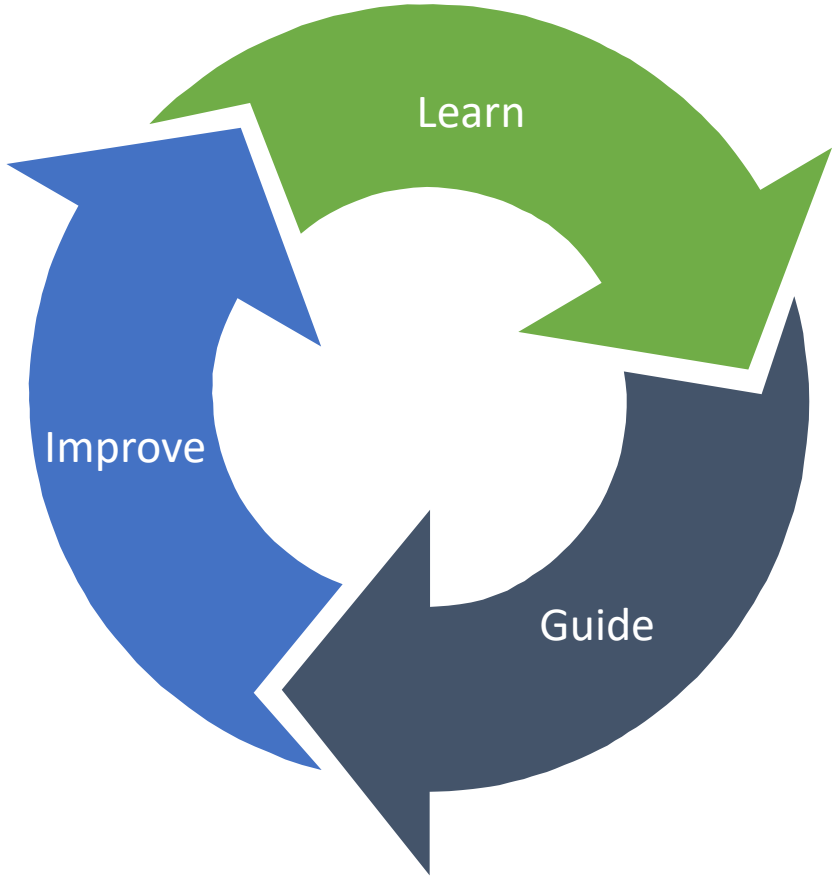
IMPROVEMENT PLANNING

April/May 2024

U.S. Environmental Protection Agency

A national inventory improvement plan facilitates **continual** inventory improvements over time



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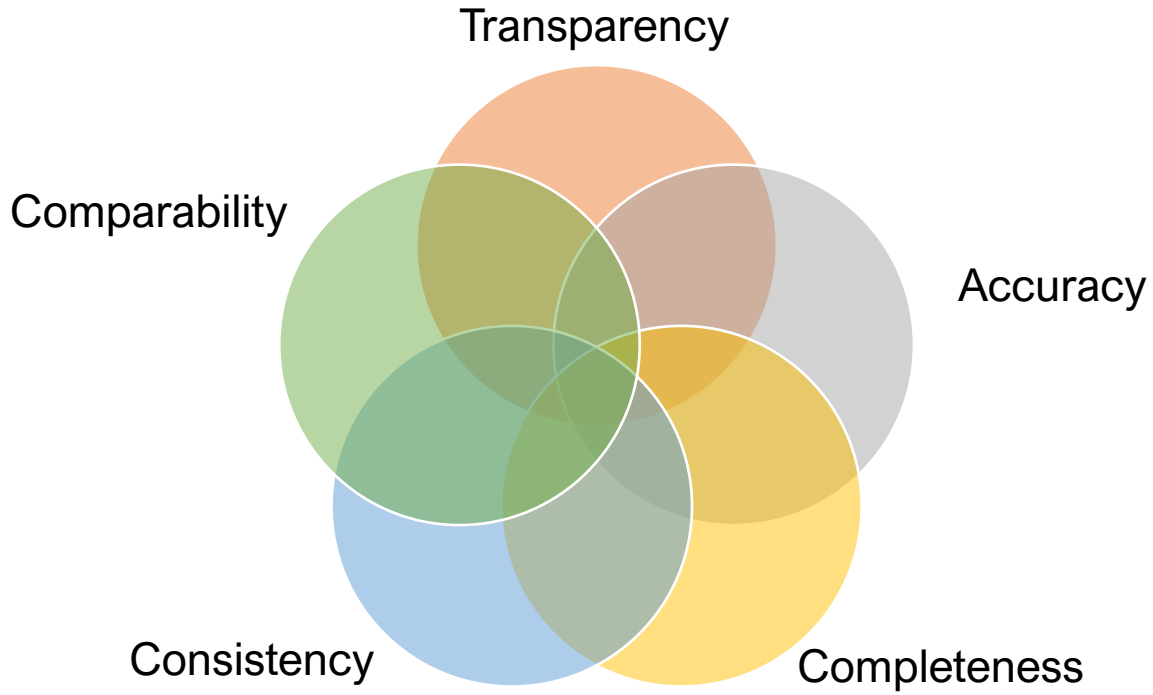
Reminder: Inventory Principles

