

April, 2018

# Resources for estimating AFOLU emissions in the African continent

Felipe Casarim

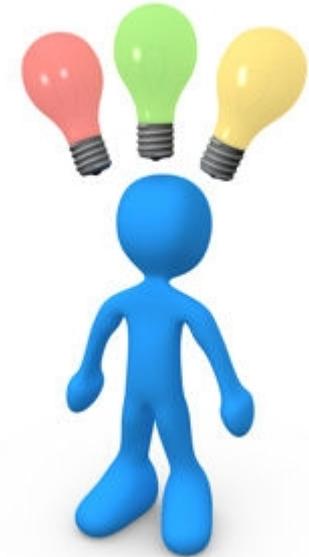
Ecosystem Services

Winrock International



# Emissions accounting

- What are the accounting boundaries?
- What are significant AFOLU emissions sources/sinks?
- What activities to include/exclude?
- What accounting approach to use?
  - Land-based
  - Activity-based
- Where do I get relevant data?

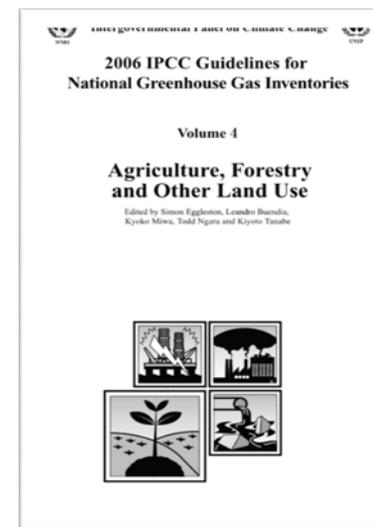


# Objectives

- Identify and present existing AFOLU resources (cross-cutting through Ag, Forestry and Grazingland) to support African countries on AFOLU emissions accounting
- Connect technical support providers to interested beneficiaries

# Existing Resources: Guidance

- IPCC Guidelines for National GHG Inventories



- Innumerable Sectoral Guidebooks
  - Forestry-related
    - REDD+
    - CDM
  - Agriculture and grazing sector

# Existing Resources: Tools

- IPCC Inventory Tools

<https://www.ipcc-nggip.iges.or.jp/software/index.html>

- Designed for GHG Inventory
- All Sectors

Task Force on National Greenhouse Gas Inventories

ipcc  
INTERGOVERNMENTAL PANEL ON climate change  
WMO UNEP  
IPCC web site

Inventory Software

IPCC Inventory Software

**Available Now!**  
The IPCC Inventory Software (Version 2.54) implemented Tier 2 methods for most categories under Energy, IPPU and Waste Sectors.

The IPCC Inventory Software implements the simplest Tier 1 methods in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories and as such is useful to users of all versions of the IPCC Guidelines. From Version 2.54, the Software implements Tier 2 methods in the 2006 IPCC Guidelines for most categories under Energy, IPPU and Waste Sectors (please see [Tier2\\_coverage.xlsx](#)). The TFI is currently working on making it compatible with the Tier 2 methods for AFOLU Sector.

This software has a number of improvements over [earlier software for the Revised 1996 Guidelines](#), including:

- Standalone software that does not require any additional software or internet access
- Covers all inventory categories but can also be used for management of specific sectors
- Allows different parts of the inventory to be developed simultaneously
- Data entry in worksheets following 2006 IPCC Guidelines for ease-of-use
- Provides default data from 2006 IPCC Guidelines but gives users the flexibility to use their own country-specific information

**Download**

- [Inventory Software Ver 2.54 \(released on 5 July 2017\)](#) >> Please read the [guide](#) carefully before using the software.
- [User Manual \(Ver 2.54\)](#)
- [Release Note \(Ver 2.54\)](#)
- [Detailed information on Tier 2 coverage](#) (Tier2\_coverage.xlsx)

\* The Software will automatically convert the database to the latest version when older version is opened. This conversion applies to from Ver 2.0. Please make sure to back-up your database before updating the software.

**Support**

Help Desk: email [ipcc\\_software@iges.or.jp](mailto:ipcc_software@iges.or.jp)

Web Forum: <https://discussions.zoho.com/ipccinventorysoftware/>

- IPCC Emission Factor Database

# Existing Resources: Tools

- USAID AFOLU Carbon Calculator  
<http://www.afolucarbon.org/>

- Online Carbon Calculator
- Covers 119 countries
- 7 AFOLU activities
- Designed to estimate impacts of actions



Navigate the map and click to select Subnational unit relevant to your interests.

