

Tom Wirth

U.S. Environmental Protection Agency

January 25, 2010

EPA GHG Inventory Capacity Building Framework: Goals and Tools

Training workshop on national systems for GHG inventories

24-28 January 2011, Rome



Coalition for Rainforest Nations



giz

UN-REDD
PROGRAMME



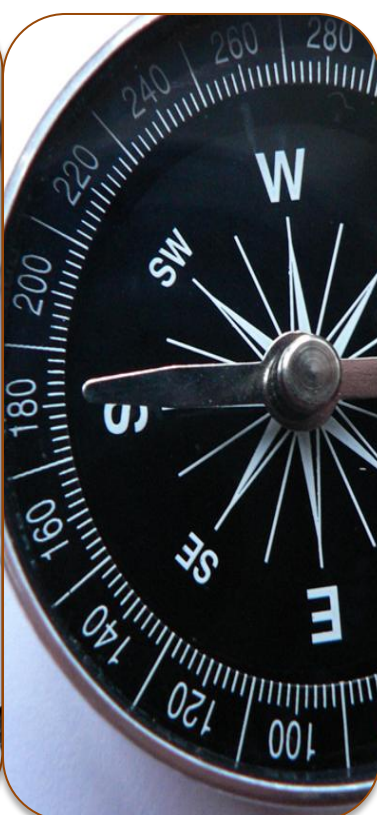
Outline of Presentation



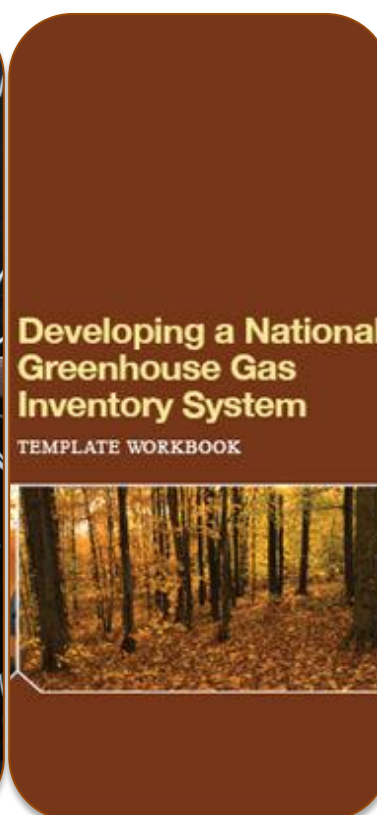
Background
on EPA
Capacity
Building and
Projects



Challenges and
Lessons
Learned from
Implementing
GHG Projects



Key Components
& Guiding
Principles of a
Capacity Building
Program



Tools:
Template
Workbook and
ALU GHG
Inventory Tool



Looking
Forward at EPA
GHG Capacity
Building Efforts

Capacity Building Efforts to Date



Central America: Regional GHG inventory improvement project with U.S. AID (completed phase I, 2004-2007), phase II (2007-2010)



South East Asia: Regional GHG inventory improvement project in collaboration with UNFCCC, US AID, Japan and other regional experts, (phase I 2008-2010, phase II 2010-2012)

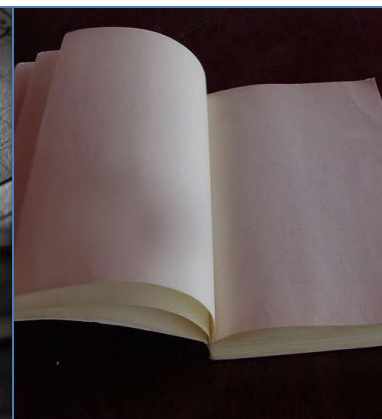
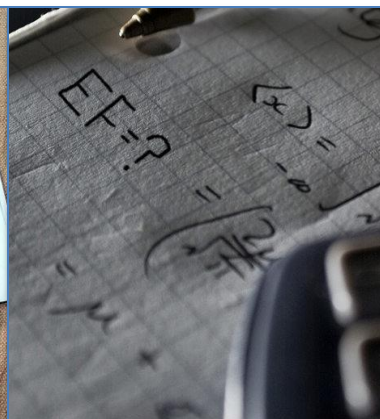
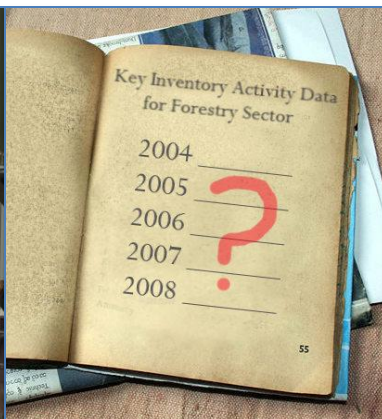


