Current Status of Climate Change Mitigation and Adaptation

Philippines, Climate Change Commission
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   • Measures
   • Institutional Structure

2. Overview of GHG inventory development
   • National Policy & Plan
   • Institutional Structure

3. Other Issues
Philippine CC Policy Initiatives

1991: IACCC Established (A.O. 220)

2 August 1994: UNFCCC Ratified

20 November 2003: Kyoto Protocol Ratified

2000: Initial National Communication Submitted

2006: Creation of the Inter-Agency Working Group and a Program Steering Committee for the Adaptation to Climate Change

20 February 2007: Presidential Task Force on Climate Change (PTFCC) created (A.O. 171)

15 August 2007: A.O 171 amended with PTFCC Chairmanship transferred from DENR to DOE (A.O. 171-A)

July 2009: Climate Change Act of 2009 (RA 9729)

2010: National Framework Strategy on Climate Change

2010: Philippine Strategy on Climate Change Adaptation

2011: National Climate Change Action Plan
National Framework Strategy on Climate Change

CLIMATE CHANGE
- increasing temperatures
- changing rainfall patterns
- sea level rise
- extreme weather events

VISION:
A climate risk-resilient Philippines with healthy, safe, prosperous and self-reliant communities, and thriving and productive ecosystems

IMPACTS AND VULNERABILITY
- Ecosystems (River Basins, Coastal & Marine, Biodiversity)
- Food security
- Water resources
- Human health
- Infrastructure
- Energy
- Human society

SUSTAINABLE DEVELOPMENT
Goal: To build the adaptive capacity of communities and increase the resilience of natural ecosystems to climate change, and optimize mitigation opportunities toward sustainable development.

MITIGATION
- Energy Efficiency & Conservation
- Renewable Energy
- Environmentally Sustainable Transport
- Sustainable Infrastructure
- National REDD+ Strategy
- Waste Management

ADAPTATION
- Enhanced Vulnerability and Adaptation Assessments
- Integrated Ecosystem-Based Management
- Climate-Resilient Agriculture
- Water Governance & Management
- Climate-Responsive Health Sector
- Disaster Risk Reduction & Management

CROSS-CUTTING STRATEGIES

MEANS OF IMPLEMENTATION
Multi-stakeholder Partnerships
Hiring
Valuation
Policy Planning and Mainstreaming
# National Climate Change Action Plan 2011-2028

**GOAL**
To build the adaptive capacities of women and men in their communities, increase the resilience of vulnerable sectors and natural ecosystems to climate change, and optimize mitigation opportunities towards a gender-responsive and rights-based sustainable development.

<table>
<thead>
<tr>
<th>ULTIMATE OUTCOMES</th>
<th>1.0 Enhanced adaptive capacity of communities, resilience of natural ecosystems, and sustainability of built environment to climate change.</th>
<th>2.0 Successful transition towards climate-smart development.</th>
</tr>
</thead>
</table>
| INTERMEDIATE OUTCOMES | 100 Food Security  
Availability, stability, accessibility, affordability, safe and healthy food ensured amidst climate change. | 200 Water Sufficiency  
Water resources sustainably managed and equitable access ensured. | 300 Ecosystem and Environmental Stability  
Enhanced resilience and stability of natural systems and communities. | 400 Human Security  
Reduced risks of the population from climate change and disasters. | 500 Climate-smart Industries and Services  
Climate-resilient, eco-efficient and environment-friendly industries and services developed, promoted and sustained. | 600 Sustainable Energy  
Sustainable renewable energy and ecologically efficient technologies adopted as major components of sustainable development. | 700 CC Knowledge and Capacity Development  
Enhanced knowledge on and capacity to address climate change. |
Measures

- **Mitigation**
  - Department of Energy (DOE) – Renewable Energy (CDM Projects: Wind Farm, Biodiesel 5%)
  - DA – Organic Law (Organic Farming), Capacity Development for farmers
  - DOTC – Environmentally Sustainable Transport
  - Waste – Solid Waste Management
  - Forestry – National Greening Project
  - CCC – Conserve-Protect-Restore (CPR)
Measures

Adaptation

- Department of Environment and Natural Resources (DENR) - Adaptation to Climate Change and Conservation of the Biodiversity in the Philippines (AccBio) Project – Philippine Strategy on Adaptation Measures.

