Nineteenth Asia-Pacific Seminar on Climate Change
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– From Copenhagen to Cancun-"

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"Mongolia: Lesson learned from capacity building of GHG inventory and national communications"

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- National System for the GHG inventory preparation
- GHG Inventories for National Communications
- Lessons Leaned
- Needs and Gaps to implement the NAMAs in a MRV Manner

Institutional Arrangements for the GHG inventories

- The Ministry of Nature, Environment and Tourism (MNET) is the main responsible authority for preparation of GHG inventories and national communications with the support of various related ministries as well as academy, universities, private sector, local communities and NGOs. The MNET is the operational focal point for multilateral environmental agreements.
- The Inter-agency National Climate Committee (NCC) established in 2000 is responsible to provide policy advice and guidance to the climate change related issues. The NCC is chaired by the Minister for Nature, Environment and Tourism and has memberships from various relevant ministries and agencies.
- The Thematic Working Group (TWG) on GHG Inventory and Mitigation Analyses is composed of experts from public and private sectors, academic institutions and NGOs.

National System for the GHG inventories

- In order to prepare periodically GHG Inventories and to improve its quality, a ***National Manual of Procedures of Preparation of GHG Inventories*** was developed.
- This *Manual* is a technical document to prepare National Greenhouse Gases Inventories for submission to the Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC).
- The *Manual* supports the development of GHG inventories that are transparent, documented, consistent over time and complete. It also assists the country to produce comparable inventories that assessed for uncertainties, subject to quality control and quality assurance, and efficient in the use of resources.

National System for the GHG inventories

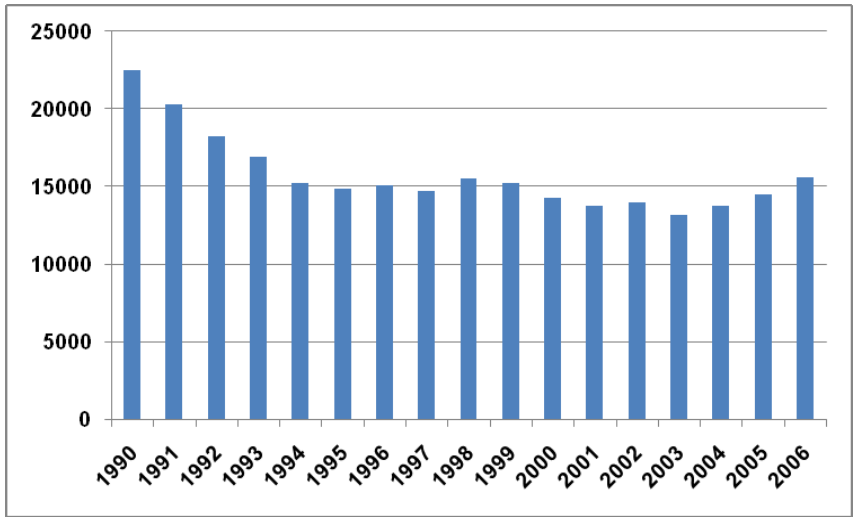
The Manual treats topics as:

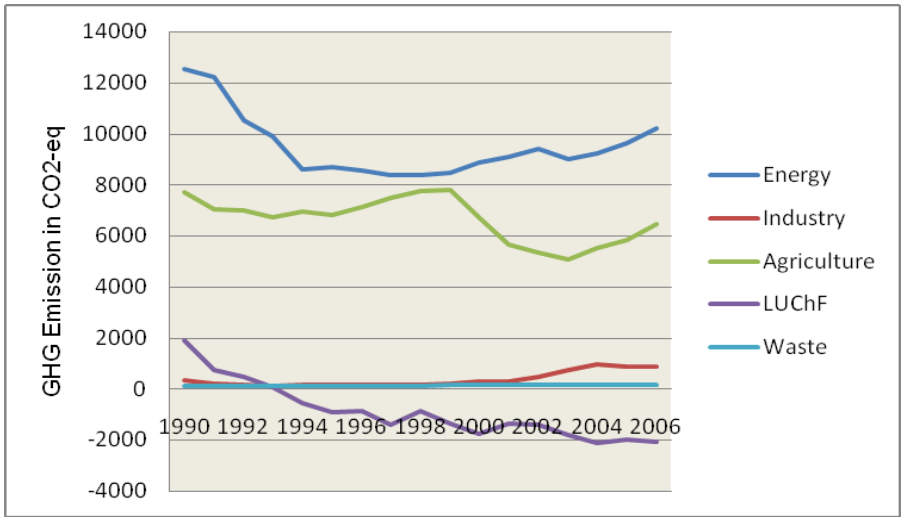
- Legal and Institutional Arrangements;
- Preparation of activity data;
- Choice of estimation methods suited to national circumstances;
- Quality assurance and quality control procedures to enable cross-checks during inventory compilation;
- Uncertainties at the source category level;
- Also shows how and when to recalculate previously prepared emission estimates to ensure consistent estimation of trends;
- Archiving, Reporting and Documentation.

