

# Template 6: National Inventory Improvement Plan

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|  | **1: Institutional Arrangements** |
|  | **2: Methods and Data Documentation** |
| icon analysis.png | **3: Description of QA/QC Procedures** |
| icon archiving.png | **4: Description of Archiving System** |
|  | **5: Key Category Analysis** |
|  | **6: National Inventory Improvement Plan** |

Country Representative Contact Information

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| --- | --- | --- | --- |
| Country: |  | Postal Address: |  |
| Contact Name: |  | Phone Number: |  |
| Title: |  | E-Mail: |  |
| Organization: |  | URL: |  |

## Step-by-Step Instructions

STEP 1: Provide country-specific objectives

STEP 2: Summarize priorities for improving institutional arrangements

STEP 3: Summarize findings from the Key Category Analysis template

STEP 4: Summarize improvements identified in the Methods and Data Documentation (MDD) Background Document

STEP 5: Summarize potential QA/QC improvements

STEP 6: Summarize potential archiving improvements

STEP 7: Describe communication, outreach, and training activities/plans

STEP 8: Summarize potential improvements across all templates

STEP 9: Prioritize inventory improvements

STEP 10: Propose inventory improvement projects

## Instructions

* The purpose of a National Inventory Improvement Plan (NIIP) is to help countries identify and prioritize improvements to their national systems. A completed plan will guide future efforts to increase the transparency, consistency, comparability, completeness, and accuracy of future inventories. This template draws upon information from other report templates in this handbook to identify priority areas for improvement. Therefore, this template should be filled out after the other templates are completed.
* Countries should use this Word document to enter country-specific data and for preparing final plans.  The green text is used to provide instructions and guidance throughout the template as well as within tables. In the final plan, all green text should be deleted, and country-specific information should be used in its place.
* Step-by-Step instructions are listed in the box above. Each step is explained in detail in the corresponding section of the template.

## National Inventory Improvement Plan

### Objective

This National Inventory Improvement Plan (NIIP) presents actions that *[Country]* has identified to improve its national GHG inventory systems. The NIIP will guide future efforts to increase the transparency, consistency, comparability, completeness, and accuracy of future inventories. The plan addresses many of the shortcomings of the previous inventory, and will inform future inventory teams of needed improvements. These improvements have been identified through documentation of existing institutional arrangements, category-by-category analyses of methods and data, QA/QC procedures, developing archiving systems, and an assessment of key categories in *[Country]*.

* STEP 1: List any additional ways in which you have identified improvements. Describe any further objectives that your country may have in developing this plan.

### Institutional Arrangement Priorities

* STEP 2: Complete Table 6.1 using information from Table 1.9 in STEP 3 of the completed Institutional Arrangements template. Provide any additional information on how institutional arrangement priorities were identified.
* Insert as many rows within the table below as necessary to provide the detailed information for each sector’s institutional arrangements.

The National Inventory System involves all of the institutional, legal, and procedural arrangements made by a country for estimating anthropogenic emissions and removals, as well as the reporting and archiving of inventory information. Identified within a National Inventory System is the designated government agency responsible for producing a national greenhouse gas inventory, the key organizations that contribute data and methods, estimates, and the end-users of the inventory.

Preparing a comprehensive inventory requires establishing, identifying, and documenting all relevant contributors to the National Inventory. Assessing and documenting the status of existing institutional arrangements for inventory development will ensure continuity and integrity of the inventory, promote institutionalization of the inventory process, and facilitate prioritization of future improvements.

* Provide additional comments that describe details on institutional priorities in your country, such as how priority actions were identified.

Table 6.1 lists the priority actions identified in the Institutional Arrangements template.

Table 6.1: Priority Actions for *[Country's]* National Inventory System

|  |  |  |
| --- | --- | --- |
| Sector | Strengths in Management Structure of National Inventory System | Potential Improvements in Management Structure of National Inventory System |
|  |  |  |
|  |  |  |

Note: Taken from Table *1.9* in Section *1.3*, in the IA template.

* In the note to the table above, fill in the appropriate table and section numbers.



### Summary of Key Categories

* STEP 3: Complete Table 6.2 using the information in Table 5.1 through Table 5.3 of the completed Key Category Analysis template, as applicable. Include a short paragraph summarizing categories listed in this table. If your country has completed Table 5.1 through Table 5.3 in the Key Category Analysis template, include all key categories identified in these tables and note which assessment identifies each key category using the “key category assessment” column in Table 6.2. See additional instructions below.
* Insert as many rows within the table below as necessary to provide the detailed information for each category.

