Improving Inputs for GHG Inventories

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March 29, 2007

Project History

Strengthening Regional Capacity for Developing Greehouse Gas (GHG) Inventories

- Panama Workshop, 2003: U.S. EPA and Central American Climate Focal Points discussed potential project areas related to climate change
- Central Americans and USAID interested in GHG inventories
- Follow-up
  - EPA provided a list of potential GHG inventory topics
  - May 2003: Central American climate change Focal Points choose topics:
    I. **National inventory management**
    II. **Data improvements for specific IPCC source categories (landfills, agriculture, and forestry)**

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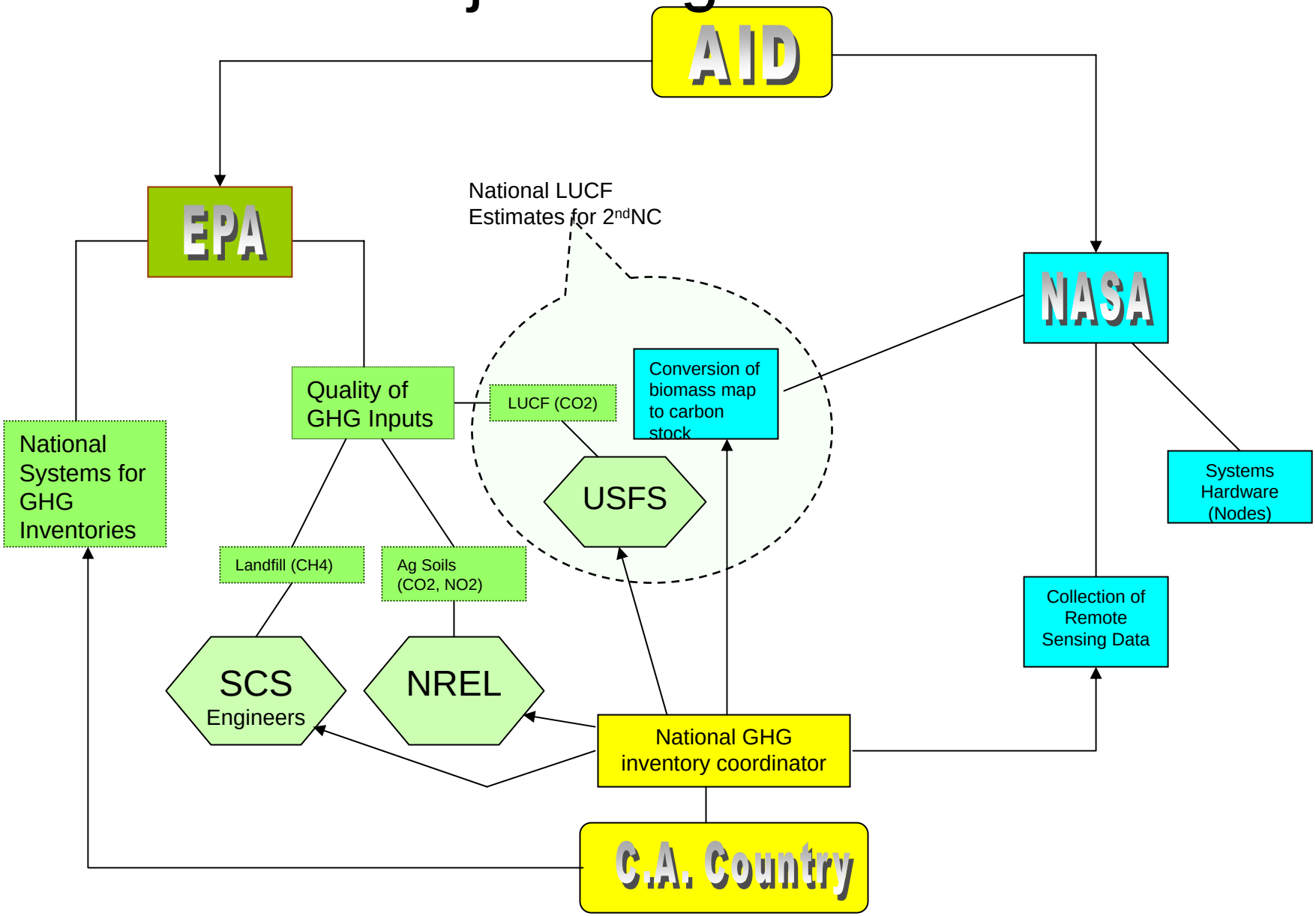
What is a GHG Inventory?