- The Inventory should be considered a living (not static) analysis, with aim to continually improve across these principles
- Focus resources on significant or “key” sources and sinks that influence GHG levels and trends
- Track improvements using an inventory improvement plan

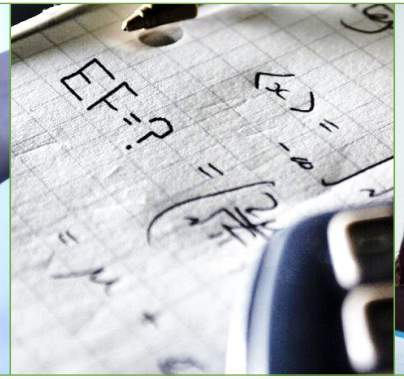


Benefits of a National Inventory Improvement Plan

Improve transparency, accuracy, completeness, consistency, and comparability over time, but also sustainability of national inventory management system

Find better data

Facilitate coordination among institutions to support data collection



Adopt a higher Tier methodology

Train current staff members

Enhance QA/QC procedures

Guide new staff

- Save all compilation files and references to create an inventory archive
- Backup the archive

- Inventory inception meeting
- Start with previous inventory, if available
- Review and implement improvement plan
- Identify Activity Data and choose methodologies

- Finalize inventory report, including reporting tables
- Develop improvement plan
- Publish/submit inventory for UNFCCC reporting on time

- Collect Activity Data, Emission Factors
- QC all data

- Conduct & document QA/QC procedures, such as basic peer review
- Address QA/QC findings

- Estimate emissions & removals
- Implement QC procedures
- Revise estimates, based on new data and QA/QC findings
- Ensure time series consistency
- Conduct uncertainty & key category analyses

- Document methodological approaches, recalculations, and references
- Write inventory report, prepare draft reporting tables

