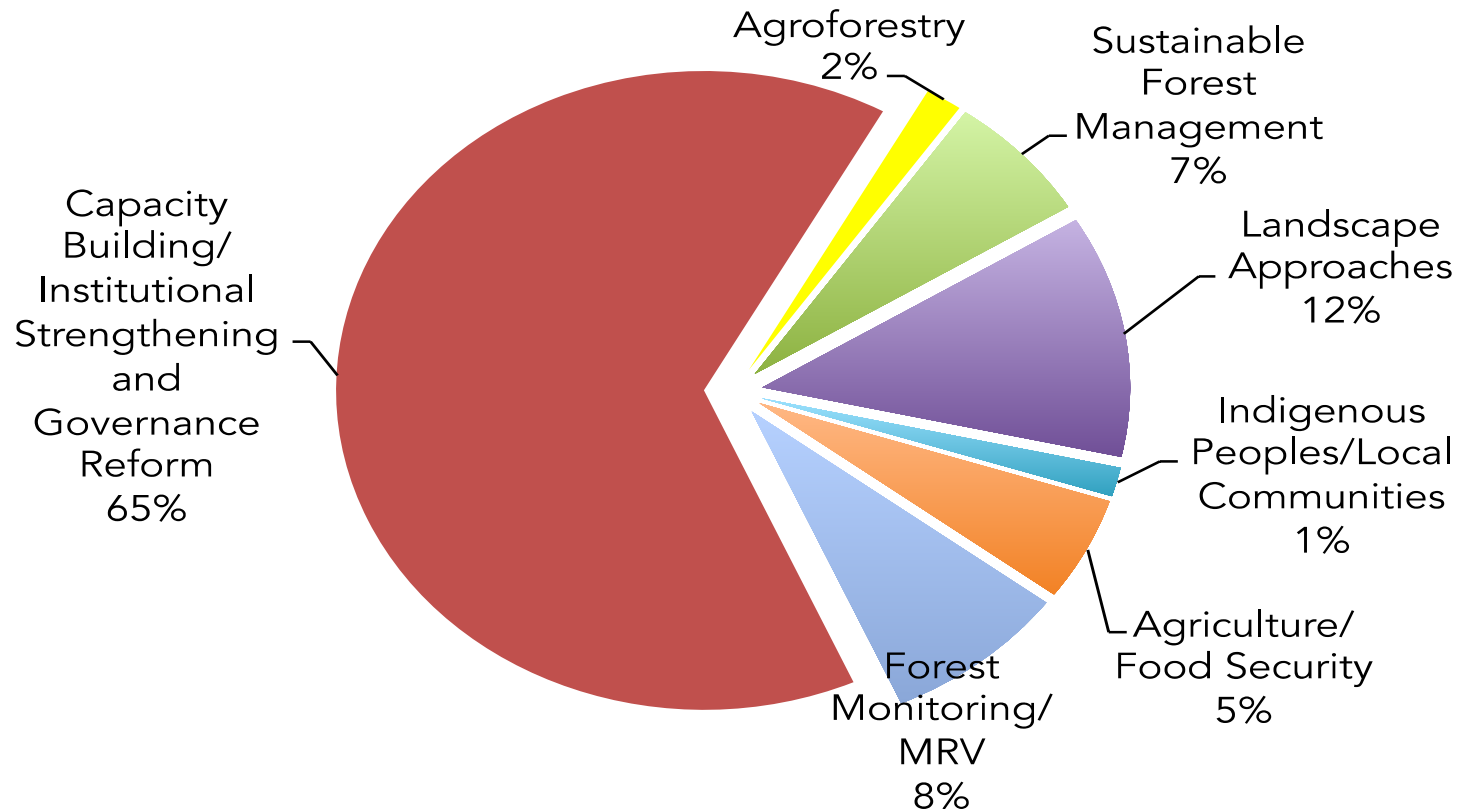


GHG ER ASSESSMENT CHALLENGE



High diversity of project characteristics/sectoral focus.

FIP MDB-approved Funding by Sectoral Focus
(USD 203.85 million total as of December 31, 2014)





GHG ER ASSESSMENT CHALLENGE



Challenge:

Different accounting methodologies used.
Data cannot be compared or aggregated.

- It is not possible to know FIP global impact
- It is not possible to compare one country's targets with another. Even in some cases, under one Investment Plan, it is not possible to aggregate/compare one MDB project performance with another.