China: Initiated cooperative activities with NDRC, includes translation of existing tools and use in provinces



Eastern and Southern Africa: Initiated regional GHG inventory improvement project in collaboration with UNFCCC, USAID, GIZ, and Canada. Scoping meeting and Project Document completed

Challenges for Establishing National Inventory Systems and Inventory Compilation in NA-I Countries



Small teams with limited resources and multiple responsibilities

Incomplete or non-existent activity data

Lack of country-specific emission and stock change factors

Insufficient documentation from previous inventories

Difficulty retaining expertise

A Simple Approach to GHG Inventory Capacity Building

- Develop a **complete Tier 1/2 Agriculture and LULUCF Inventory**
 - Completing a well-documented TACCC inventory
 - Provides a solid foundation to build on for the future
- Focus on **two key activities:**
 1. Improve the **institutional capacity** of a country to establish a **sustainable inventory system**
 2. Providing **technical assistance** on method activity data collection and documentation



Model for a GHG Inventory Capacity Building Project



Scoping Meeting

Meet with countries & through a participative approach **determine objectives**



Select Project Team

Select team members based on objectives; **Regional Coordinator** selection is key!



Kick-off Workshop

Countries present current inventories; review methodologies; and **identify AD gaps**



In-country Workshops

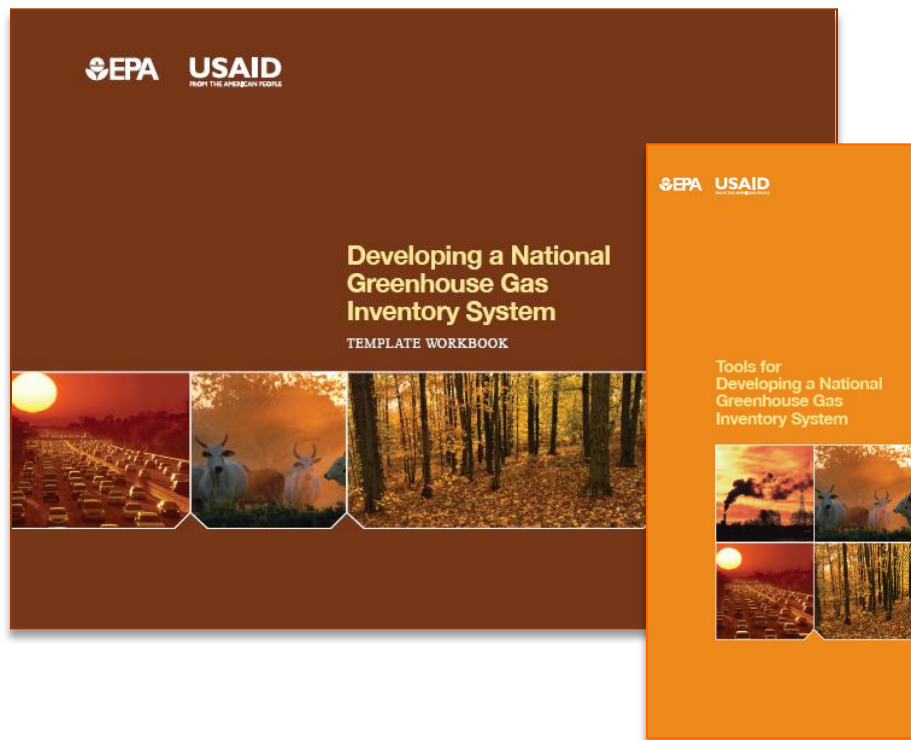
Assist with assembling AD; **produce inventory** and document the process/result