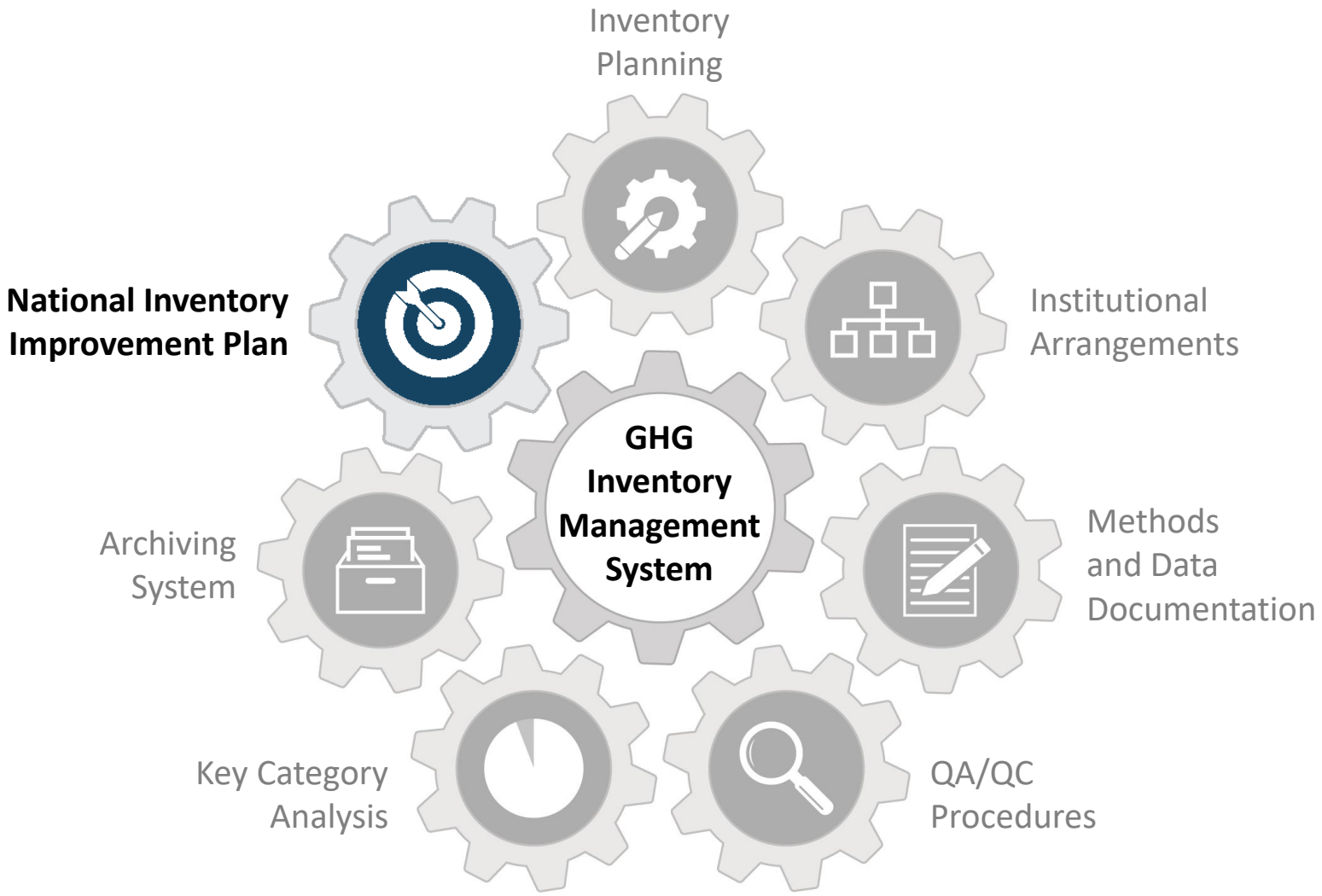
Discussion

- Does an improvement plan exist?
- How should the plan be organized?
- What criteria should be used to track and prioritize improvements?

Example: US GHG Inventory Improvement and Completeness tracker

- Dynamic log of improvements by sector, by following characteristics, along with a log for cross-cutting improvements
  - Category, subcategory
  - Key category (Y/N)
  - Description of Improvement
  - Priority (High, Medium, Low)
  - Impact to GHGI compilation elements (i.e. adding another row to a summary table)
  - Source of Improvement (e.g., from QC steps, UN reviews, public review, identified by EPA coordinator, etc.)
  - Resource needs to implements
  - Improve ability to track mitigation measures
  - Anticipated time frame (i.e. short term (next submission), medium term (2-3 years) and long-term 3+ years to implement
  - Start date
  - Status (pending, in progress, and complete)
- Also log completeness status across all categories for US States and Territories

TOOLS TO HELP DEVELOP A NATIONAL INVENTORY IMPROVEMENT PLAN (NIIP) AND GUIDANCE ON PRIORITIZATION



Review and update default introduction to *National Inventory Improvement Plan* included in template

National Inventory Improvement Plan

This National Inventory Improvement Plan (NIIP) presents options for improving the national GHG inventory system to support compilation of a high-quality inventory consistent with the 2006 IPCC Guidelines. The NIIP will guide future efforts to increase the transparency, consistency, comparability, completeness, and accuracy of future inventories. It will inform the overall improvement of the national GHG inventory, including strengthening institutional capacity over the coming years. These improvements have been identified through documentation of existing institutional arrangements, category-by-category analyses of methods and data, QA/QC procedures, key categories, and the archiving system.

Table 7-1 identifies the improvement options for this NIIP and their level of priority. Table 7-2 proposes inventory improvement projects, consisting of the high-priority options from Table 7-1.

STEP 1: Compile the list of improvement options in Table 7-1, below.

Purpose of Table 7-1	**To provide a clear overview of the improvement options identified by the inventory team in Templates 2 through 6 and an explanation** of the basis of the assigned priority level.
How to use the table when complete	To guide efforts to increase the transparency, accuracy, consistency, comparability, and completeness (TACCC) of future national GHG inventories.
General instructions	Consolidate all improvements listed in Templates 2 through 6 into this table. Ensure that these improvements include enough identified in Templates 2 through 6. Improvements in these categories need to be specific, not general. Improvements that are too general are unlikely to be completed

Who completes this table: National Inventory Coordinator (NIC)

