Poll Question #1

Have long have you worked on GHG inventories?

1. 0-2 years
2. 3-5 years
3. 6+ years
4. I am not on my country's inventory compilation team

Respond using Mentimeter link in the chat!

Poll Question #2

Describe your level of knowledge on sustainable national GHG inventory management systems.

1. This is new to me
2. Moderate
3. Knowledgeable
4. Expert

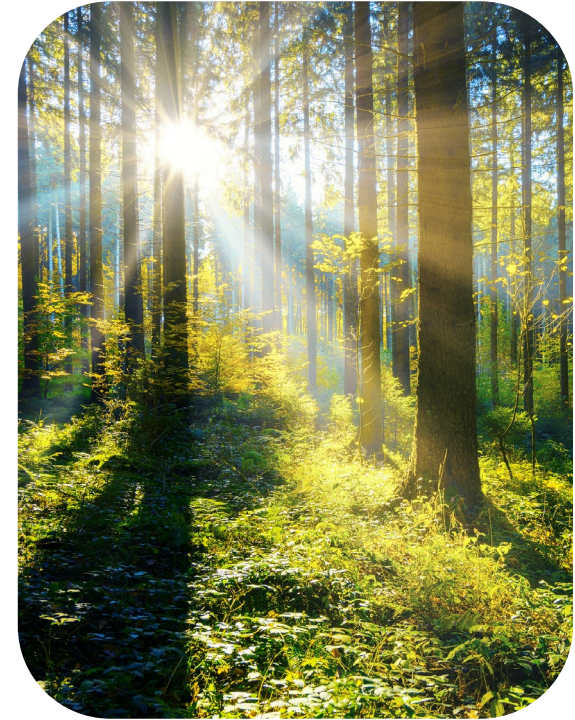*Respond using Mentimeter link in the chat!*

Overview

Introduction to GHG Inventory Management Systems and the Toolkit

**How to Use the Templates**

Enhanced Transparency Framework

National GHG Inventory System Templates

EPA has organized key elements of UNFCCC and IPCC guidance into easy-to-use National GHG Inventory System Templates to help inventory compilers develop a sustainable national GHG inventory management system

- ✓ Based on EPA's 20+ years of experience preparing the U.S. inventory and working with countries to develop inventory systems

- ✓ Documents the critical building blocks of national inventory systems

- ✓ Supports the task of reporting on national inventory arrangements, QA/QC plans, etc.

- ✓ Helps countries meet reporting requirements of the Enhanced Transparency Framework under the Paris Agreement
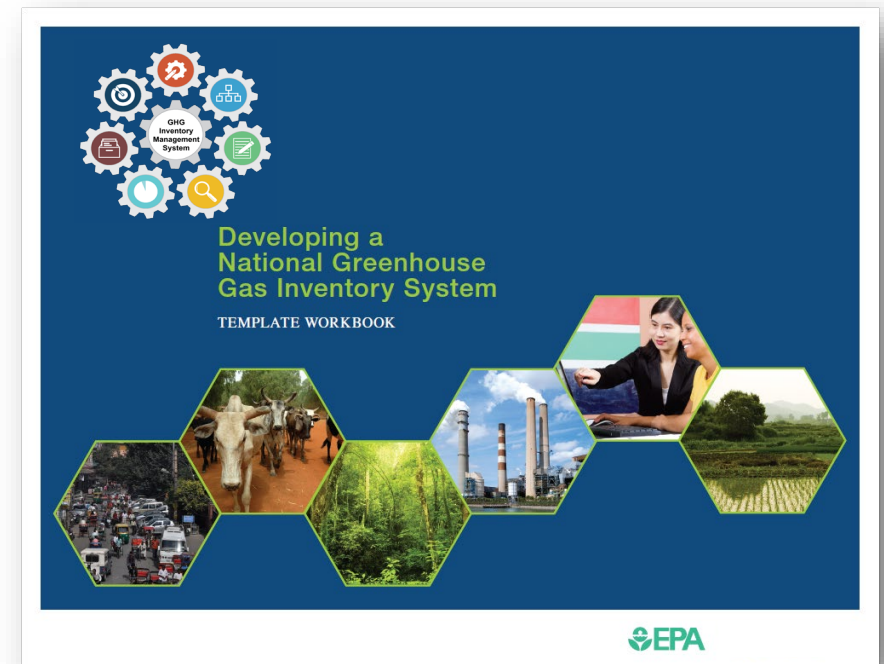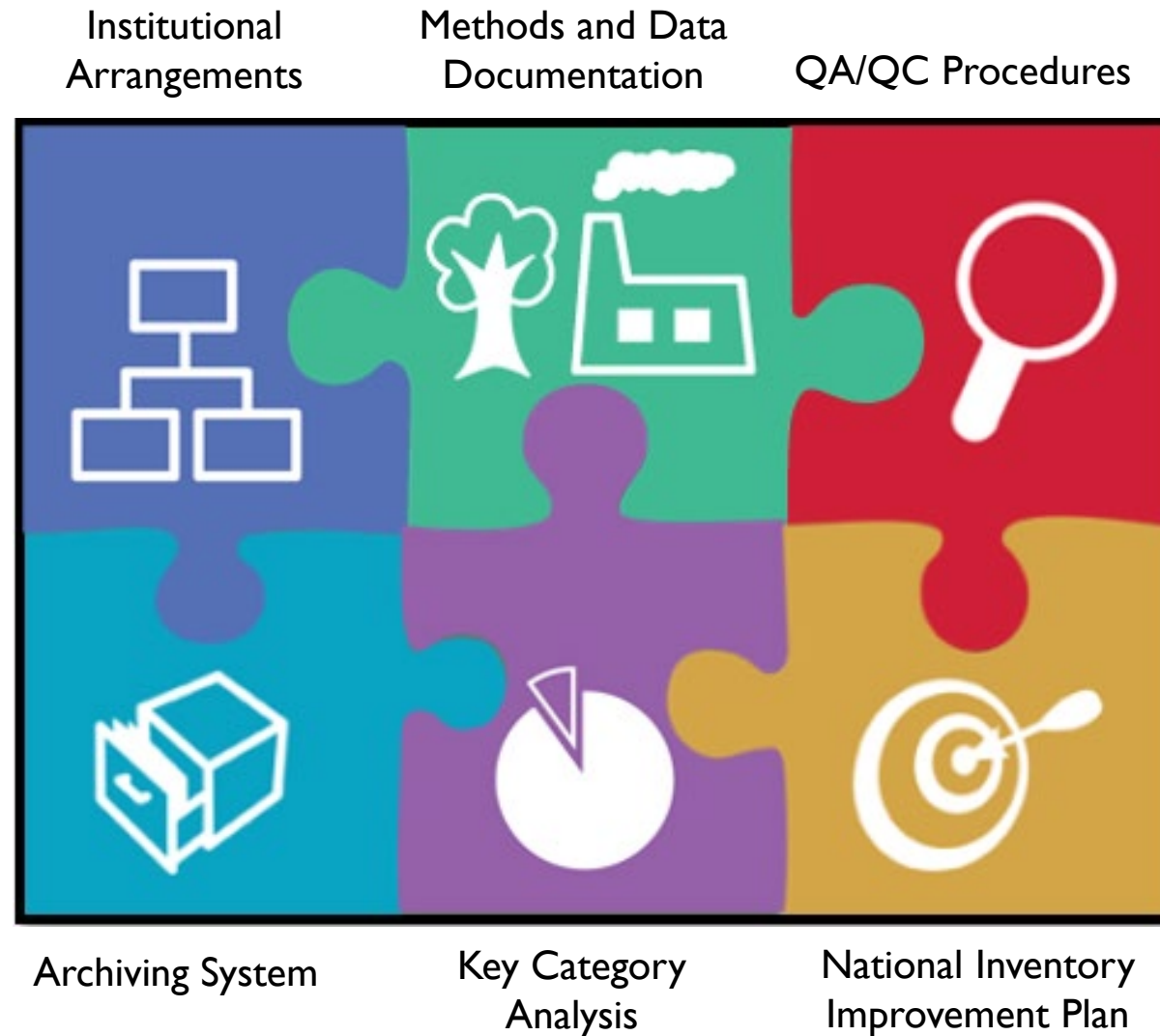
Benefits of the National Inventory System Templates