The concept of "key categories" was created by the IPCC as a way to help countries prioritize resources for improving national greenhouse gas inventories.[[1]](#footnote-1) Key categories have the greatest contribution to the overall level of national emissions. When an entire time series of emission estimates is prepared, key categories can also be identified as those categories that have the largest influence on the trend of emissions over time.[[2]](#footnote-2) In addition, when uncertainty estimates are incorporated into emission estimates, additional key categories are identified.

The results of the key category analysis provide a country with a list of their most important inventory categories. This list is a starting point from which a country can begin the process of improving their greenhouse gas inventory. To improve the national greenhouse gas inventory, it may be necessary to consider applying more accurate or higher tier methodologies, collect more detailed activity data, or develop country-specific emission factors. These activities all require additional resources, and it is not possible to make improvements for every inventory category. Therefore, *[Country]* has identified the categories listed in Table 6.2 as the most important categories contributing to national net emissions. Assessing the methods and data used to estimate emissions and/or removals from these key categories is integral to identifying priorities. These categories were identified through the Key Category Analysis, using software provided by U.S. EPA. A level assessment was conducted, identifying the largest categories accounting for at least 95% of the total estimate.

* Provide additional information on other key category assessments if they were conducted (such as Tier 2 methodologies incorporating uncertainty estimates).
* Write a short paragraph to provide context on the key categories for your country. Explain why certain categories represent a large portion of national net emissions. If possible, identify which categories have become increasingly important in recent years, or which are likely to be increasingly important in the future.

Table 6.2: Key Categories for *[Country]*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Key Category Assessment\* | IPCC Category Code | IPCC Category | Gas | Emissions  (Gg CO2 Eq.) | Percent Contribution to National Net Emissions | Cumulative Percent of National Net Emissions |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

Note: Taken from Table *x.x* in Section *x*, in the KCA template.

\* Assessments include: 1) current year level analyses, 2) base year level analyses, and 3) trend analyses.

* In the note to the table above, fill in the appropriate table and section numbers from the KCA template.

### Potential Category-Improvements

* STEP 4: Review the completed Methods and Data Document for each key category, and identify any improvements needed to improve emissions and/or removals estimates. These actions may include, but are not limited to, improving transparency, obtaining more complete activity data, using a higher-tiered methodology (e.g., IPCC Tier 2 instead of Tier 1), or using regional- or country-specific factors. Describe the problem and the potential improvement. Also, identify any other improvements needed to improve emissions and/or removals estimates for other categories in Table 6.3 (e.g., estimating emissions for a category not included in past inventories). These can be copied from the table in STEP 7 of the MDD Background Document.

Information for each key category is reported in section 6.3, which included a description of the category, relevance to *[Country]*, methodology, activity data, and emission factors used. Priority areas for improvement for these and other categories are identified using this documentation. Table 6.3 lists the problems and potential improvements for each category.

* Include any additional information on process used to identify improvements for each category.
* Insert as many rows within the table below as necessary to provide the detailed information for each category.

Table 6.3: Potential Improvements for Categories

|  |  |  |  |
| --- | --- | --- | --- |
| Sector | Category | Describe Problem | Potential Improvement |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Note: Taken from Table *2.X* in Section *X*, in the MDD template.

* In the note to the table above, fill in the appropriate table and section numbers.

Improvements planned for additional categories are identified in Table 6.4, which also includes categories for which emissions and/or removals have not been estimated to improve completeness of inventory.

* Table 6.4 is optional. If it is not used, it should be deleted, as should the sentence above, and successive tables should be renumbered.
* Insert as many rows within the table below as necessary to provide the detailed information for each category.

Table 6.4: Improvements Planned for Additional Categories

|  |  |  |  |
| --- | --- | --- | --- |
| Sector | Category | Describe Problem | Potential Improvement |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

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### Potential Improvements to QA/QC Procedures

* STEP 5: Review the completed QA/QC template, and identify any improvement needed to improve QA/QC procedures. These can be copied from the table in STEP 6 of the QA/QC template.
* Insert as many rows within the table below as necessary to provide the detailed information for each planned improvement.

Table 6.5: Potential Improvements to QA/QC procedures

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sector | Category | Describe Problem | Potential Improvement | |
| QA | QC |
|  |  |  |  | |
|  |  |  |  | |
|  |  |  |  | |
|  |  |  |  | |

### Potential Archiving System Improvements

* STEP 6: Review the completed Archiving template, and identify any improvements needed to improve inventory archiving procedures. These can be copied from the table in STEP 3 of the Archiving template.
* Insert as many rows within the table below as necessary to provide the detailed information for each planned improvement.