CHALLENGES FOUND WITH GHG ACCOUNTING





REFERENCE EMISSION LEVEL/BASELINE



Submitted GHG baselines:

FIP pilot country	Investment plan/project	MDB	Baseline (M tCO ₂ e)
Burkina Faso	Investment Plan		-50.7
	<i>Decentralized forest and woodland management project (PGDDF)</i>	IBRD	-48.33
	<i>Gazetted forests participatory management project for REDD+ (PGFC/REDD+)</i>	AFDB	-2.35
DRC	Investment Plan		-2.15
	<i>Integrated REDD+ project in the Mbuji Mayi/Kananga and Kisangani basins</i>	AFDB	- 0.29
	<i>Improved Forested Landscape Management</i>	IBRD	-1.86
Lao PDR	<i>Smallholder Forestry Project (Technical Assistance)</i>	IFC	0.00
Mexico	Investment Plan		22.07



REFERENCE EMISSION LEVEL/BASELINE



Methods for calculating the REL/Baseline:

1. Amount of GHG that would have been emitted if there had been no FIP investment.

Burkina Faso

DRC

Example: Burkina Faso, AFDB project.

2013	2014	2015	2016	2017	2018
55,368,244	54,896,047	54,425,103	53,955,407	53,486,952	53,019,732



Baseline
 $C\ stock_{2018} - C\ stock_{2013} =$
-2.35 MtCO_{2e}

2. Historical average of annual emissions

Mexico

Average emissions from deforestation, degradation and forest fires for Oaxaca, Jalisco, Campeche, Q. Roo, Yucatan for the 2000-2010. Mexico's baseline, **22.07 MtCO_{2e}**



GHG EMISSION REDUCTION (ER) TARGETS



FIP pilot country	Investment plan/project	MDB	Target 1 (M tCO ₂ e)	Target 2 (M tCO ₂ e)
Brazil	Investment Plan		7,779,840 (ha)	
Burkina Faso	Investment Plan		4.1	13.8 (15 years)
	<i>Decentralized forest and woodland management project (PGDDF)</i>	IBRD	3.5	11.1 (15 years)
	<i>Gazetted forests participatory management project for REDD+ (PGFC/REDD+)</i>	AFDB	0.6	2.7 (15 years)
DRC	Investment Plan		4.2	18.07 (30 years)
	<i>Integrated REDD+ project in the Mbuji Mayi/Kananga and Kisangani basins</i>	AFDB	0.95	4.00 (25 years)
	<i>Improved Forested Landscape Management</i>	IBRD	3.25	16.1 (15 years)
Ghana	<i>Engaging Local Communities in REDD+/Enhancing Carbon Stocks</i>	AFDB		3.9 (25 years)
Lao PDR	Investment Plan		0.89	
	<i>SUFORD-SU</i>	ADB	0.135	
	<i>Smallholder Forestry Project (Technical Assistance)</i>	IFC	0.755	
Mexico	Investment Plan		2.21	



GHG ER TARGETS



Countries that submitted results reports	Target 1 – project implementation (M tCO ₂ e)	Target 2 – intervention lifetime (M tCO ₂ e)
Brazil	7,779,840 (ha)	
Burkina Faso	4.1	13.8
DRC	4.2	18.07
Ghana	0.5	3.9
Lao PDR	0.89	
Mexico	2.21	

GHG ER calculated as **sum of project targets**. Targets are based on **project activities**.