Wrap-up Meeting

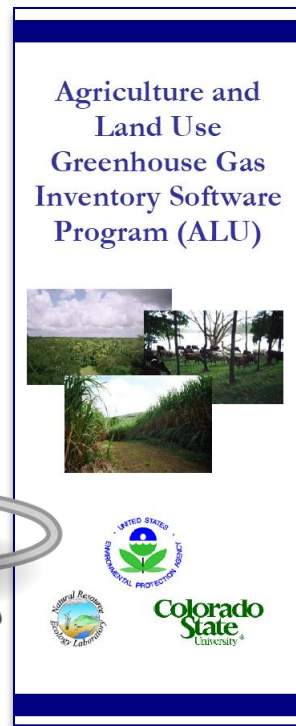
Countries **present improved inventories** and discuss next steps

GHG Inventory Capacity Building Tools



National System Templates

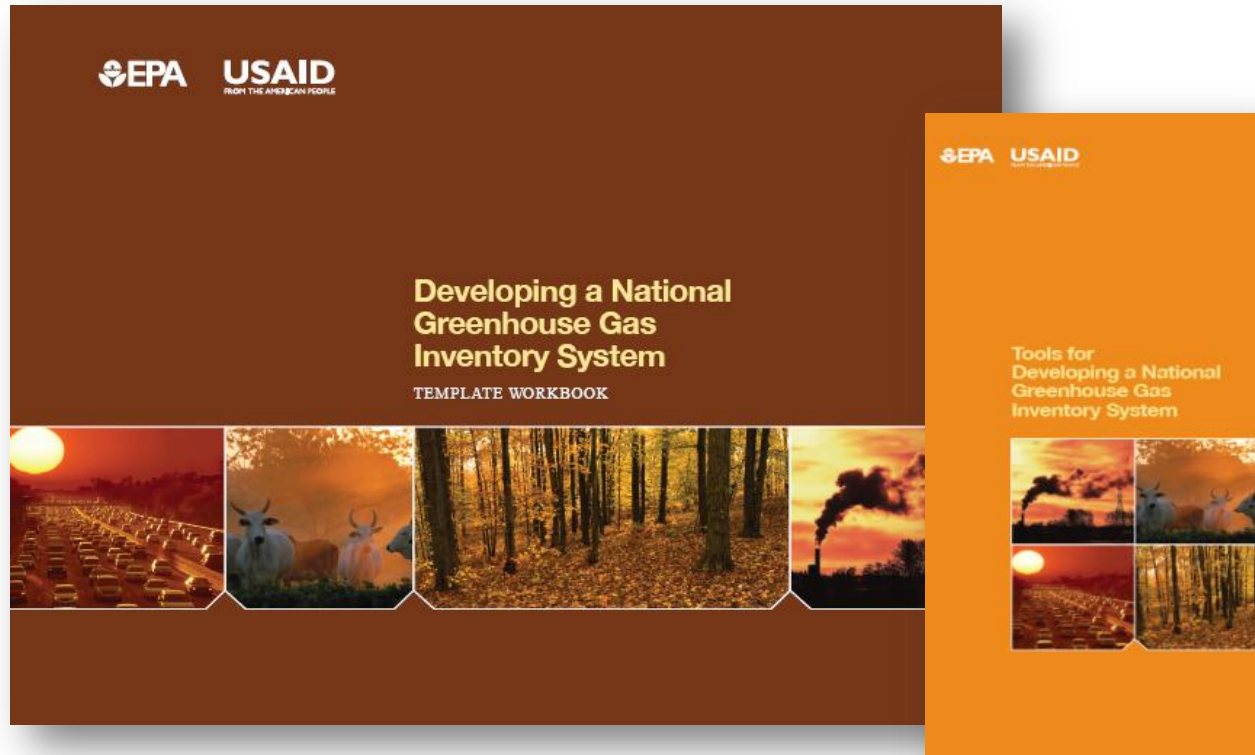
Helps to document, institutionalize and streamline the inventory management process