- CCC - Enhanced Vulnerability and Adaptation Assessments – VA Tools (scoping)

- Integrated Ecosystems Based Management - Ecotown
Measures

**Adaptation**

- Department of Agriculture (DA) - Climate Responsive Agriculture – DA has Agriculture Plan (R&D crop varieties that are resilient to extreme climate, climate proofing of agricultural structures, Irrigation and rain fed crops)
- Department of Public Works and Highways (DPWH) and Department of Education - Water Governance and Management (flood control and water catchment)
**Measures**

- **Adaptation**
  - Department of Environment and Natural Resources (DENR) - Adaptation to Climate Change and Conservation of the Biodiversity in the Philippines (AccBio) Project – Philippine Strategy on Adaptation Measures.
  - CCC - Enhanced Vulnerability and Adaptation Assessments – VA Tools (scoping)
  - Integrated Ecosystems Based Management - Ecotown
Adaptation

- Department of Health (DOH) – Surveillance on vector diseases
- National Disaster Risk Reduction Management (NDRRM) - MOU with CCC
  - RA 10121. Calamity fund can be used for DRR measure
  - Maps of vulnerable areas
Institutional Structure

**CLIMATE CHANGE COMMISSION**

- **H.E. BENIGNO S. AQUINO III**
  - Chairperson
- **MARY ANN LUCILLE L. SERING**
  - Commissioner/Vice Chairperson
- **HEHERSON T. ALVAREZ**
  - Commissioner
- **NADEREV M. SAÑO**
  - Commissioner

**ADVISORY BOARD**

- **Members**
  - Department of Agriculture
  - Department of Energy
  - Department of Environment and Natural Resources
  - Department of Education
  - Department of Foreign Affairs
  - Department of Health
  - Department of Interior and Local Government
  - Department of National Defense / NDRRMC
  - Department of Public Works and Highways
  - Department of Science and Technology
  - Department of Social Welfare and Development
  - Department of Trade and Industry
  - Department of Transportation and Communications
  - Director General of National Economic and Development Authority / PDDG Chair
  - Director General of the National Security Council
  - Chair of the Commission on Filipino Women

- **Presidents**
  - League of Provinces
  - League of Cities
  - League of Municipalities
  - Urban Planning Committee

- **Sectorsal Representation**
  - Academic
  - Business Sector
  - Non-Governmental Organizations

*At least one (1) of the three (3) sectoral representatives shall come from the Disaster Risk Reduction Community*

*Commissioners have a fixed term of six (6) years*
GHG Inventory and Development

Types of GHG Accounting

- National Inventory
- LGU Inventory
- Corporate GHG Inventory
GHG Inventory for the 1st National Communication

- Base year 1994
- Sectors
  - Energy
  - Industry
  - Agriculture
  - LUCF
  - Waste
- Submitted in 2000
Figure 2.1. 1994 GHG Emissions from the Four Non-LUCF Sectors of Energy, Agriculture, Industry, and Waste.

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>CO₂ Emissions (ktone)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>50,038</td>
</tr>
<tr>
<td>Industry</td>
<td>10,503</td>
</tr>
<tr>
<td>Agriculture</td>
<td>33,130</td>
</tr>
<tr>
<td>Wastes</td>
<td>7,094</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100,864</strong></td>
</tr>
</tbody>
</table>

Figure 2.2. Net GHG Emissions with the LUCF Sector.
GHG Inventory for the 2\textsuperscript{nd} National Communication

- Base year is 2000
- To be submitted this year to the UNFCCC
- Inventory part of the SNC accomplished by 2009
Used the methodologies provided in the 1996 IPCC Guidelines
UNFCCC software version 1.3.2
Base year: 2000
Recipe and Reference Manuals
Database for the 2000 Philippine GHG Inventory was created
Capacity building workshops were conducted for each of the sectors
Database for the 2000 Philippine GHG inventory including worksheets and documentation was created for inventory members.