Table 6.6: Potential Improvements to the Archive System

|  |  |  |
| --- | --- | --- |
| Archive System Task | Describe Problem | Potential Improvement |
|  |  |  |
|  |  |  |
|  |  |  |

### Communication, Outreach, and Training Priorities

* STEP 7: Communicating the purpose of the inventory and results to policymakers is important. In this section, you should include priorities based on your current activities or plans for raising awareness of GHG inventory efforts or for training staff on the inventory system or practices. These plans and activities may include any of the following:
  + Communicating to inventory results to data providers
  + Scheduling stakeholder meetings
  + Raising awareness with government, academia, and the public
  + Providing feedback to government and associated institutions
  + Training or hiring inventory staff
  + Developing a transition plan to ensure a smooth transfer of inventory capacity when needed
  + Improving relationships with institutions

This section should be removed from this chapter if there are not current or planned communication, outreach, and training activities.

### Potential Improvements

* STEP 8: Enter the improvements identified (and summarized from each template in sections above) in Table 6.7 below.
* Insert as many rows within the table below as necessary to provide the detailed information for each improvement.

Table 6.7 provides a list of potential improvements across the national inventory system. These improvements should be incorporated into the national inventory system in future years.

Table 6.7: Improvements to National Inventory System

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Improvement # | Template | Sector  (if applicable) | Category  (if applicable) | Potential Improvement |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

### Prioritized List of Potential Improvements

* STEP 9: List up to 10 of the most important improvements identified from Step 8, above. Classify these improvements according to how critical they are: "High," "Medium," or "Low." For example, improvements to an agricultural category may be very important (High), while developing outreach materials may be a lower priority (Low). Insert a short paragraph discussing the highest priority items (see additional instructions below).
* Insert as many rows within the table below as necessary to provide the detailed information for each improvement.

This section prioritizes the most critical improvements needed, based on an assessment of the relative importance of improvements identified for institutional arrangements, categories, QA/QC procedures, archiving systems, key categories, additional categories, and communication, outreach, and training identified in Steps 2 through 8, above. By addressing these issues, *[Country]* can move toward producing a more complete and higher-quality inventory. Table 6.8 lists these potential improvements, and identifies the level of priority associated with each (High, Medium, or Low).

* Insert a paragraph describing the highest priority items and the areas of priority that are most applicable to your country (e.g., developing estimates for new categories, enhancing current methodologies, obtaining more reliable activity data, developing closer relationships with other institutions.)

Table 6.8: National Inventory Improvement Priorities

|  |  |
| --- | --- |
| Priority Level | Improvement Needed |
|  |  |

### Propose Inventory Improvement Projects

* STEP 10: Propose projects to address inventory improvement priorities listed in Table 6.8 to strengthen the National Inventory System and improve the quality and completeness of GHG estimates. Use the text below as a general guide and list potential projects in Table 6.9.
* Insert as many rows into the table below as necessary to provide the detailed information for each improvement.

Through an assessment of key categories, current methods and data, and institutional arrangements, we have identified *[insert number]* projects to address national inventory improvement priorities. Some of these improvements will require additional personnel, capital, or other resources to implement them.

* Provide one sentence on the objective of each project. For example, “Project 1 will enable us to estimate CO2 emissions from cement production, which may be a significant source of emissions in [Country]. This project will focus on collecting data on annual clinker production from the 3 cement facilities in [Country]. Currently estimates are based on national statistics for cement production, which carries more uncertainty.”

Table 6.9: Potential Projects for Improving the National Inventory System

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Potential Project | Estimated Personnel Needed | Estimated Cost ($) | Estimated Capital (equipment) Needed |
|  |  |  |  |  |

1. The 1996 IPCC Guidelines refer to “key source categories” which has been revised in subsequent IPCC Guidelines to “key categories” since sinks are also included in the analysis. [↑](#footnote-ref-1)
2. The 2006 IPCC Guidelines for National Greenhouse Gas Inventories (IPCC 2006) defines a key category as a “category that is prioritized within the national inventory system because its estimate has a significant influence on a country’s total inventory of greenhouse gases in terms of the absolute level, the trend, or the uncertainty in emissions and removals. Whenever the term key category is used, it includes both source and sink categories.” See Chapter 4, “Methodological Choice and Identification of Key Categories,” in IPCC 2006 for more information, < http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html>. [↑](#footnote-ref-2)