# Existing Resources: Tools

- FAO EX-ACT Tool

<http://www.fao.org/tc/exact/carbon-balance-tool-ex-act/en/>

- Excel based
- Designed to estimate impacts of actions

The image displays the EX-ACT tool interface and a diagram of its main characteristics. The diagram, titled "Main characteristics of the tool", shows the tool is "The EX-Ante Carbon-balance Tool (EX-ACT) Standard Edition", which is "Upgradable over time", "User friendly in six easy steps", "Adapted to various scales (project, landscape, region, farm...)", and "Familiar Excel environment". It also notes "Moderate data requirements". The interface screenshot shows the "EASYPol" tool, "The EX-Ante Carbon-balance Tool (EX-ACT)", Version 7 - Multilingual Edition. It features a navigation menu with buttons for Start, Description, Land Use Change, Crop production, Greenhouse Gas emission, Land degradation, and Trade Investments. A language selection dropdown is set to "English". The interface also includes a "Detailed Results" button and a "Disclaimer" section.

# Existing Resources: Tools

- Agriculture and Land Use National GHG Inventory Software (ALU Tool)

<https://www2.nrel.colostate.edu/projects/ALUsoftware/>

- National GHG Inventories
- Agricultural and forestry activities

**Agriculture and Land Use National Greenhouse Gas Inventory Software**  
ALU Software Programs

Colorado State University

Home  
Software Description  
FAQ  
Registration Page  
Download Software  
Development Team  
External Resources  
Contact Us

**Agriculture and Land Use National Greenhouse Gas Inventory Software**

Greenhouse gas emissions inventories are conducted by governments to quantify the influence of anthropogenic activity on emissions and removals of several gases, particularly CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub>. Emissions occur due to activity related to energy use, industrial production, waste management, agricultural production, and land use and forestry management. Developing a GHG inventory that quantifies anthropogenic greenhouse gas emissions and removals at a national scale is a challenge for most countries. However, an accounting of emissions and removals is important for informing policy decisions, and also required for reporting to the United Nations Framework Convention on Climate Change (UNFCCC) by countries who are signatory parties to the treaty agreement.

The Agriculture and Land Use National Greenhouse Gas Inventory (ALU) Software guides an inventory compiler through the process of estimating greenhouse gas emissions and removals related to agriculture and forestry activities. This software is based on the methods in the IPCC National Greenhouse Gas Inventory Guidelines. The software simplifies the process of conducting the inventory by doing the inventory analysis into steps to facilitate the compilation of activity data, assignment of emission factors and completion of the calculations. The software also has internal checks to ensure data integrity. Many governments also have an interest in mitigating greenhouse gas emissions from agriculture and forestry. Determining mitigation potential requires an understanding of both current emission trends and the influence of alternative land use and management practices on future emissions. Our software program is designed to support an evaluation of mitigation potentials using the inventory data as a baseline for projecting emission trends associated with management alternatives.

Introduction to the ALU software

Introduction to ALU software video | Watch this video | Download now!

The program has been used to support UNFCCC regional GHG inventory capacity-building projects in Southeast Asia and Southern and Eastern Africa. The software was also developed and used in a previous capacity-building effort in Central America. Funding has been provided by US Environmental Protection Agency, US Agency for International Development and US Forest Service. Developers at Colorado State University have designed the software to make the inventory process easy to implement and consistent with guidelines provided by the Intergovernmental Panel on Climate Change. Please

Funding Sources:  
USAID  
UAS

# Existing Resources: Tools

- Winrock GHG Accounting Platform (**WinGAP**)
  - Excel based, transparent
- Customizable to national circumstances regarding
  - Data availability
  - Importance of GHG source
  - Existing local research,

*Rapid customization for national circumstances*



Category	Activity	Tier	Scale
Livestock	Enteric Fermentation	II	Region
Livestock	Manure Management	II	Region
Soil Management Direct	Synthetic N	I	National
Soil Management Direct	Organic N	I	National
Soil Management Direct	Crop Residue	I	National
Forest remaining forest	Fuelwood extraction (degradation)	II	District
Forest to non-Forest	Deforestation	II	District

- Ideal for Non-Annex I countries

# Additional Resources

- Numerous sector-specific guidance and emissions accounting tool
  - REDD+ and forestry
  - Agriculture: commercial and small holder
  - Grassland and pasture management
- LEDS GP with a wealth of expertise and readily available for assistance
  - AFOLU WG
  - REAL

Thank you!

[fcasarim@winrock.org](mailto:fcasarim@winrock.org)



[winrock.org](http://winrock.org)



[ledsgp.org/working-groups/agriculture-forestry-and-land-use](http://ledsgp.org/working-groups/agriculture-forestry-and-land-use)



[/winrockinternational](https://www.facebook.com/winrockinternational)



[@WinrockIntl](https://twitter.com/WinrockIntl)



[/company/Winrock-International](https://www.linkedin.com/company/Winrock-International)



[winrock\\_international](https://www.instagram.com/winrock_international)