Completing the templates will help you…	…which yields these benefits
Document critical information about inventory plans and procedures	Improve Transparency and Credibility
Define inventory tasks and development stages	Break down work into discrete tasks
Accommodate varying levels of national capacity	Different priorities and roles based on budget and staff capacity
Clarify roles and responsibilities of individuals and institutions	Easier accountability and role development
Identify priorities for future improvements	Continuous improvement and refinement
Provide a clear starting point for future inventories	Help establish a sustainable national system that • Meets TACCC principles • Enables transition to ETF commitment of submitting a Biennial Transparency Report (BTR) every 2 years

Key Components of Developing a GHG Inventory

Institutional Arrangements

Methods and Data Documentation

QA/QC Procedures

Archiving System

Key Category Analysis

National Inventory Improvement Plan

Key Components of Developing a GHG Inventory

Preview of upcoming updates!

How to Use the Templates

National Inventory Improvement Plan

Institutional Arrangements

GHG Inventory Management System

Archiving System

Methods and Data Documentation

Key Category Analysis

QA/QC Procedures
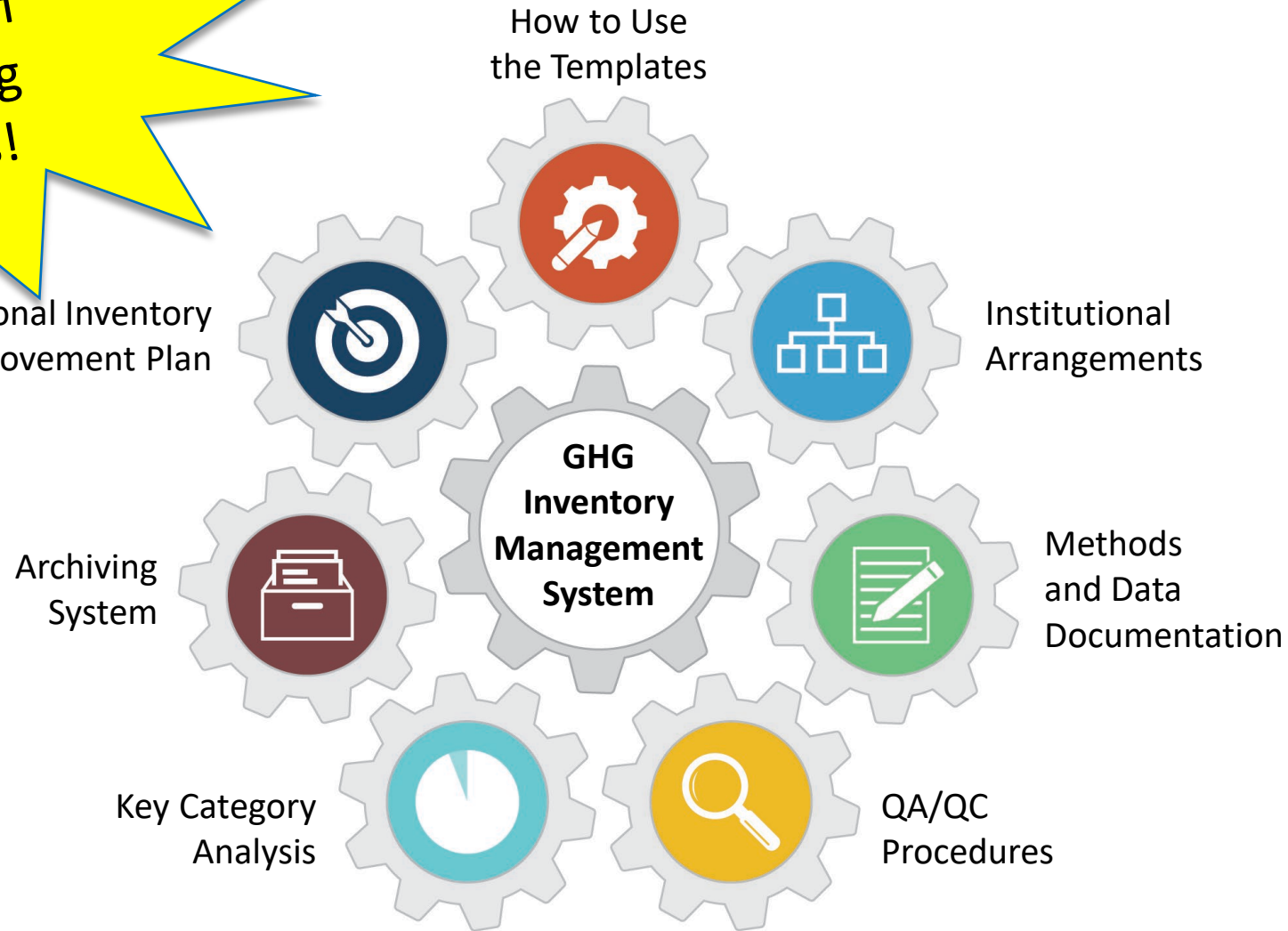
Template 1: How to Use the Templates
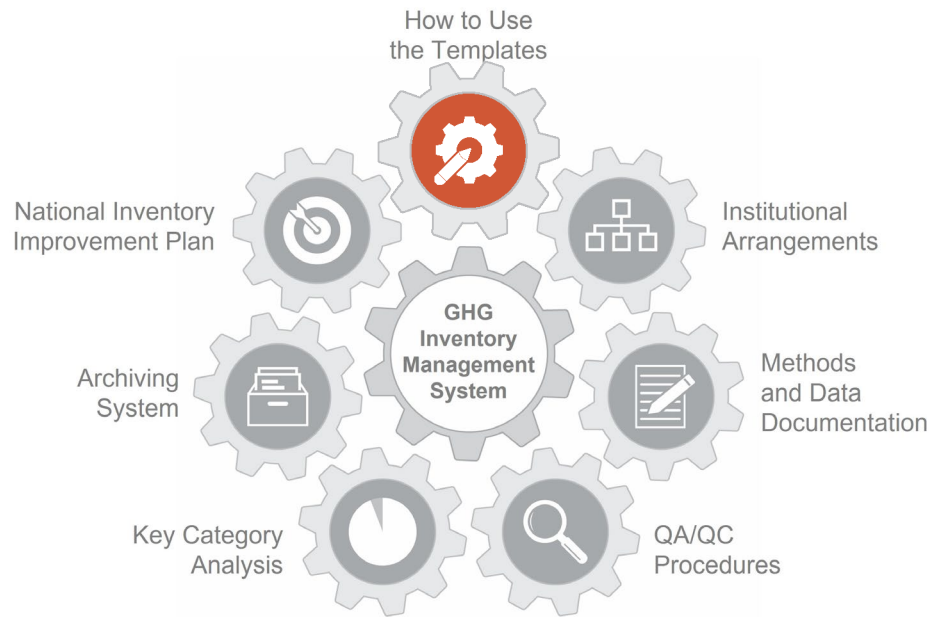
This template will help you:

- Understand how to use all of templates
- Document inventory compilation schedule and workplan
- Provide tools for the NIC to track progress on completing each template

Supporting Templates, Guides, and Tools

- National Inventory Inception Memorandum Template

Template 2: Institutional Arrangements
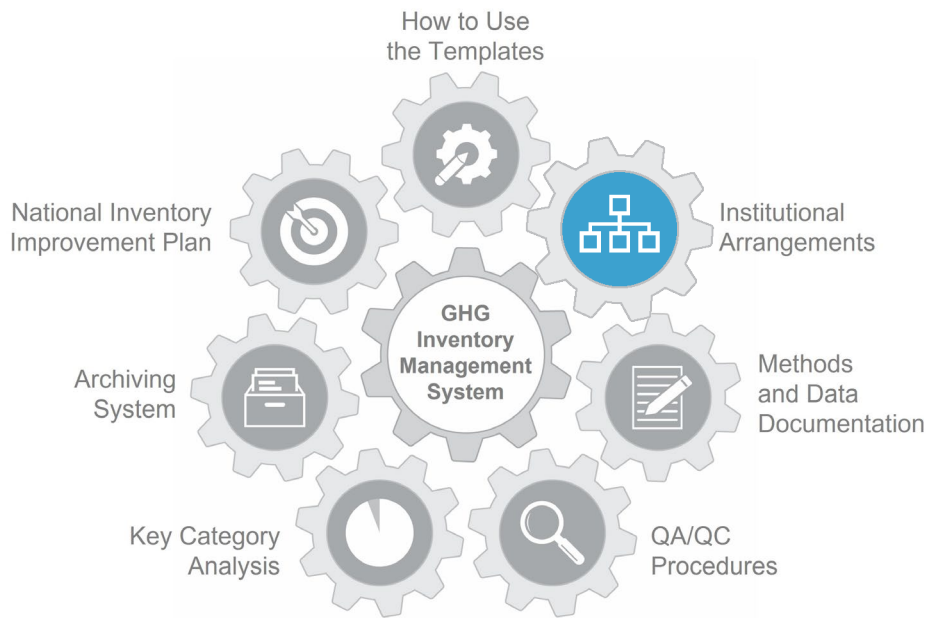
This template will help you:

- Assess and document strengths and weaknesses
- Promote institutionalization of the inventory process
- Ensure long-term integrity of the inventory

Supporting Templates, Guides, and Tools

- National GHG Inventory Coordinator: Responsibilities and Qualifications Guide
- Sector Lead Roles and Responsibilities Guide for Energy, IPPU, Agriculture, LULUCF, and Waste
- Memorandum of Cooperation Template
- Statement of Work Template

Template 3: Methods and Data Documentation
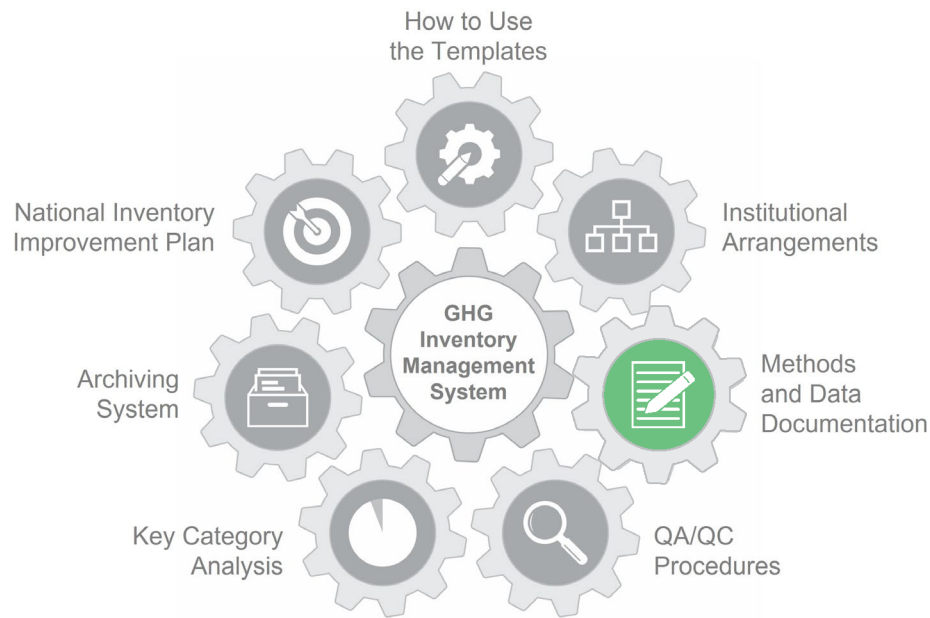
This template will help you:

- Document methodologies, activity data, and emission factors
- Identify future improvements
- Provide valuable documentation of inventory categories for future reference

Supporting Templates, Guides, and Tools

- Confidentiality Agreement and Amendment Template

Template 4: QA/QC Procedures
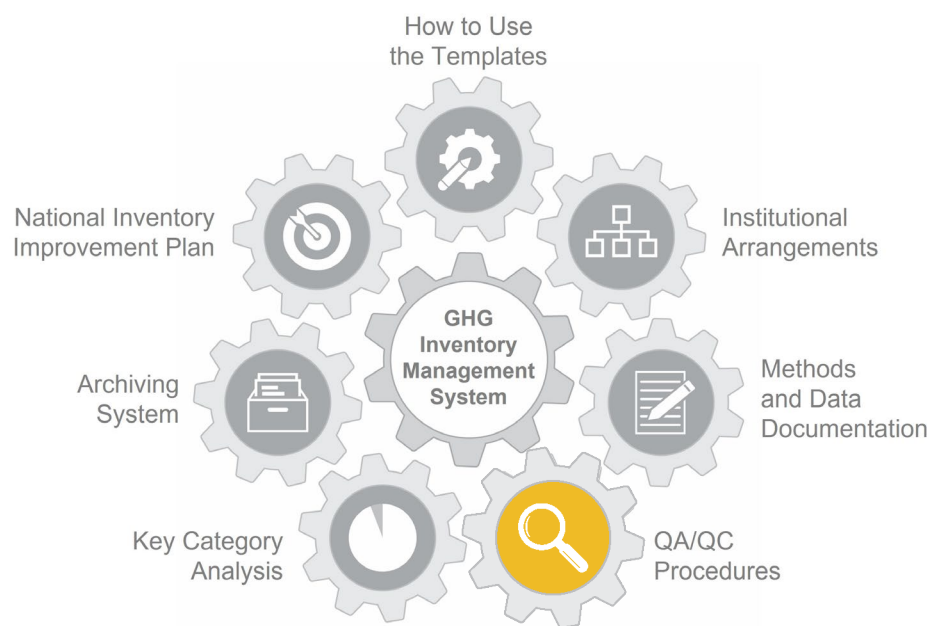
This template will help you:

- Provides a guide to establish cost-effective quality assurance and quality control (QA/QC) procedures
- Define roles and tasks of inventory staff
- Includes general and category-specific checks, as recommended by IPCC

Supporting Templates, Guides, and Tools

- Appendix 2: Expert Review Elicitation Template

Template 5: Key Category Analysis (KCA)
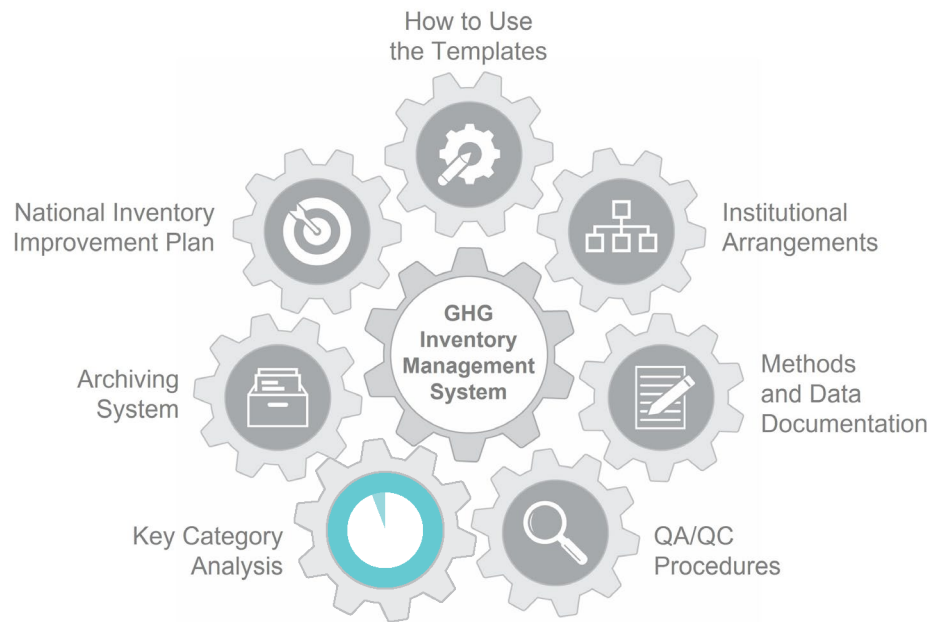
This template will help you:

- Identify the most important sources and sinks in the national GHG inventory
- Focus and prioritize inventory improvement

Supporting Templates, Guides, and Tools

- Key Category Analysis Tool

Template 6: Archiving System
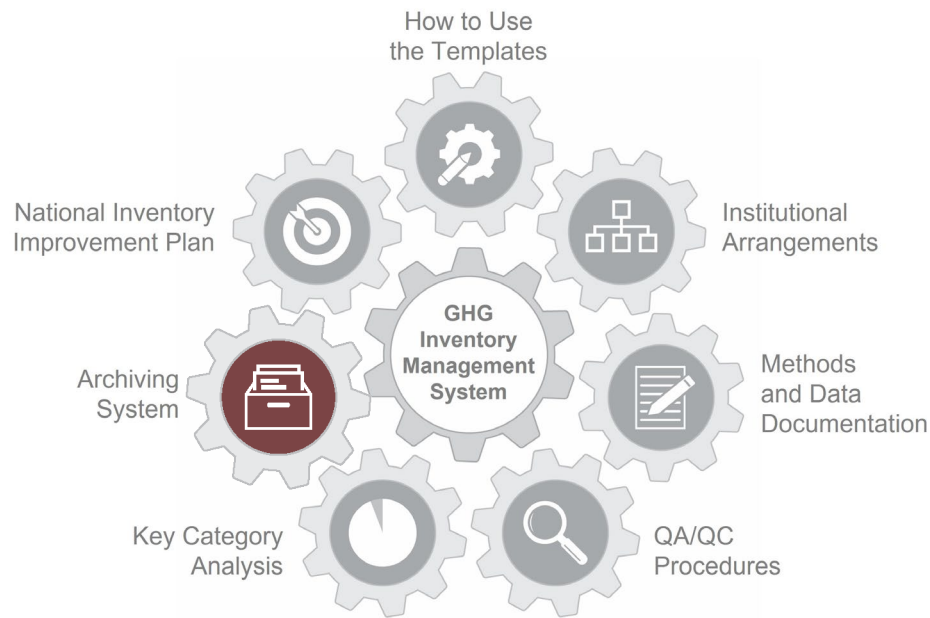
This template will help you:

- Create a complete, accessible, and cost-effective archiving system
- Provide the critical starting point for future inventories
- Increase the transparency of the inventory

Supporting Templates, Guides, and Tools

- Archiving Procedures Checklist

Template 7: National Inventory Improvement Plan

This template will help you:

- Identify and prioritize future improvements, based on the needs identified in the 6 other templates

- Strategize to implement improvements that enhance your inventory's transparency, accuracy, completeness, comparability, and consistency (TACCC) over time

