



**DEVELOPMENT OF A NATIONAL
SYSTEM
ON PREPARING GHG INVENTORIES
IN THE PHILIPPINES**

*By
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INTRODUCTION

Greenhouse gases (GHGs) which include carbon dioxide, methane, nitrous oxide, and the chlorine and fluorine based gases, play a major role in regulating the earth's temperature. Human activities, such as fossil fuel burning and land use changes, threaten to enhance this natural phenomenon by increasing the rate at which the earth's temperature has been rising in recent decades.

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The national GHG inventory is a critical instrument in climate change policy. When taken in its historical context, the inventory provides an immediate way of differentiating the responsibility of mitigating climate change through the reduction of GHG emissions. On the national scale, the inventory also provides an effective way of identifying those sectors which contribute significantly to a country's GHG emission total. It can be an important index of efficiency and sustainable development.



In cooperation with various government agencies, experts from the Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA) conducted the first national inventory of GHG emissions for 1990. This was with the assistance from the U.S. Country Studies Program. The Inter-Agency Committee on Climate Change initiated a similar activity in 1999, collaborating with a research team from the Manila Observatory, to complete an emissions inventory for 1994, this time under a grant from the UNDP-GEF Enabling Activity program. This inventory, together with information about national policies and vulnerability and adaptation assessments, was included in the Philippines' initial national communication to the UNFCCC.

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Compiling a national GHG emissions inventory in a developing country context is hampered by a variety of constraints, such as the lack of financial, technical, and human resources. One of the most critical barriers is the absence of an institutional environment that will facilitate the inventory process itself. Institutionalizing or regularizing the process on a national scale will help sustain the activity and effectively utilize existing resources and expertise.



The Institutional Environment: The Inter-Agency Committee on Climate Change

The Philippine Inter-Agency Committee on Climate Change (IACCC) was instituted in 1991 by virtue of Administrative Order No. 220 in recognition of the need to establish an intergovernmental mechanism to address issues related to climate change. The role of IACCC in institutionalizing the GHG inventory process is crucial because it acts as the coordinating body for all climate change activities in the Philippines.

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The IACCC is tasked to formulate policies and response strategies to climate change and to evaluate climate change-related projects insofar as these are consonant with national policy. It also approves any information submitted to the UNFCCC, including the national emissions inventory and the national communication.



Its membership formally includes representatives from 13 government agencies or offices and an umbrella network of non-governmental organizations (NGOs). The Secretaries of the Department of Environment and Natural Resources (DENR) and Department of Science and Technology (DOST) serve as co-chairs of the committee. At present, PAGASA represents DOST in this capacity.

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In addition to DENR, DOST, and PAGASA, committee members include the Department of Foreign Affairs (DFA), Energy (DOE), Transportation and Communication (DOTC), Public Works and Highways (DPWH), the National Economic and Development Authority (NEDA), the Philippine Senate, the Environmental Management Bureau (EMB-DENR), Forest Management Bureau (FMB), the National Mapping Resource and Information Agency (NAMRIA), and the Philippine Network on Climate Change (PNCC).



The EMB-DENR serves as the secretariat to the IACCC. It provides administrative support to the Committee and coordinates its meetings and activities. It is also responsible for drafting proposals for projects and policies, which are given to members for comments and review.

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The IACCC represents the country in the regular meetings of the UNFCCC, such as the Conference of the Parties, and the Subsidiary Bodies. In its ten years of existence, the committee's level of activity has varied according to its leadership and organizational constraints. Understanding these constraints on IACCC's role of institutional oversight is critical because these overlap with those that concern the institutionalization of the GHG inventory process.



**Constraints on
Institutionalization**

The development of the inventory system in the Philippines encountered some constraints especially on organizational/legal limitations and technical issues.



Organizational and Legal Limitations

1. Abstract nature of the issue

Many of the challenges posed by the existing institutional environment stem from the relatively abstract nature of climate change issues. A term such as “deforestation” invokes a sense of familiarity that most people associate with the sight of bare mountains; but the word “climate change” is still an intangible concept for the average person. Since government often behaves as a reactionary force to public pressure, it is understandable why the government as a whole has remained relatively inactive on climate change issues thus far. Consequently, few government policies exist that address the Philippine approach to climate change issues.



2. Lack of awareness

One effect of the abstract nature of climate change is a lack of awareness about the variety of issues it touches. If stakeholders were more aware of the impacts that climate change can have on local people – especially with respect to the Philippines’ vulnerability to these impacts – they might be more likely to view national commitments such as the greenhouse gas inventory as a priority.



3. Unstable policy environment

Within agencies that have already recognized climate change activities as a priority, the continuity of these activities is perennially threatened by every change in administration. It is the standing secretaries of these agencies who have designated funds and personnel to implement these programs. The priorities of subsequent secretaries may not include comparable allocations for climate change activities.



4. Poor communication among organizations with data

The coordination among groups with access to activity data – in both private and public sectors – is insufficient or nonexistent for compiling the inventory in an efficient manner. Individual government agencies do not regularly share data, they sometimes require private firms to report the same data. Inadequate coordination hinders the information management aspect of the inventory process and leads to problems in data access and consistency.