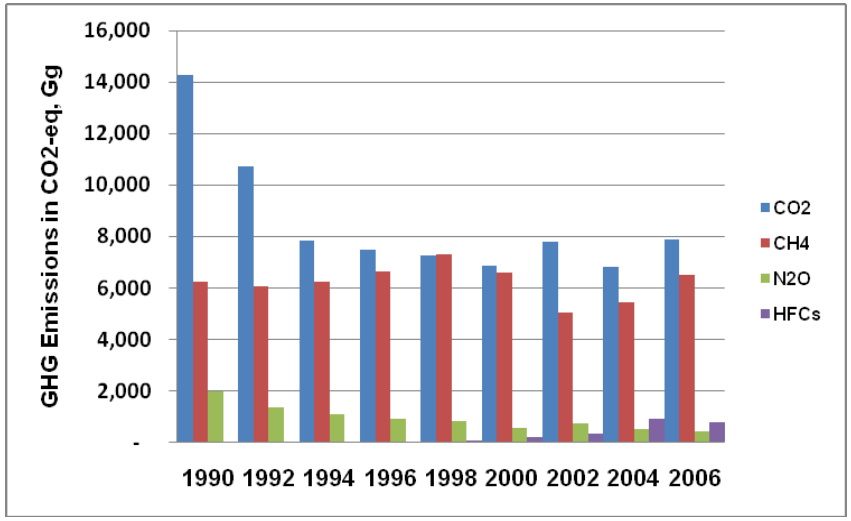
GHG Inventories for National Communications

- The Initial National Communication included GHG inventories for the period 1990-1998. The INC was submitted to the COP/UNFCCC in 2001.
- Since INC, significant structural changes have been occurred in the most important sectors of the national economy, accordingly the system of collection and processing of statistical information has been changed. Therefore, a more differentiated and detailed approach to GHG inventory preparation was required for SNC.
- In new inventories for SNC:
  - all initial activity data and emission factors were updated
  - GHG emissions for the period 1990-1998 were re-estimated
  - GHG emissions for the period 1999-2006 were newly calculated.