STEP 1: LISTING IMPROVEMENT OPTIONS FROM TEMPLATE 2 THROUGH 6

Instructions by column	**Key Category:** Record "Yes" if the category to which the issue applies is a key category. Record "No" if it is not a key category. Record "N/A" if the issue does not pertain to an individual category.
	Category Code and Name: If the relevant improvement is related to methods and data documentation, record the IPCC code and name of the source or sink category to which this improvement relates. The codes are in the *2006 IPCC Guidelines*, Volume 1, Chapter 8, Table 8.2, available here: https://www.ipcc-nggip.iges.or.jp/public/2006gl/vol1.html.
	Issue: Describe the issue and why an improvement is recommended.
	Improvement Option: Describe what will be done to address the issue.
	Priority of Improvement: Indicate the priority of the improvement: High, Medium, or Low. Explain why this level of priority is warranted. For example, acquiring activity data for a category that has not been estimated to date but is considered to have substantial emissions, will likely be more important than developing a country-specific emission factor for a non-key category. Consider what your high-level priorities for the GHG inventory should be (e.g., improving completeness, enhancing accuracy with key categories, reducing overall uncertainty, improving time series consistency, increasing transparency, improving data availability, enhancing institutional structures). This may help you decide whether an improvement option should be high-priority.

Table 7-1 Improvement options

No.	Key Category	Category Code and Name	Issue	Improvement Option	Priority of Improvement	Timing of Improvement	Additional Information Needed for Improvement
1							
2							
3							

Who completes this table: National Inventory Coordinator (NIC)

STEP 1: LISTING IMPROVEMENT OPTIONS FROM TEMPLATE 2 THROUGH 6

Table 7-1 Improvement options (examples)

No.	Key Category	Category Code and Name	Issue	Improvement Option	Priority of Improvement	Timing of Improvement	Additional Information Needed for Improvement
1		*Cross-cutting (Inventory Planning)*	*Limited time for Inventory cycle* ***(See "Inventory Planning")***	*Start the GHG Inventory development cycle 1 month earlier*	*High*	*Next Inventory cycle (beginning in June 2022)*	*Communicating plan needs to begin ASAP*
2	*Y*	*1A3b Road Transport-CO2*	*Required data is not submitted to inventory in time for Expert Review (**See "Inst. Arrangements")***	*Develop a formal MOU with Department of Transportation to ensure data is provided in a timely manner and format*	*Medium*	*Next Inventory cycle (pending signature of MOU)*	*Use Memorandum of Cooperation (MoC) template as starting point*
3	*Y*	*3A1 Enteric Fermentation-Cattle-CH_4*	*Shift from Tier 1 methods to Tier 2 given this is key category* ***(See MDD and KCA)***	*Collect data to implement enhanced characterization or Tier 2 methods consistent with IPCC methodological decision tree and improve accuracy.*	*High*	*Longer-term, complete within 2 Inventory cycles , by 2024*	*See Task 3 in contract with University DC*
4		*Cross-cutting (Archiving)*	*No back-up of data* ***(See "Archiving")***	*Copy data files from Source Lead computers to a CD or back-up external hard drive*	*High*	*At the end of the next inventory cycle*	

Who completes this table: National Inventory Coordinator (NIC)

Step 2: Detail inventory improvement projects from Step 1 (Table 7-1) that were high priority

Table 7-2. Potential projects for improving the national GHG inventory system

No. (from Table 7-1)	Estimated Staff Time (workdays)	Estimated Cost for Services (local currency)	Estimated Cost of Equipment (local currency)	Reference to Further Information	Responsible Staff

Who completes this table: National Inventory Coordinator (NIC)

Example of Identifying Potential Projects to Implement High-Priority Improvements

Table 7-2. Potential projects for improving the national GHG inventory system

No. (from Table 7-1)	Estimated Staff Time (workdays)	Estimated Cost for Services (local currency)	Estimated Cost of Equipment (local currency)	Reference to Further Information	Responsible Staff
1	*60*	*$10,000*	*N/A*	*See Task 2 in contract with University DC*	*V. Cambo*
2	*120*	*$15,000*	*N/A*	*See Task 3 in contract with University DC*	*J. Steller*

From Table 7-1

Upon completion of 7-1 and 7-2, improvement plan is ready to move forward

Action Items for National Inventory Improvement Plan

1. To save time and effort, identify improvements and issues when completing the other templates, so they can feed into the NIIP.
2. Identify the *issue,* the *improvement plan*, the *priority,* and the *timing* of when the improvement needs to or can be completed.
3. For each improvement, estimate staff time, cost, when the improvement should be completed, and who is responsible.
4. This planning facilitates efficient use of limited resources