- National estimate of greenhouse gas (GHG) emissions and sinks
  - Energy, industrial processes, agriculture, land use, waste
- Requirement of countries under UNFCCC
  - Developed countries submit an annual report
  - Developing countries periodically report on emissions
- Use internationally agreed methods
  - Default values available, better to use national data

Project Organization



Building National Inventory Management Capacity in Central America

Goal: Build sustainable National GHG Inventory Management systems in Central America

LOW TECH!

IMPORTANT!

- A country can prepare a GHG inventory at regular intervals (annually, every 2 years etc.)
- Inventory quality improves over time
- Roles and responsibilities are understood
- All information used to prepare the inventory is archived
- Experts can come and go but the inventory does not suffer
- The GHG inventory meets the needs of policy-makers, researchers, and the public

Inventory Coordinators use EPA Templates and Tools

1. Key Source Analysis Report
2. Description of Institutional Arrangements
3. Source by Source Documentation of Data and Methods for Key Sources
4. Description of Archiving and QA/QC Systems
5. National Inventory Improvement Plan

...Priorities and Projects for Improvements

Country Preliminary GHG Inventory System Report 2006

Improved Waste GHG Inventory Inputs

- Data collected for the project
  - Waste composition
  - Waste generation rates
  - Combustion at landfills
- Allows countries to use higher tier IPCC methods
  - more accurate, more reflective of national waste characteristics and disposal practices

Beyond Central America

- Emission Factor Database
  - Complements IPCC guidance
  - Review of data
  - Will allow other countries with similar circumstances to improve emissions estimates
  - Countries should consider submitting waste per capita, waste composition, etc.

For more information

- UN Framework Convention on Climate Change

http://unfccc.int/2860.php

- IPCC guidelines

http://www.ipcc-nggip.iges.or.jp/

- Emission Factor Database

http://www.ipcc-nggip.iges.or.jp/EFDB/main.php

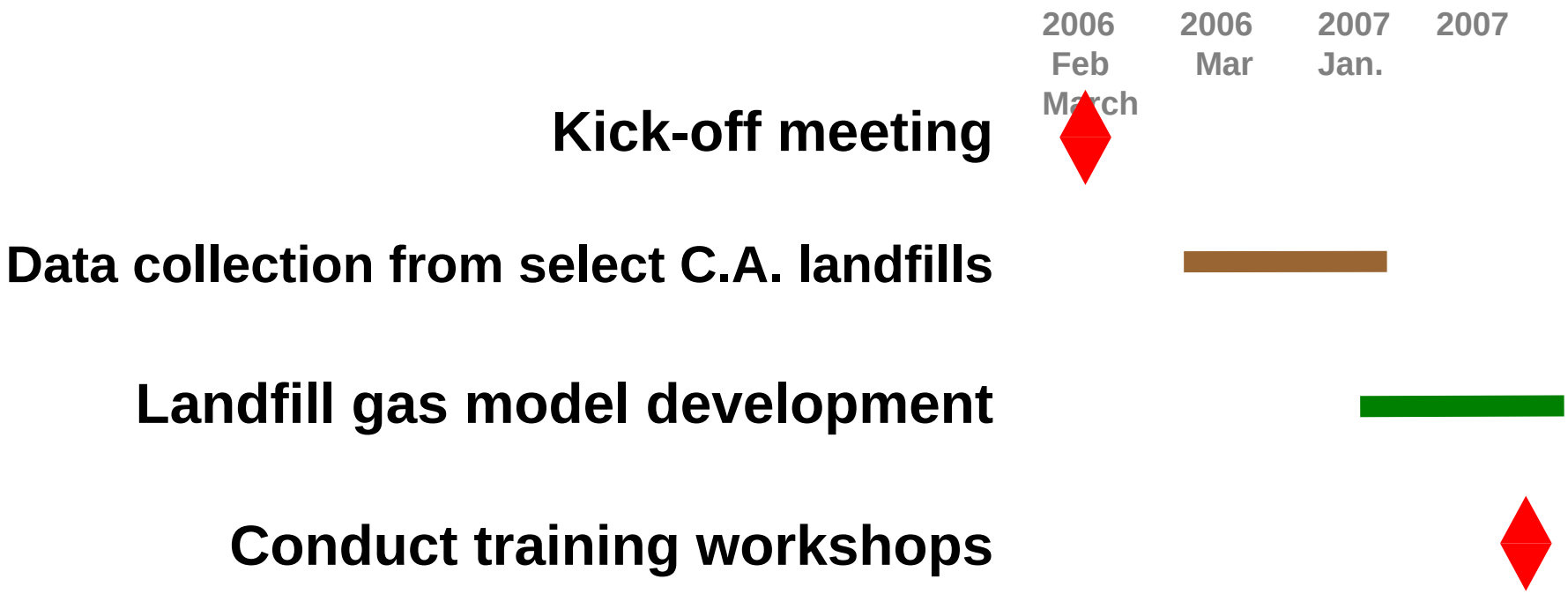
Central America
Landfill Gas Model Project

- Project idea was a natural extension of the inventory project

- Project purpose: to develop a model for estimating the amount of energy available from landfill gas which can feasibly be extracted from landfills in Central America

- Model is useful tool for finding landfills which are suitable targets for energy recovery or direct use projects.