Agriculture and Land Use (ALU) Tool

Helps to compile AD, perform

We have taken key elements of the IPCC and UNFCCC guidance and condensed them



...into an easy-to-use
National Template Workbook

- ***The Template Workbook is organized into six sections***

Institutional Arrangements



Source-by-Source Background Document



QA/QC Procedures



Archiving System



Key Category Analysis



National Inventory Improvement Plan

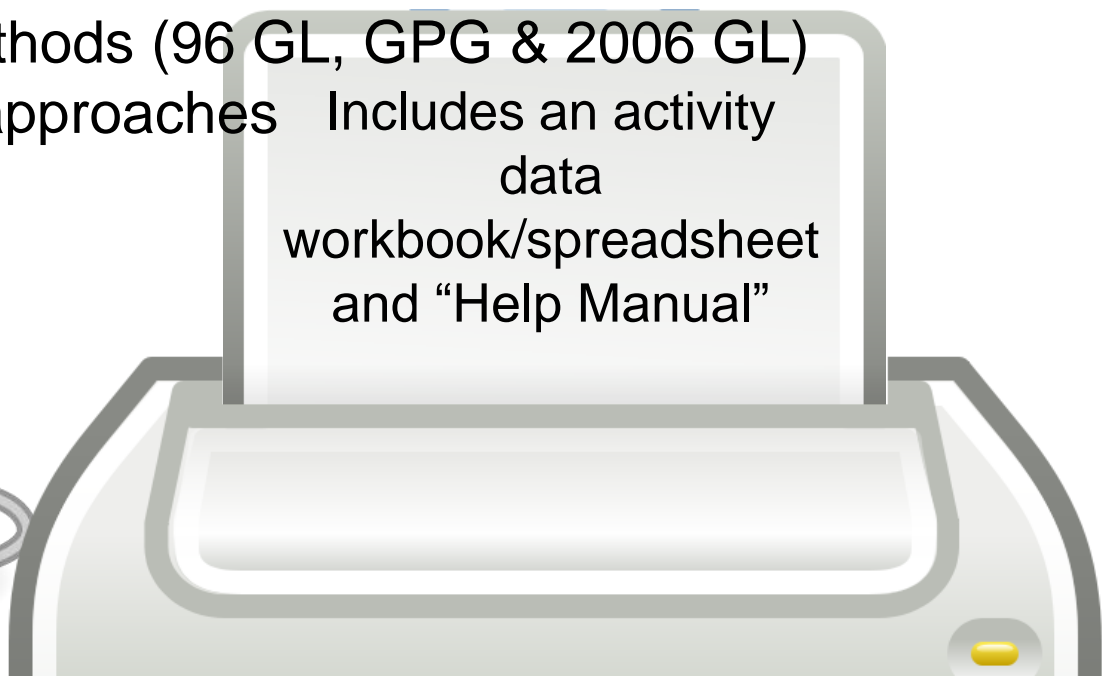


- ***When completed it can be compiled into your Inventory Report***

Agriculture and Land Use (ALU) *Greenhouse Gas Inventory Software*

- Estimates emissions and removals for Agriculture and LULUCF
- User-interface guides the compiler through the inventory process
- Produces emission reports and archives data inputs and calculations

- Based on IPCC methods (96 GL, GPG & 2006 GL)
- IPCC Tier 1 and 2 approaches Includes an activity data workbook/spreadsheet and “Help Manual”