Development of time series

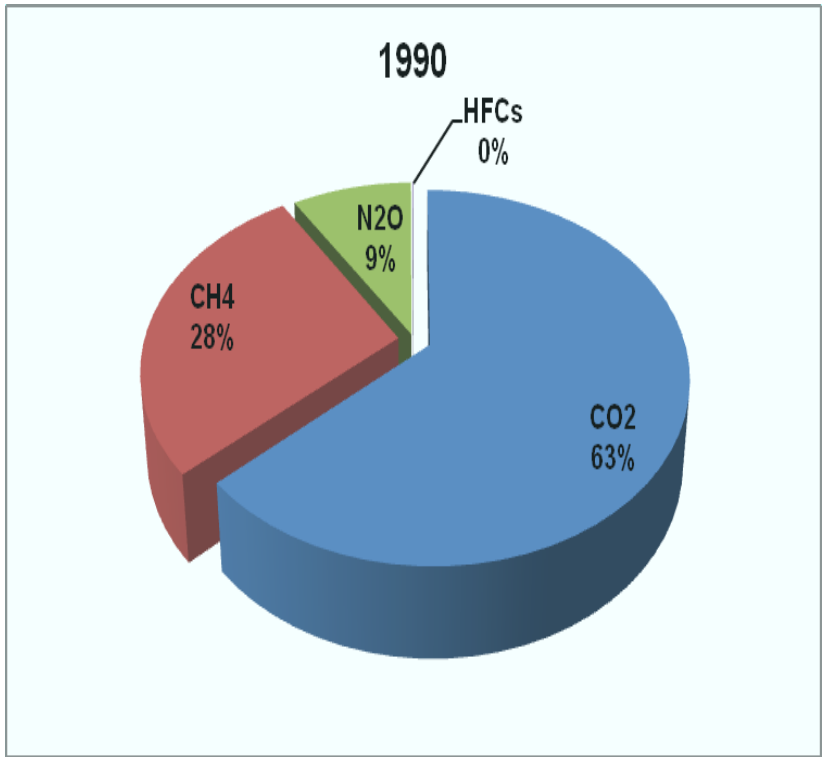


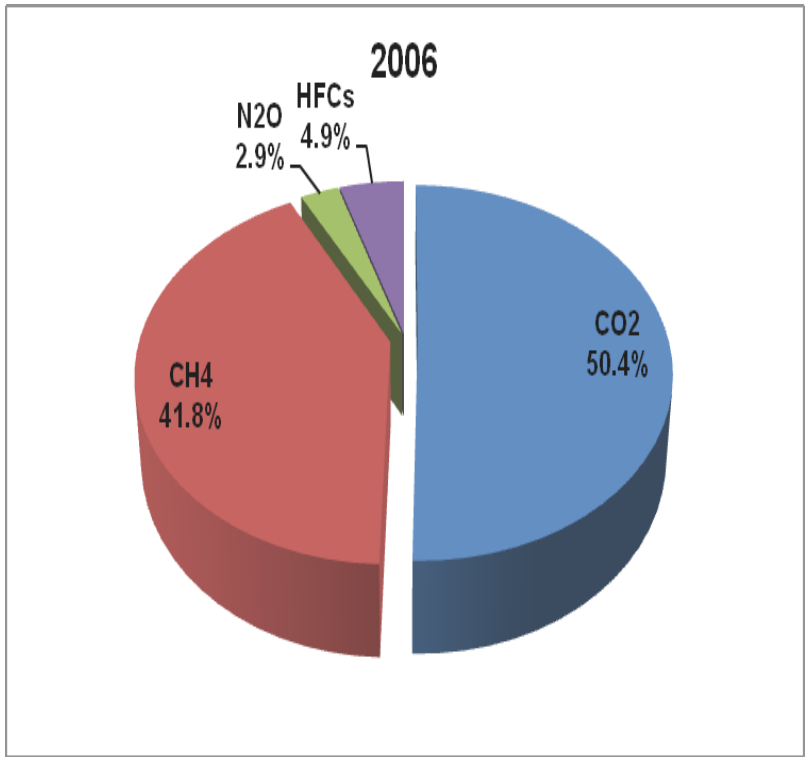




In 1990, Mongolia's net GHG emissions were 22.5 million tones CO_2-eq. and this total emission amount was reduced up to 14.8 million tones in 1995. This reduction of net GHG emissions is mostly due to socio-economic slowdown during the transition period from centrally planned economy into free market economy. But during this period the methane emissions were increased due to increase of livestock population. The HFCs were increased for the period 1990-2006 because of increase of the number of refrigerators and vehicles with air conditions.

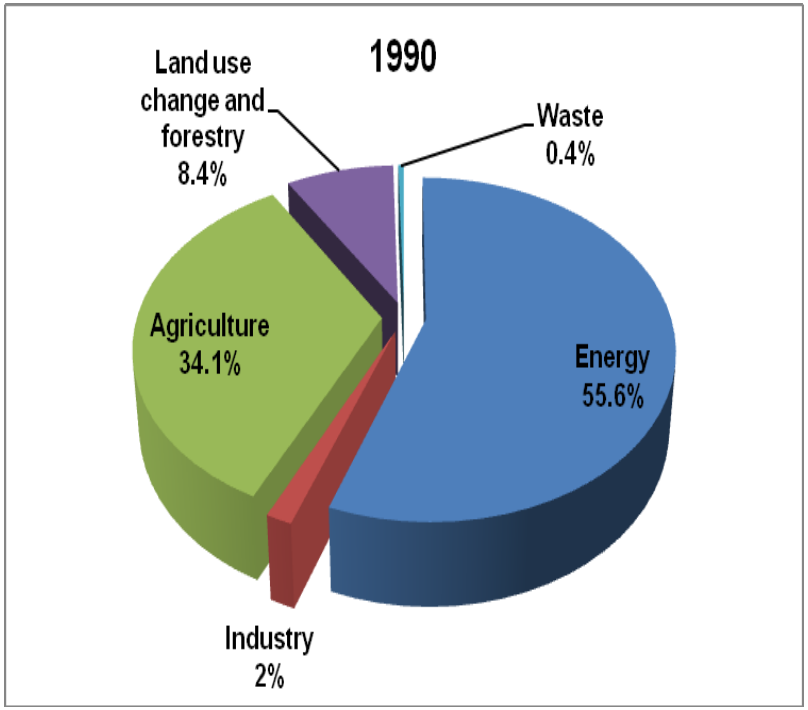
GHG Emissions in CO_2-eq by gases for 1990 and 2006