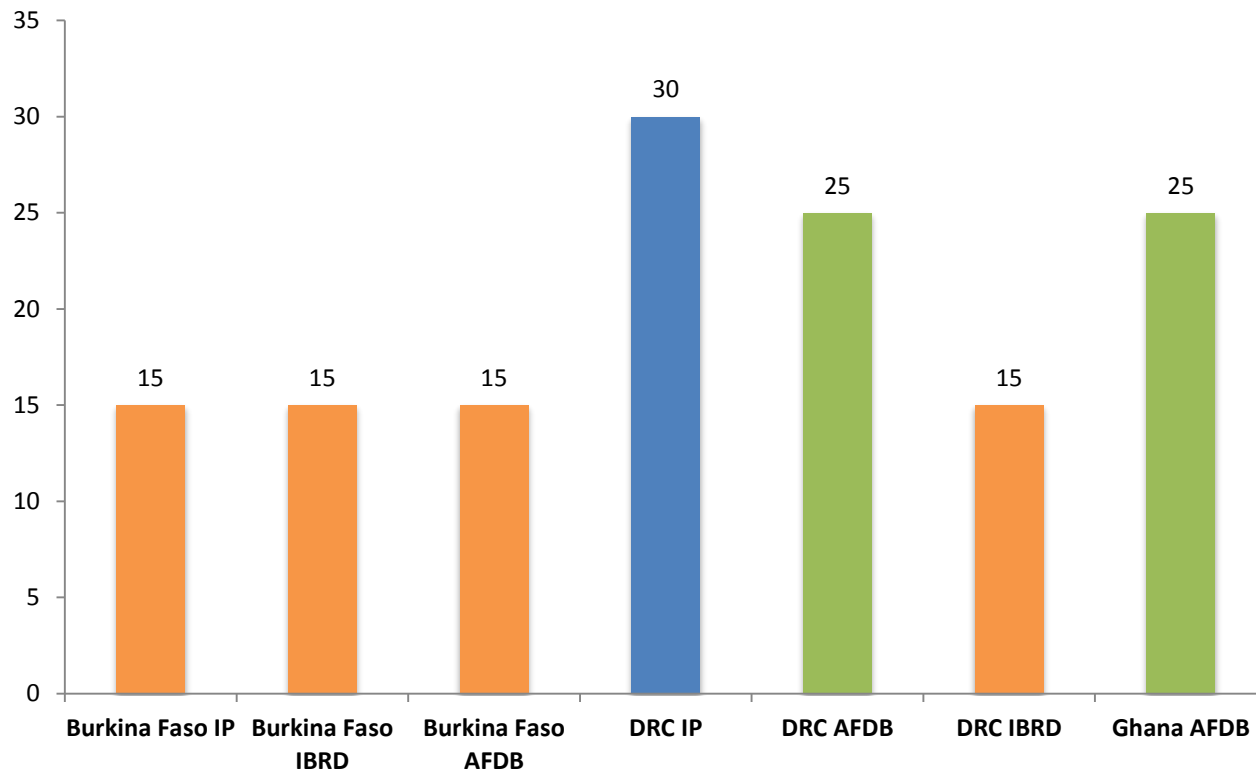
Mexico is the only country to set GHG ER target at the **IP level**, and as a **% of the baseline**.



GHG ER TARGETS – TARGET 2. NUMBER OF YEARS



Number of years considered for Target 2 in the FIP results sheets





GHG ER TARGETS – CONSERVATIVE FACTOR



FIP pilot country	Investment plan/project	MDB	Use of conservative factor?	Conservative factor
Brazil	Investment Plan		✗	
Burkina Faso	Investment Plan			
	<i>Decentralized forest and woodland management project (PGDDF)</i>	IBRD	✗	
	<i>Gazetted forests participatory management project for REDD+ (PGFC/REDD+)</i>	AFDB	✓	40%
DRC	Investment Plan			
	<i>Integrated REDD+ project in the Mbuji Mayi/Kananga and Kisangani basins</i>	AFDB	✓	30%
	<i>Improved Forested Landscape Management</i>	IBRD	✗	
Ghana	<i>Engaging Local Communities in REDD+/Enhancing Carbon Stocks</i>	AFDB	✓	25%
Lao PDR	Investment Plan		✗	
	<i>SUFORD-SU</i>	ADB	✗	
	<i>Smallholder Forestry Project (Technical Assistance)</i>	IFC	✗	
Mexico	Investment Plan		✗	



GHG ER TARGETS – CARBON STOCK RATES



Carbon stock rates, deforestation rates and degradation rates used by IBRD and AFDB are different for projects taking place in the same or nearby area.

Burkina Faso

tCO ₂ /ha	IBRD project - Burkina Faso	AFDB project - Burkina Faso	Difference (%)
Forest	198	194.33	1.85
Shrubland	128.33		
Grassland	36.67	12.85	64.95
Crops	84.33	18.35	78.24



GHG ER TARGETS – CARBON STOCK RATES



Burkina Faso - Deforestation rate

	IBRD project - Burkina Faso		Difference in deforestation	AFDB project - Burkina Faso		Difference in deforestation
	without project	with project (after 5 years)		without project	with project (after 5 years)	
%	2	0.8	1.2	0.5	0.25	0.25

Burkina Faso - Degradation rate

	IBRD project - Burkina Faso		Difference in degradation	AFDB project - Burkina Faso		Difference in degradation
	without project	with project (after 5 years)		without project	with project (after 5 years)	
%	5	3	2	0.4	0.2	0.2



GHG ER TARGETS – CARBON STOCK RATES



DRC - Carbon stock rates

tCO ₂ /ha	IBRD project - DRC	AFDB project - DRC	Difference (%)
Primary forest	1059.7	400	62.29
Secondary forest	354.93	400	12.69