Supporting Templates, Guides, and Tools

- Inventory Progress Indicator (IPI) Tool

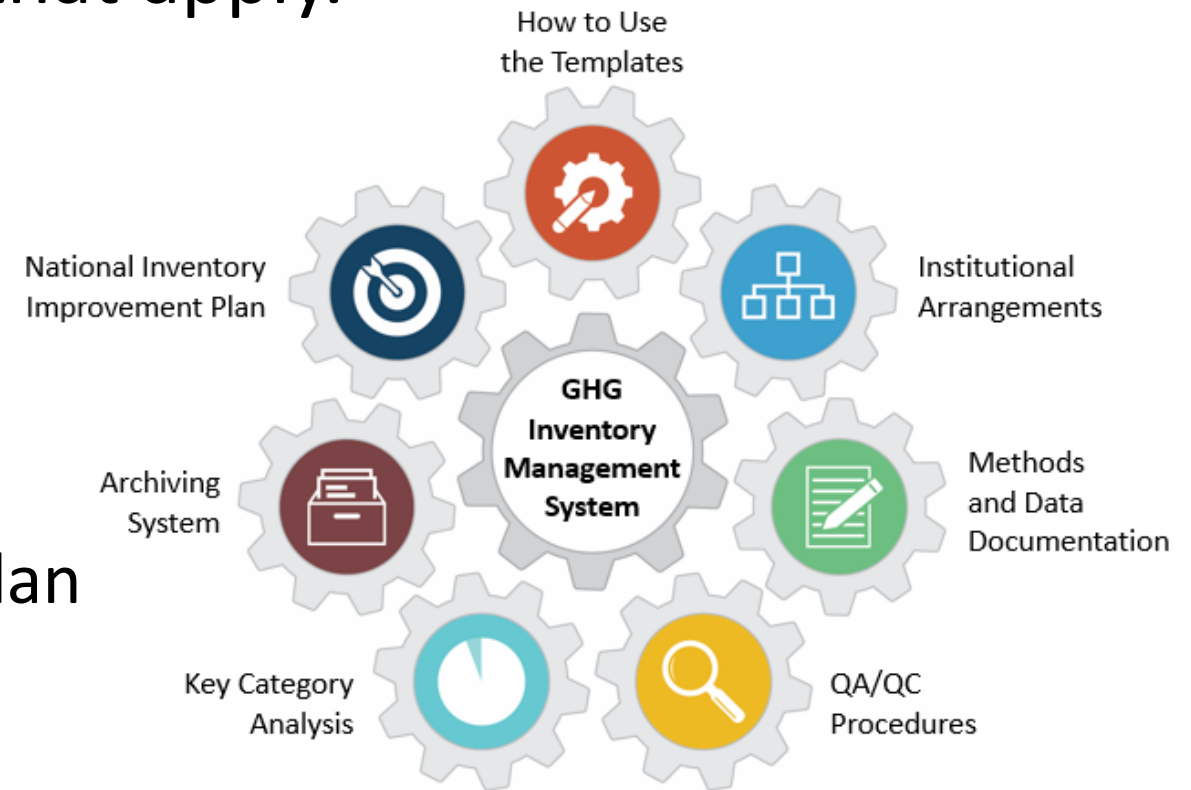# Templates Available by Language

Templates Available in English, en Español, and en Français

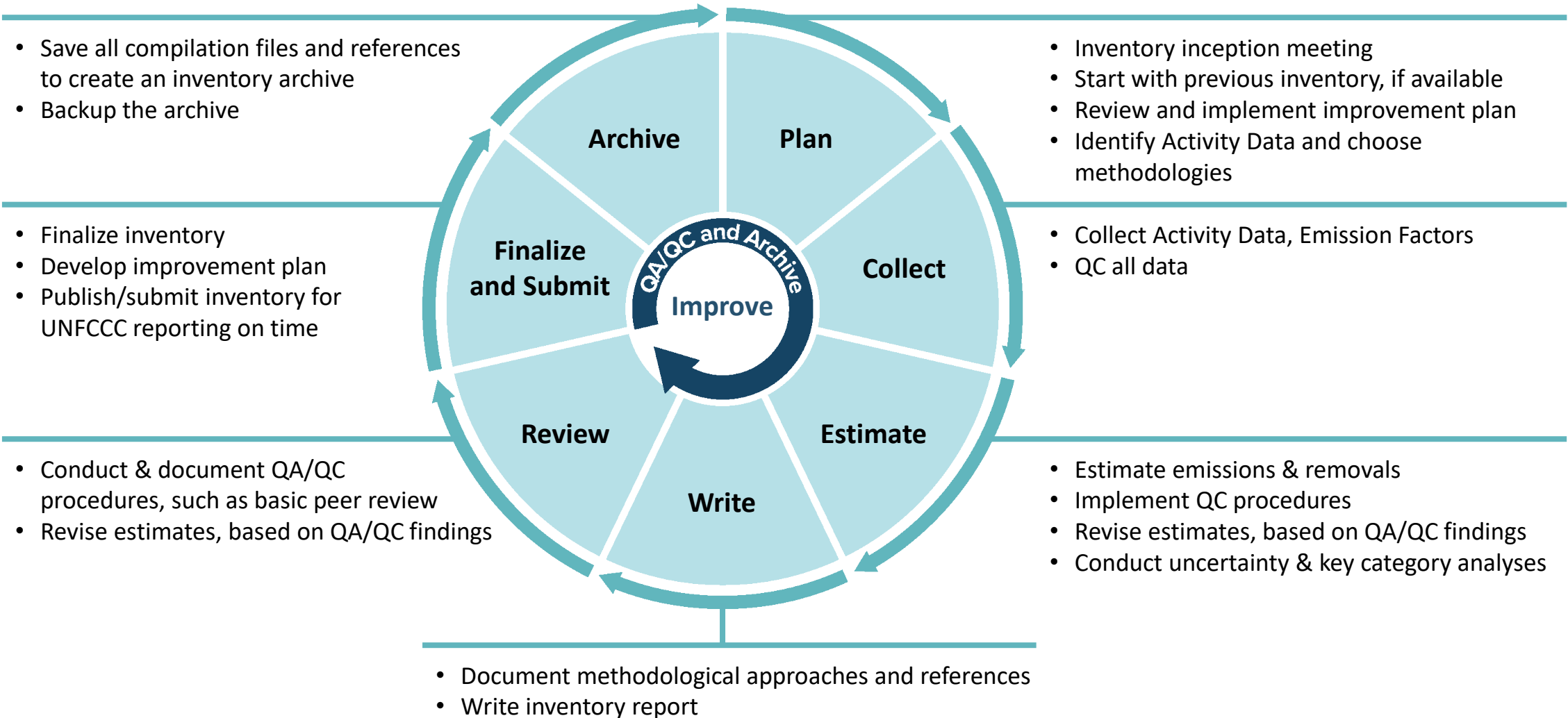| In English	En Español	En Français
Introduction to Toolkit	✓	✓
Template 1: How to Use the Toolkit	Este documento no esta disponible	Ce document n'est pas encore disponible
National GHG Inventory Inception Memorandum	✓	✓
Template 2: Institutional Arrangements	✓ ("Plantilla 1")	✓ ("Modèle 1")
GHGI Coordinator Responsibilities & Qualifications	✓	✓
Sector Lead Roles & Responsibilities: Energy	✓	✓
Sector Lead Roles & Responsibilities: IPPU	✓	✓
Sector Lead Roles & Responsibilities: Agriculture	✓	✓
Sector Lead Roles & Responsibilities: LULUCF	✓	✓
Sector Lead Roles & Responsibilities: Waste	✓	✓
Memorandum of Cooperation	✓	✓
Sample Scope of Work	✓	Ce document n'est pas encore disponible
Template 3: Methods and Data Documentation	✓ ("Plantilla 2")	✓ ("Modèle 2")
Confidentiality Agreement & Amendment	✓	✓
Template 4: QA/QC Procedures	✓ ("Plantilla 3")	✓ ("Modèle 3")
Template 5: Key Category Analysis	✓ ("Plantilla 5")	✓ ("Modèle 5")
Key Category Analysis Tool	Esta herramienta no esta disponible	Cet outil n'est pas encore disponible
Template 6: Archiving System	✓ ("Plantilla 4")	✓ ("Modèle 4")
Template 7: National Inventory Improvement Plan	✓ ("Plantilla 6")	✓ ("Modèle 6")
Inventory Progress Indicator Tool	Esta herramienta no esta disponible	Cet outil n'est pas encore disponible

Poll Question #3

Which component(s) of your inventory management system is the most well-documented? Select all that apply.

a. Institutional arrangements
b. Methods and data documentation
c. QA/QC procedures
d. Key category analysis
e. Archiving system
f. National inventory improvement plan
g. All of the above

Respond using Mentimeter link in the chat!

National GHG Inventory Compilation Cycle

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

- Finalize inventory
- Develop improvement plan
- Publish/submit inventory for UNFCCC reporting on time

- Conduct & document QA/QC procedures, such as basic peer review
- Revise estimates, based on QA/QC findings

Archive

Plan

Finalize and Submit

QA/QC and Archive
Improve

Collect

Review

Estimate

Write

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

- Collect Activity Data, Emission Factors
- QC all data

- Estimate emissions & removals
- Implement QC procedures
- Revise estimates, based on QA/QC findings
- Conduct uncertainty & key category analyses

- Document methodological approaches and references
- Write inventory report

Poll Question #5

Which stages are accounted for or included in your inventory compilation schedule? Select all that apply.

a. Plan
b. Collect
c. Estimate
d. Write
e. Review
f. Finalize and Submit
g. Archive
h. We don't have a schedule

Respond using Mentimeter link in the chat!