Project Milestones



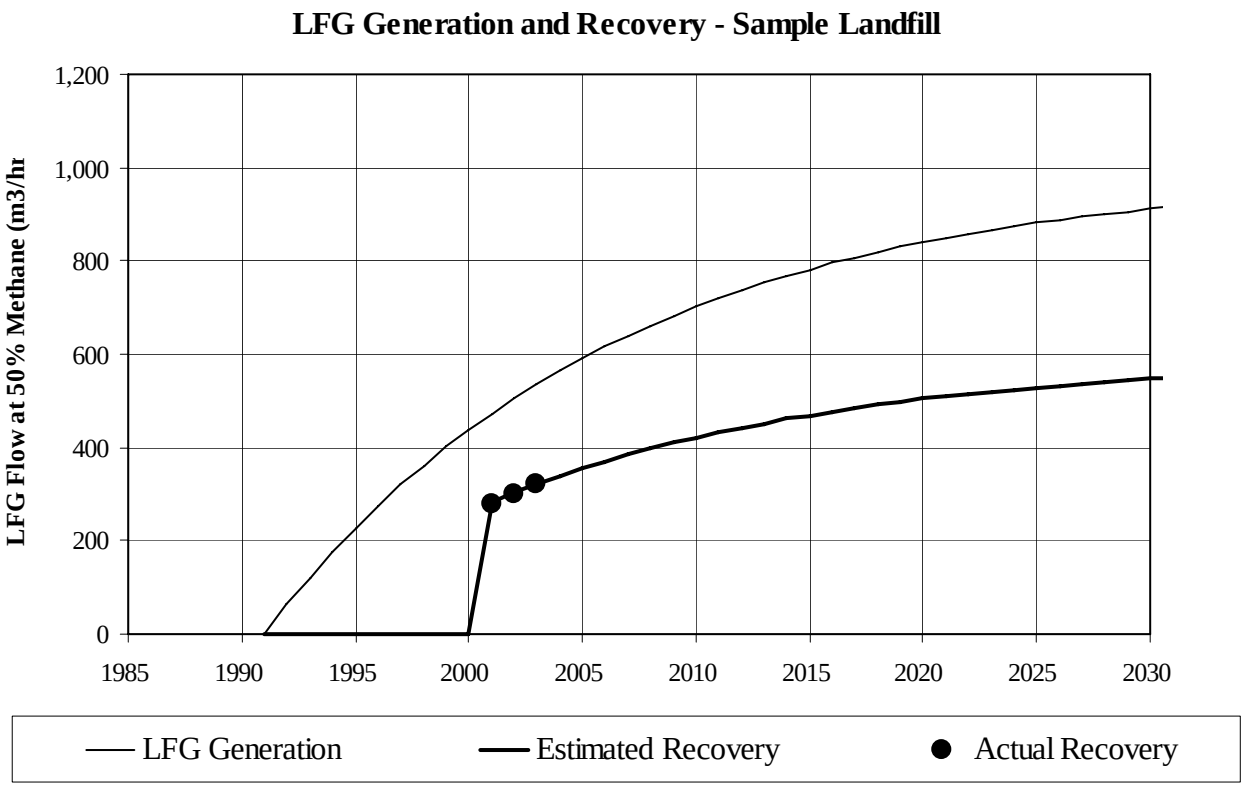
Central America
Landfill Gas Model Project

- Estimates amount of landfill gas generated and the percentage available for recovery at a given landfill
- Landfill gas recovery = generation x “recovery efficiency”
- Users of Model include landfill managers, government officials, potential LFG end users, project investors

Central America
Landfill Gas Model Project

- Model was based on other existing models:
  - U.S. EPA LandGEM
  - Mexico Biogas Model
  - CDM Method AM0025
  - Intergovernmental Panel on Climate Change (IPCC) Model (2006)

Central America
Landfill Gas Model Project

- Participating countries supplied data on the following factors affecting landfill gas generation and recovery:
  - Waste disposal history, or waste in place (volume or tons) and years of operation
  - Physical composition of the waste stream (% organics, % moisture; waste degradability) <u>or</u> Waste Types (ash, food waste, sludge, etc.)
  - Landfill gas composition (% methane)
  - Site engineering and management practices
- Mil gracias!

Example of LFG Curve