5. Inability to require submission of data

The IACCC cannot require GHG emission source sectors to report the data necessary to complete the inventory without an appropriate directive. Since private firms and government agencies are not mandated to produce some of the essential figures, some sectors lack a system capable of providing the IACCC with the input that it needs. This lack of authority on the part of the IACCC prevents the inventory team from completing the inventory without voluntary cooperation.



6. Conflict of interest

Private firms refuse to comply with requests for data from government agencies because they believe that some of these data are proprietary and thus might compromise their long-term viability. While some fear that their high levels of emissions would damage their public image, others see the possibility of mandatory emissions reductions following a period of voluntary monitoring as something that could threaten their continued operation. Consequently, they are reluctant to report emissions as individual entities.



7. Insufficient funding

Most agency budgets provide little or no funding for information systems management, emission factors research, or staff training related to climate change issues. As a result, technical expertise and potentially useful statistical resources remain untapped in many cases.



8. Inadequate number of personnel

Without a directive to tackle matters related to climate change, government personnel cannot be officially assigned to include climate change activities in their daily work. Since this means that any government staff who attend to IACCC matters do so on their own time and in addition to their regular duties, many others are unwilling to get involved. However, regular staff operations overlap with some components of the inventory process; a system in place ensures that the workload demanded of agency personnel is minimal.

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Technical Issues

Technical issues were encountered during the development of the system and were also encountered by those involved in the inventory compilation. These are:

1. Inconsistent and unreliable information
2. Inefficient data management systems
3. Absence of localized emission factors
4. Lack of a process for quality assurance and quality control




Institutionalizing the GHG inventory process

By using the experiences both in the international and domestic context, the Philippine GHG inventory process benefited from the constraints encountered and the strategies that worked in these contexts.

The Philippines, as a developing country, was able to relate better to the levels of institutional development in non-Annex I countries than those in their Annex I counterparts.

Institutionalization of the Philippine inventory system included a phase wherein international donors funded its development. The mechanisms used to develop the GHG inventory systems were extremely transparent.


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Keeping in mind the lessons learned from institutionalization in other contexts and the experience of agencies involved in the inventory process, the Philippines formulated strategies for systematizing and regularizing the compilation of the national GHG emissions inventory.

Four central strategies were employed in order to institutionalize the inventory process. These are:

- a. informing strategically positioned people about concerns of climate change and training people in the inventory process;
- b. strengthening the IACCC as an institution;
- c. establishing within the IACCC a technical working group on the GHG inventory; and
- d. developing an information system to prepare the inventory.



A. Awareness building and technical training

The complex nature of climate change prevents many people from understanding it which leads to indifference toward or ignorance about the inventory process.

To encourage cooperation with the inventory process, a basic understanding of climate change issues must be achieved at both the technical and managerial levels of the agencies involved in the process. Government, executive and legislative decision-makers were briefed regularly on the ever-evolving issues of climate change.

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These briefings were designed in such a way as to facilitate the formulation of mandates needed to act on various climate change concerns, one of which is the inventory process. Technical staff were also informed since they were the ones who are involved in inventory compilation.

Technical capacity was also developed among those involved in the inventory process and those who are in the position to train others within their organizations.



B. Institutional strengthening of the IACCC

Three pre-requisites were established to pursue the existing authority of the IACCC. These are:

- A. A Full Time Secretariat
- B. Continuous financial support
- C. Ability to enforce compliance

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C. Technical Working Group on GHG Inventory

An overall central steering committee composed of organizations with experience in conducting inventories and representatives from the lead agencies of each of the Sectoral Working Group (SWGs) is called the GHG Technical Working Group (GHG-TWG).

The GHG-TWG shall oversee all technical aspects of the inventory process, focus on cross-cutting issues, act as final mediator in any dispute among members of the SWGs, and will be responsible for synthesizing the sectoral inventory results from the SWGs into the final national inventory.

By providing administrative support for the technical functions of the members, the IACCC Secretariat will act as the driving force behind the completion of the periodic inventory.




The GHG-TWG served as the venue to formalize these new ties and to solidify pre-existing relationships, allowing contributing organizations to discuss difficulties or conflicts that arise. In order to establish a continuous system for completing the inventory, the GHG-TWG specified four components of the reporting process:

- ❖ A timetable for agencies to submit data,
- ❖ The flow of information from the source agencies to the central team,
- ❖ The level of data analysis to be conducted at each reporting level, and
- ❖ A strategy for ensuring compliance with the established requirements.




D. GHG information management system

Considering the volume of data required to complete the inventory, a process without an organized data management system is doomed to fail. In the system currently employed to source the data and complete the inventory worksheets, too many people were needed to sift through files and convert measurements from one reporting format to another. In order to maintain a continuous reporting schedule, more efficient methods were developed for compiling the statistics necessary to complete the reports.



To facilitate data submission by the reporting agencies and to minimize paperwork among agencies, a computer/internet based system for reporting GHG emissions was established. Implementing this type of database would eliminate the need for so many “middle men” in the inventory process. It would minimize the time required to compute the emissions from the activity data by enabling a user to input the activity data directly into the database, with the conversion factors already programmed into the system.

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Freed from the need to evaluate worksheets for human error and to discuss minute details of translating data into actual emissions, members of the GHG-TWG and SWGs would have more time to focus on cross-cutting issues, local emissions research, managing uncertainties and designing a more complete QA/QC process.



Good Day!



Thank You....