How to Use the Templates

How this Template Will Help!

How to Use the Templates will help the inventory team:

- Create a national GHG inventory schedule and record due dates for key stages of inventory compilation

- Track progress on completing the templates

Step 1: Inventory Compilation Schedule

Table 1-1. Inventory Compilation Schedule

	Stage	Due date (e.g., Month and year)	Comments
Improve	Plan		
	Collect		
	Estimate		
	Write		
	Review		
	Finalize & report		
	Archive		

Who completes this table: National Inventory Coordinator (NIC)

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Example of Table 1-1

Table 1-1. Inventory Compilation Schedule

	Stage	Due date (e.g., Month and year)	Comments
Improve	Plan	June 2021	• Sector leads: update list of planned improvements by June 15 • Inventory kick-off meeting on June 30
	Collect	December 2021	• Notify NIC of any new sources/sinks to include GHGI by December 31
	Estimate	June 2022	• Sector leads: to minimize version control issues, make sure to use the latest 1990-2020 files
	Write	October 2022	• For each category, clearly specify which IPCC tier methodology is used
	Review	January 2023	• Review period: January 1-January 31
	Finalize & report	April 2023	• GHG inventory due to UNFCCC Secretariat on April 15
	Archive	June 2023	• Sector leads: save all references (AD, EF) to GHGI 1990-2020 folder by June 30

Who completes this table: National Inventory Coordinator (NIC)

Step 2: Overall Template Progress

Table 1-2. Overall Template Progress

Template	Summary of progress towards completing the template	Obstacles and possible solutions	Status
1. How to Use the Templates			
2. Institutional Arrangements			
3. Methods and Data Documentation			
4. Description of QA/QC Procedures			
5. Description of Archiving System			
6. Key Category Analysis			
7: National Inventory Improvement Plan			

TIP: Revisit this table before initiating the next inventory cycle to recall and address & avoid obstacles.

Who completes this table: National Inventory Coordinator (NIC)

Example of Table 1-2
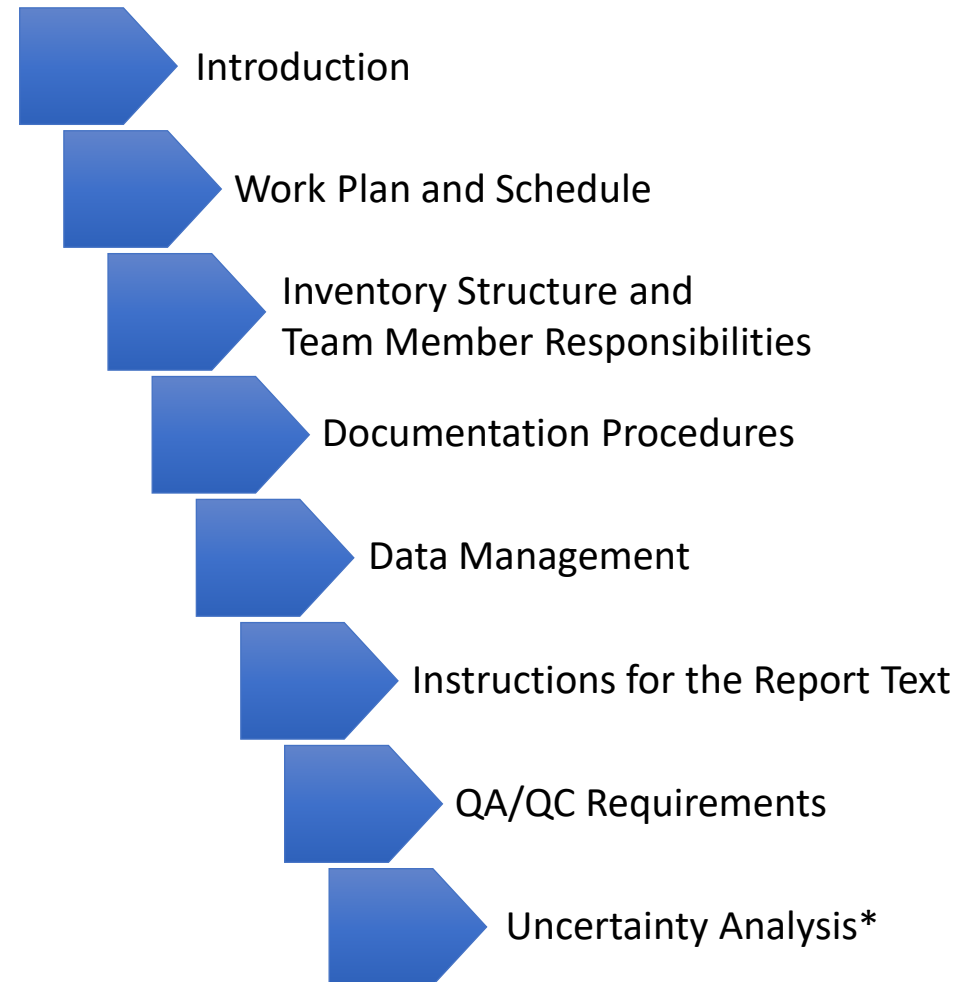
Table 1-2. Overall Template Progress

Template	Summary of progress towards completing the template	Obstacles and possible solutions	Status
1. How to Use the Templates	Inventory Compilation Schedule is completed. Template Progress tables updated.		In Progress
2. Institutional Arrangements	SLs are compiling table 2-3 for respective sectors	Obstacle: need better IPPU AD Solution: engage statistics ministry, industry associations,	In Progress
3. Methods and Data Documentation			Not Started
4. Description of QA/QC Procedures			Not Started
5. Description of Archiving System			Not Started
6. Key Category Analysis			Not Started
7: National Inventory Improvement Plan			Not Started

Who completes this table: National Inventory Coordinator (NIC)

Supporting Template: National GHG Inventory Inception Memorandum

NIC can customize the inception memo template to provide general guidance and convey the schedule to those working on the National GHG inventory (sector leads, QA/QC coordinator, uncertainty coordinator, consultants).

Participants may have more than one role, depending on staff resources, so keeping track is key. Components include:

- Introduction
- Work Plan and Schedule
- Inventory Structure and Team Member Responsibilities
- Documentation Procedures
- Data Management
- Instructions for the Report Text
- QA/QC Requirements
- Uncertainty Analysis*

Customizing the Template Workbooks

Read the background and instructions in green and complete each template.

Introduction to Template 7. National Inventory Improvement Plan

In the U.S. EPA's *Templates for Creating a National GHG Inventory System Manual*, this is Template 7. Its purpose is to help the National Inventory Coordinator (NIC) develop a National Inventory Improvement Plan (NIIP). Every country should have a comprehensive improvement plan that applies to the inventory, including methods, data, and the inventory system. The plan should focus mainly on improvements to key categories, and secondly on all other aspects of the inventory as resources permit, including any priority capacity-building needs identified during technical analysis of Biennial Update Reports. This is likely to involve identifying the steps or projects the country should prioritize to improve inventory arrangements and associated institutional capacity, in addition to the transparency, consistency, comparability, completeness, and accuracy of future inventories. The plan should also provide an explanation of why certain improvement options should be considered high priority, and enable budget planning and indicate the time horizon for implementation (e.g., near-term such as the next inventory or long-term meaning future inventories).