Ghana - Carbon stock rates

tCO ₂ /ha	IBRD project - Ghana	AFDB project - Ghana	Difference (%)
Plantation		9.6	
Set aside land		18.35	
Shade cocoa plantation		291.6	
Low-Shade cocoa plantation		201.85	
Forest		360	
Closed Forest in the HFZ	568	360	-36.62
Open Forest in the HFZ	319	360	12.85
Cropland in the HFZ	54	360	566.67



GHG (ER) TARGETS – CARBON POOLS CONSIDERED



Projects	Carbon pools considered				
	Aboveground	Belowground	Deadwood	Litter	Soil
Burkina Faso-IBRD	✓	✗	✗	✗	✗
Burkina Faso-AfDB	✓	✗	✗	✗	✗
DRC - IBRD	✓	✗	✗	✗	✗
DRC-AfDB	✓	✗	✗	✗	✗
Ghana -IBRD	✓	✓	✗	✗	✗
Ghana-AfDB	✓	✓	✗	✗	✗
Indonesia-ADB	✓	✓	✗	✗	✗
Lao-ADB	✓	✓	✗	✗	✗



RECOMMENDATIONS





RECOMMENDATIONS



- Same timeframe should be used for GHG ER calculations.
 - Suggested: 30 years. Exceptions could be made for private sector projects.
 - Targets reported on results sheets should be for the same timeframe on all FIP projects in the same country.
- Same carbon stock, and deforestation data for same regions in a country should be used by all MDBs.



RECOMMENDATIONS



- Discount factors should be used only whenever necessary following a recognized methodology.
- Leakage estimations should be included in calculations, whenever relevant.



RECOMMENDATIONS



- Use existing calculation tools:
EX-ACT **FORESTCAT**

The EX-Ante Carbon-balance tool (EX-ACT) - Standard Edition

Start Description Land Use Change Crop production Grassland Livestock Land degradation Inputs Investments Detailed Results

EASYPol
Online resource materials for policy-making

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

The EX-Ante Carbon-balance Tool (EX-ACT)

Version 5.2 - Standard Edition

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ForestCAT

WORLD BANK GROUP

Consolidated Carbon Assessment Tool for Afforestation and Reforestation + Sustainable Forest Management Projects

Version : 1.0 Date 31-Aug-15

Instructions for Tool

- The timeframe considered for assessment is 30 years.
- The starting year of the project coincides with the earliest start date of all project strata.
- Each project might consist of AR, SFM or AR+SFM activities. The GHG balance of activities is calculated by comparing project vs. baseline scenario.
- GHG balances in SFM activities are calculated by comparing the same stratum in project vs. baseline scenario. For the calculation of GHG balances in AR projects, the user can define multiple project strata for a single baseline stratum.
- If an AR project activity is implemented considering a mix of species, then each species will be represented in a unique project stratum with an area proportional to the occurrence of species in the proposed mix.
- When working on Input tabs the user should read the instructions / questions on the left of the input cells. Required fields / data entries are explained and additional guidance is provided.
- The input of project-specific data will generate more accurate results in comparison to selection of default values.
- The "?" indicates that user has to make a relevant selection for the tool to conclude the calculation.
- The red highlighted cells indicate non-viable selection and user must change the selection to a relevant option.

Procedure

Step 1 Complete the information about project on this tab - 1_Main_Page.

Step 2 Please include data for baseline and project strata for AR and SFM projects on the Tabs: 2_BSL_AR_3_Project_AR_4_BSL_SFM & 5_Project_SFM.

Step 3 Check for final GHG numbers in the Tab: 7_Output.

Step 4 Compare different baseline and project scenarios in the Tab: Comparative Analysis.

Warning: The screen display settings may impact the visual quality of tool. Avoid resolution lower than 1280 X 800

Project Name

Country

World Region

Climate

Type of Project

(The excel tabs and the number of strata in each project type are dependent on the choices made on this tab of excel)

Please specify the number of strata

BSLAR	<input type="text" value="3"/>
Project AR	<input type="text" value="4"/>
BSL SFM	<input type="text" value="4"/>
Project SFM	<input type="text" value="4"/>

Entered Values by user
Fetched Default Values
Drop-down Selections
Calculated Values
Error - please check input



RECOMMENDATIONS



- Technical assistance on GHG accounting, especially for new FIP pilot countries should be delivered. Could be combined with FIP M&R training workshops
- Consultations will be held with FIP pilot countries and MDBs
- Agreement should be reached on a minimum proxy
- A roadmap should be developed to harmonize GHG accounting



THANKS
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MERC**i**
M**E**RC**i**

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