Developed in order to have a central repository of all inventory files.
Suggested Institutional Structure for future GHG Inventory

- Climate Change Commission
  - Secretariat
    - Energy Sector Department of Energy
      - Policy and Planning Bureau
      - Natural Forest Division
    - LUCF Sector Department of Environment and Natural Resources
      - Forest Management Bureau
      - EMB Regional Offices
    - Industry Sector Department of Environment and Natural Resources
      - Environmental Management Bureau (Central Office)
    - Agriculture Sector Department of Agriculture
      - Bureau of Agricultural Statistics
    - Waste Sector Department of Environment and Natural Resources
      - Environmental Management Bureau
## Second National Communication

### Overall 2000 GHG Emissions Per Sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>CO₂ (in Gg)</th>
<th>CH₄ (in Gg)</th>
<th>CH₄ GW Potential</th>
<th>N₂O (in Gg)</th>
<th>N₂O GW Potential</th>
<th>CO₂-equivalent Emission in Gg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>62,499.10</td>
<td>304.14</td>
<td>21</td>
<td>2.52</td>
<td>310</td>
<td>69,667.24</td>
</tr>
<tr>
<td>Industrial Processes</td>
<td>8,604.74</td>
<td>0.24</td>
<td>21</td>
<td>-</td>
<td>-</td>
<td>8,609.78</td>
</tr>
<tr>
<td>Agriculture</td>
<td>-</td>
<td>1,209.79</td>
<td>21</td>
<td>37.41</td>
<td>310</td>
<td>37,002.69</td>
</tr>
<tr>
<td>LUCF</td>
<td>(104,040.29)</td>
<td>(46.28)</td>
<td>21</td>
<td>(0.32)</td>
<td>310</td>
<td>(105,111.37)</td>
</tr>
<tr>
<td>Waste</td>
<td>-</td>
<td>500.67</td>
<td>21</td>
<td>3.50</td>
<td>310</td>
<td>11,599.07</td>
</tr>
<tr>
<td>Totals</td>
<td>(32,036.45)</td>
<td>1,968.56</td>
<td></td>
<td>43.11</td>
<td></td>
<td>21,767.41</td>
</tr>
</tbody>
</table>
Key Findings/Challenges/Recommendations

**Energy Sector**
- GHG emissions from the Energy Sector already semi-institutionalized in the Department of Energy
- Need to develop the capacity of the Department of Transportation and Communications to estimate GHG emissions from the transport sector
- Explore the possibility of getting data needed to move to Tier 2 approach for emissions calculation

**Industry Sector**
- Difficulty in getting GHG emissions data as there is no single institution within the government that acts as the main repository of GHG data
- Relied heavily on private entities and industry associations for most of the inventory data
- Need to identify a point agency which will be responsible for establishing and maintaining a database of information necessary for the estimation of emissions at a national level
Key Findings/Challenges/Recommendations

**Agriculture Sector**

- Used IPCC default values except for rice cultivation. Country emission-factors for rice cultivation in the Philippines derived from research findings of IRRI.
- Apart from rice cultivation, this sector used Tier 1 method to estimate GHG emissions. Lack of disaggregated data and country-specific EF makes it difficult to move to a higher tier.
- Estimate of GHG emissions from grassland burning was confronted with inadequate data on the area of grassland in the Philippines and management practices applied.
- No central repository of emissions data for the sector.
Key Findings/Challenges/Recommendations

- **Waste Sector**
  - Most of the data used were from the National Capital Region only
  - Emissions from waste incineration were not included
  - Methane emissions from industrial wastewater treatment was calculated using the First Order Decay model

- **LUCF**
  - The huge difference between the 1994 and 2000 data was largely due to data availability and different methodologies used
Key Findings/Challenges/Recommendations