Preparing and reporting an improvement plan is consistent with future reporting requirements under the Enhanced Transparency Framework (ETF)[1]. To facilitate continuous improvement, countries should identify, regularly update and report information on areas of improvement. In addition to areas noted above, improvements should also address capacity constraints related to use of flexibility and in the future, responding to improvements identified by technical expert review teams.

The NIC should complete this template after completing Template 2 through Template 6 and after the inventory has been completed, because this template draws upon the improvement options identified in those templates and the inventory preparation process. You may also identify improvements to the inventory compilation schedule or cycle outlined in Template 1 that can help facilitate improvements, and include these in the improvement plan, as well.

When the tables are complete, delete the green text throughout this template. You may use the remaining text or tables for reporting or for your National GHG Inventory System Manual.

Follow the Instructions above each table below to complete this template and prepare a national inventory improvement plan.

Each template provides easy-to follow instructions for the user.

How to Use the Template Workbooks

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 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, below, 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. These tables may be used to guide efforts to strengthen institutional capacity and arrangements and increase the transparency, consistency, comparability, completeness, and accuracy of future inventories.

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

Purpose of table 7-1	To provide a clear overview of the improvement options identified in the U.S. EPA Templates for Creating a National GHG Inventory System Manual, specifically, Templates 2 through 6, and an explanation of why certain improvement options should be categorized as high-priority.
How to use the table when done	To guide efforts to increase the transparency, consistency, comparability, completeness, and accuracy of future inventories.
General instructions	Record all improvements listed in Templates 2 through 6. Also note improvements suggested during external assessments or reviews (e.g., International Consultation and Analysis). If you or another Party has evaluated your inventory using the Inventory Progress Indicator (IPI) tool, you may also record in Table 7-1 any improvements that would address inventory gaps noted in the evaluation. Add rows to the table as necessary.
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.
	Issue: Describe the issue and why an improvement is recommended.
	Improvement Option: Describe what will be done to address the issue.

Includes suggested narrative for the user's objectives. This text should be reviewed and customized for each user.
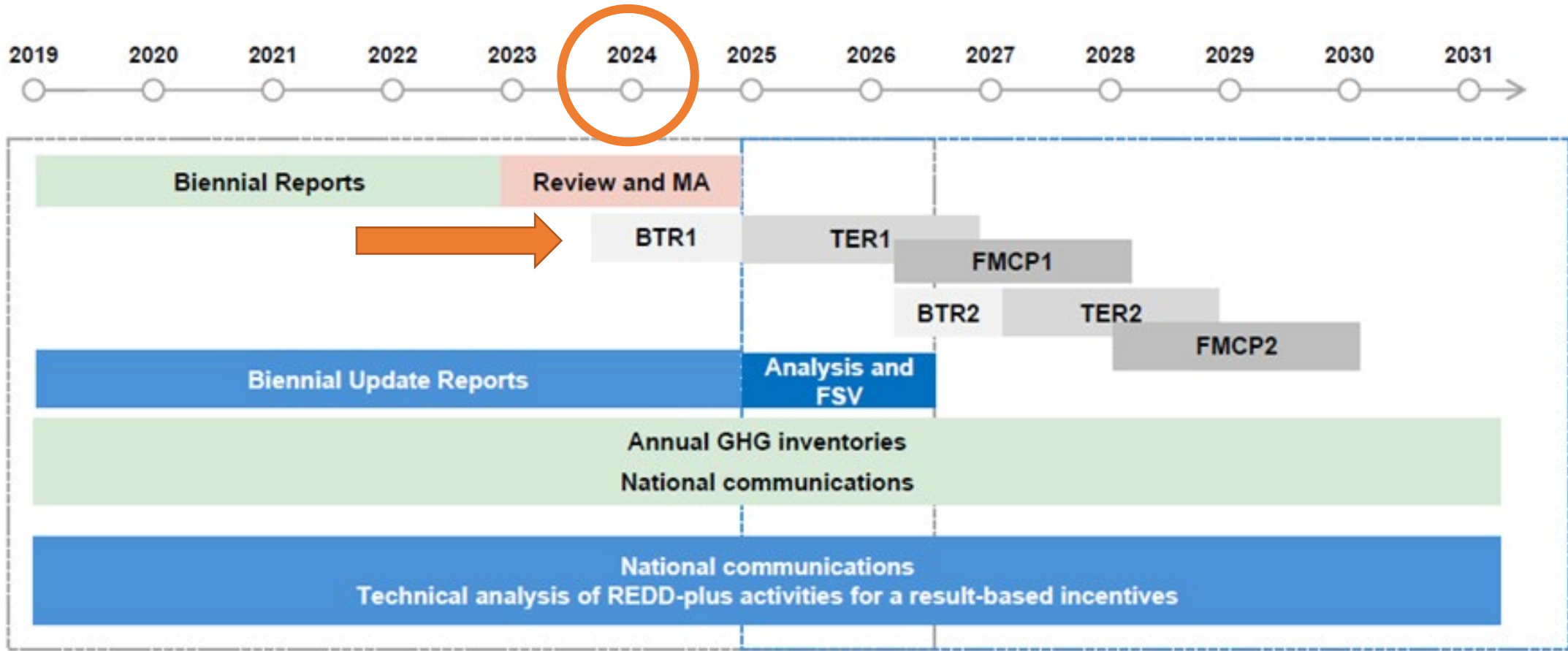
Green text is for your reference. DELETE green text in your final template once you are done.

Easy-to-follow instructions for each step in the template.