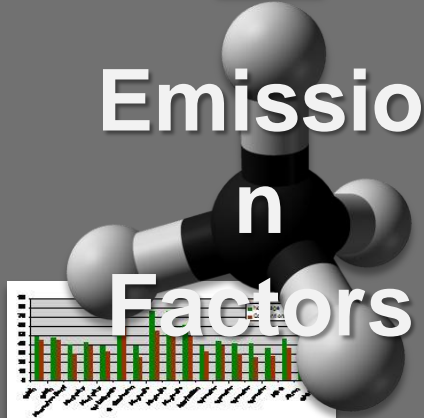
Geographic Information Systems



Management Activity Data



Emission Factors



*Land Use/
Cover
Soils
and
Climate*

*National
Agriculture
and
Forestry
Statistics*

*IPCC
Defaults
or
Country-
Specific*

ALU Inventory Software



N28								
A	B	C	D	E	F	G	H	I
1	This spreadsheet contains sheet 1 of Worksheet 5-2, in accordance with the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.							
2								
3								
4								
5	MODULE	LAND-USE CHANGE AND FORESTRY						
6	SUBMODULE	FOREST AND GRASSLAND CONVERSION - CO ₂ FROM BIOMASS						
7	WORKSHEET	5-2						
8	SHEET	1 OF 5 BIOMASS CLEARED						
9	SESSION	example						
10	YEAR	2000						
11								
12		STEP 1						
13		A	B	C	D	E		
14		Vegetation types	Area Converted Annually (kha)	Biomass Before Conversion (t dm/ha)	Biomass After Conversion (t dm/ha)	Net Change in Biomass Density (t dm/ha)	Annual Loss of Biomass (kt dm)	
15						D = (B - C)	E = (A x D)	
16		Tropical Moist, Short Dry Season forest - Deforestation	1717.219	20	8	12	20606.628	
17		Tropical Moist, Short Dry Season forest - Shifting Cultivation	10.191	5	0	5	50.955	
18		Subtotals	1727.41				20657.583	
19								
20								
21	Documentation box:							
22	Grassland is not included here because Approach 2/3 land use data are required in ALU for reporting stock changes.							
23	for grassland conversion (if applicable).							
24	Annual Loss of Biomass includes above-ground and below-ground woody biomass and herbaceous biomass loss through deforestation, shifting cultivation, and conversion of grassland.							
25	Column C is zero for shifting cultivation because it is assumed that all biomass is removed.							
26								
27								
28								

Generates detailed reports

ALU Tool (Version 2.1.1.0)

File Help



Agriculture and Land Use National Greenhouse Gas Inventory Software






Current User and Database

User: **test** Add / Change User

Database: **example I** Create New / Change Database

Available Sessions by Source Category:

Source Category: Biomass C Stocks

Subsource Category: Deforestation Reset

Current Sessions:

Session Name	Year	Go To:
example	2000	Complete

Go To Next Data Entry

Module I: Specify Activity Data

Primary Data Specification

- Land Use and Management
- Livestock
- N Fertilizer
- Liming
- Sewage Sludge Amendments

Select

QA/QC Primary Data

Secondary Data Specification

- Crop Residue Management
- Livestock Management
- Rice Management
- Savanna/Grassland Burning
- Biomass Carbon Loss

Select

QA/QC Secondary Data

Module II: Specify Emission/Stock Change Factors

- Enteric Methane
- Manure Methane
- Manure Nitrous Oxide
- Biomass Burning Non-CO2 GHG
- Soil Nitrous Oxide
- Rice Methane
- Biomass C Stocks
- Soil C Stocks

Select

QA/QC Emission/Stock Change Factors

Module III: Inventory Calculations QA/QC

- Enteric Methane
- Manure Methane
- Manure Nitrous Oxide
- Biomass Burning Non-CO2 GHG
- Soil Nitrous Oxide
- Rice Methane
- Biomass C Stocks
- Soil C Stocks

Select

Data Management Utilities

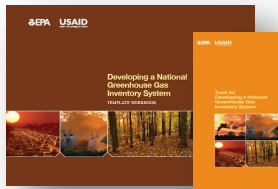
Quit Application Session Status Session & File Management

Emissions Reports




EPA Efforts Looking Forward

Template Workbook Revisions



- Improve organization
- Provide more example data
- More in-country support
- Add mitigation & uncertainty modules
- Develop quick-start manual
- Improve web support
- Update AD workbooks

ALU Software Improvements



- Training courses
- Update land use RS imagery

Assistance with Developing Land-Use Maps and AD



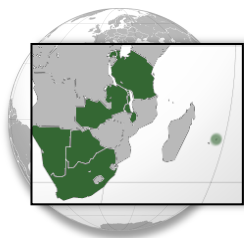
- Develop land use maps
- Source category experts
- Land-use maps & AD collection
- Complete GHG Inventories
- Support mitigation assessments

Southeast Asia Phase II



- Scoping meeting in September 2010
- Kick off meeting in March
- Assess availability of land use maps—support development as needed

Eastern and Southern Africa



- Support AD collection with on-site support



Explore new regions, improve our tools and seek out

opportunities to assist with GHG

capacity building

Any Questions?



Tom Wirth

wirth.tom@epa.gov

v

+1. 202.343.9313

U.S. EPA Inventory Preparation Tools

www.epa.gov/climatechange/emissions/ghginventorycapacitybuilding

ALU Software

www.nrel.colostate.edu/projects/ghgtool