- **Mitigation Analysis**
  - Continue to develop in-country capacity to conduct mitigation analysis, which includes developing the capacity of institutions tasked with database management and analysis.
  - Given limited resources in developing countries such as the Philippines, mitigation potential needs to be evaluated in tandem with adaptation potential.
  - Developing and expanding the base of inventory and mitigation experts will help in assuring better quality in the analysis.
Key Category Analysis

- CO2 removal from changes in forest and other woody biomass stock (36.8%);
- CO2 emissions from forest and grassland conversion (13.1%)
- CO2 from mobile combustion – road vehicles (9.7%);
- CH4 emissions from rice production (7.8%); and
- CO2 emissions from manufacturing industries and constructions (4.3%)
Key Category Analysis w/o LUCF Sector

- CO2 emissions from mobile combustion-road vehicles (19.3%);
- CH4 emission from rice production (15.6%);
- CO2 emission from manufacturing industries and construction (8.5%);
- N2O direct and indirect emissions from agricultural soils (8.5%); and
- CH4 emission from enteric fermentation in domestic livestock (6.3%).
LGU GHG Inventory

- LGUs start to conduct their own GHG inventory but they still need guidance
- Possibility of including GHG Inventory for their Local Climate Change Action Plan (?)
- Helps them identify mitigation and adaptation measures
Corporate GHG Accounting

- PhilGARP project (2006)
  - Voluntary GHG inventory of companies
  - Confidentiality issues
- What protocols to be used
- Increasing awareness of the need for GHG accounting
- GHGMI through CEnergy project of USAID
Current Status of Philippine CDM Project Activities  As of 1 July 2011

- **No. of CDM applications**
  - 98 = 26 large and 72 small scale
  - = At least 3.6M CERs

- **No. of LOAs issued**
  - 89 = 27 large scale and 62 small scale
  - 2,314,822 CERs large + 1,250,195 CERs small scale
  - = 3,565,017 CERs (3.5M CERs)

- **No. of Registered CDM projects**
  - 54 = 2,104,988 CERs (2.1M)
  - 11 large (1,248,312+ CERs) and 43 small scale (328,992+ CERs)
  - Philippines rank no. 9; 1.7% of the total 3,214 project activities

- **159,023 CERs issued** - 3 projects: Northwind Bangui Bay Project, QC Controlled Disposal Facility Biogas Emissions Reduction Project and Phil. Sinter Corp. Waste Heat Recovery Power Generation Project
Registered Projects by Host Party
As of 30 June 2011

Registered project activities by host party. Total: 3,214

<table>
<thead>
<tr>
<th>Host Party</th>
<th># of Registered CDM Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 China</td>
<td>1443</td>
</tr>
<tr>
<td>2 India</td>
<td>679</td>
</tr>
<tr>
<td>3 Brazil</td>
<td>193</td>
</tr>
<tr>
<td>4 Mexico</td>
<td>127</td>
</tr>
<tr>
<td>5 Malaysia</td>
<td>93</td>
</tr>
<tr>
<td>6 Indonesia</td>
<td>69</td>
</tr>
<tr>
<td>7 Vietnam</td>
<td>61</td>
</tr>
<tr>
<td>8 Republic of Korea</td>
<td>58</td>
</tr>
<tr>
<td>9 Philippines</td>
<td>54</td>
</tr>
<tr>
<td>Others</td>
<td>437</td>
</tr>
<tr>
<td>Global Total</td>
<td>3,214</td>
</tr>
</tbody>
</table>

Philippines: 2,104,988 expected average annual CERs
Other Issues

- **Third National Communication**
  - Start proposing for the TNC hopefully this year
  - Base year to be determined
Challenges

- Data quality, data availability and data accessibility
- Different methodologies used for INC and SNC making it difficult to compare results
- Lack of country-specific emission factors
- Need to harmonize data available with what the UNFCCC worksheets need
- Institutionalizing the GHG inventory
Opportunities

- Process of mainstreaming GHG inventory to different critical agencies/ministries
  - DOE, NSCB, BAS, etc

- Capacity building initiative – SEA GHG project
  - LULUCF and Agriculture sector
Thank You!

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