Completed templates can be compiled into a National Inventory System Manual
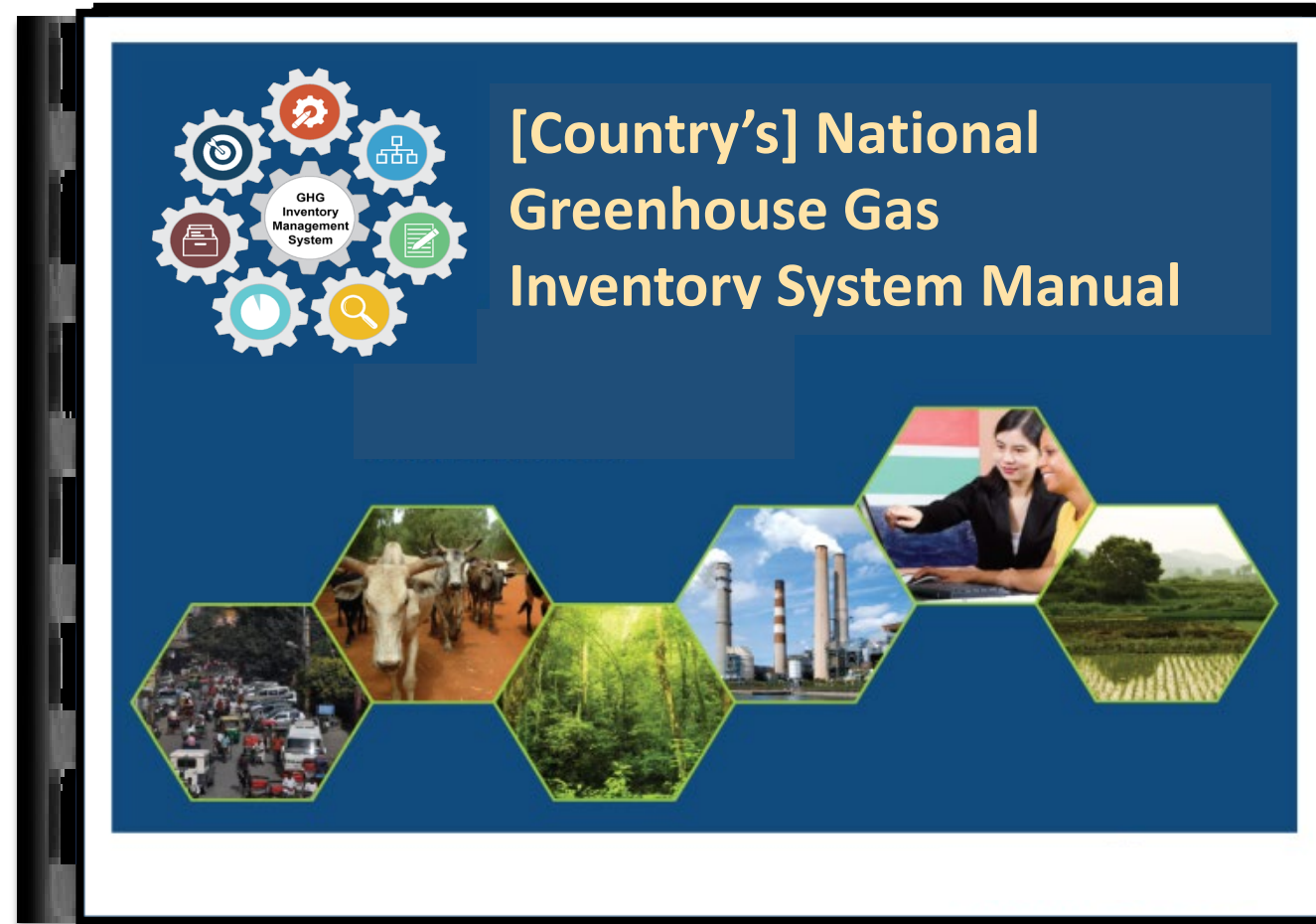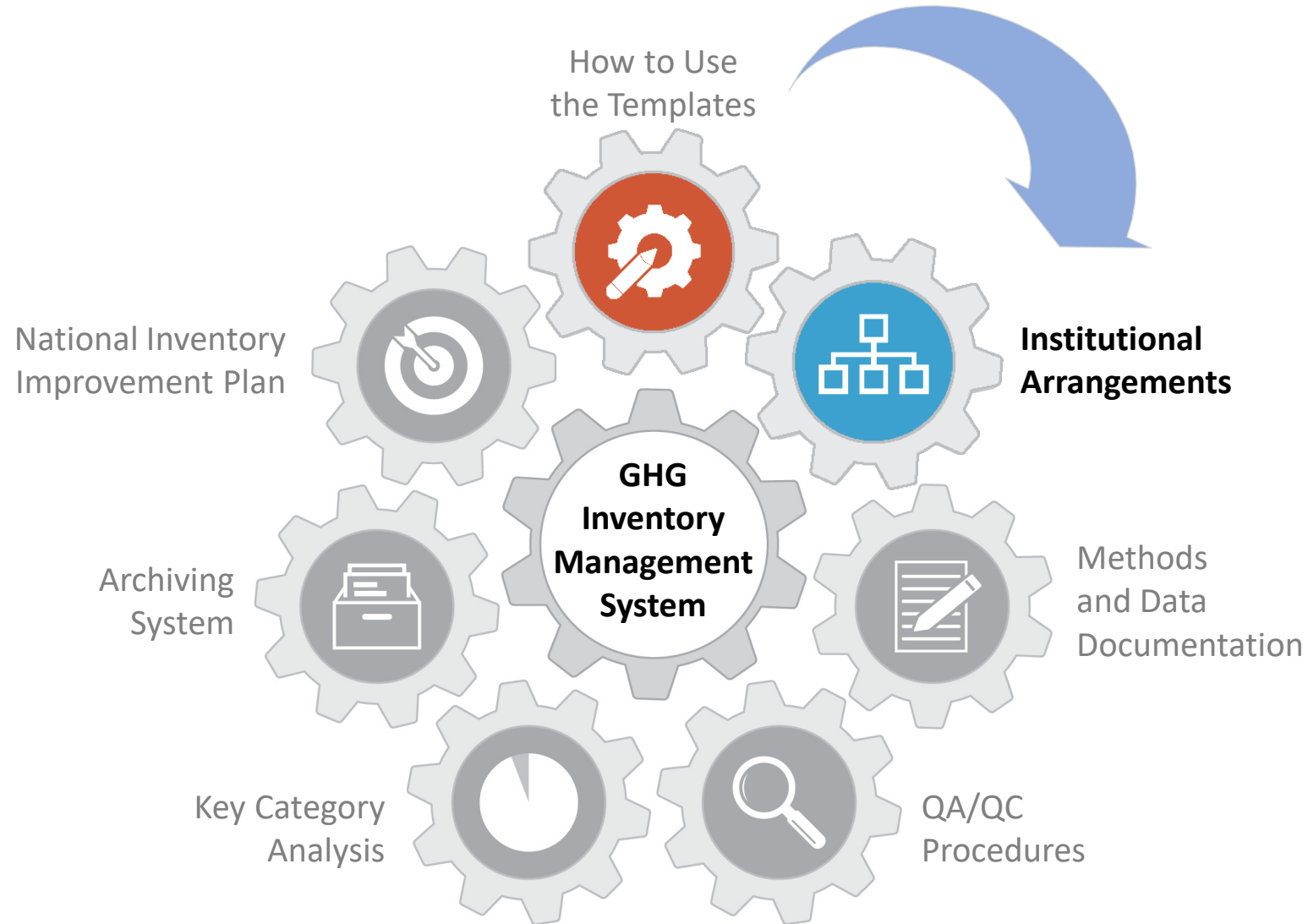
Enhanced Transparency Framework

Action Items from How to Use the Templates

1. Establish a suitable schedule for each stage of the compilation cycle
   - Consult with key stakeholders in your inventory as needed (e.g., your management, sector leads/compilers, data providers) to understand data availability and other needs or constraints.

2. Ensure documentation of national GHG inventory system by tracking progress towards completing all the templates

3. Prepare an inception memorandum for your GHG inventory to convey important guidance and the compilation schedule to your inventory compilation team
   - Coordinate the compilation teams and manage the complex development process

Next template…

- How to Use the Templates
- Institutional Arrangements
- National Inventory Improvement Plan
- GHG Inventory Management System
- Archiving System
- Methods and Data Documentation
- Key Category Analysis
- QA/QC Procedures

Thank You For Your Attention!

Amanda Chiu

ghgi.transparency@epa.gov

Toolkit for Building National GHG Inventory Systems
https://www.epa.gov/ghgemissions/toolkit-building-national-ghg-inventory-systems