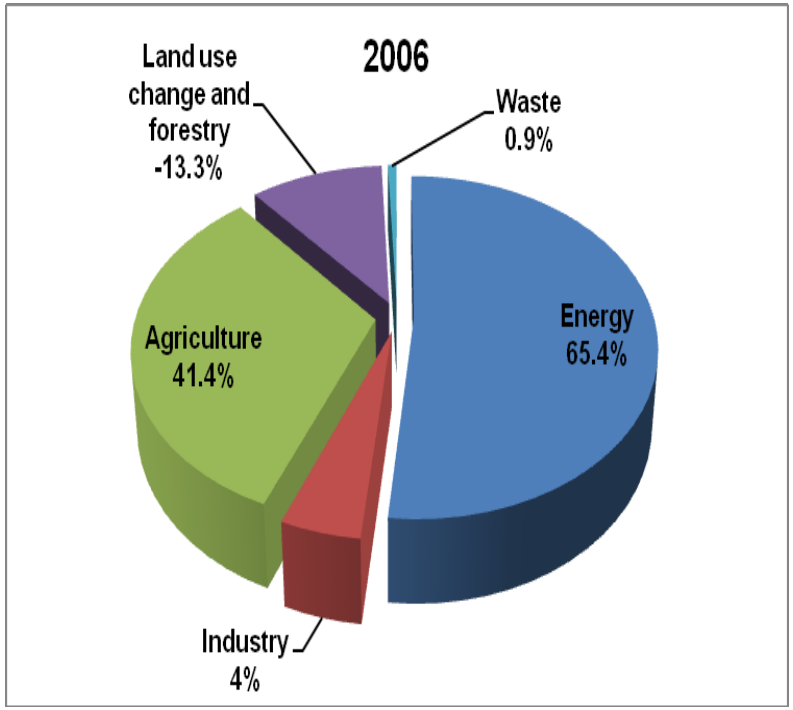




Carbon dioxide is the most important greenhouse gas in Mongolia's inventory with a share of 50.4 % of the total CO_2-eq emissions in 2006 followed by methane, which comprises 41.8%. The remaining gases (N_2O, HFCs) make up 7.8% of Mongolia's GHG emissions.

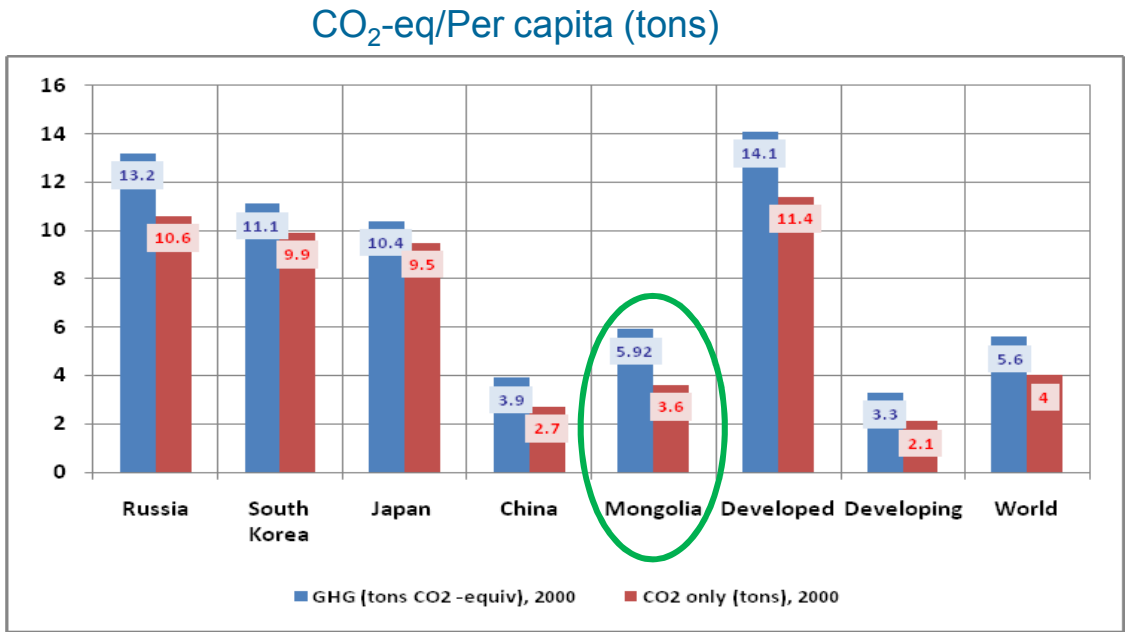
GHG Emissions in CO_2-eq by sector for 1990 and 2006

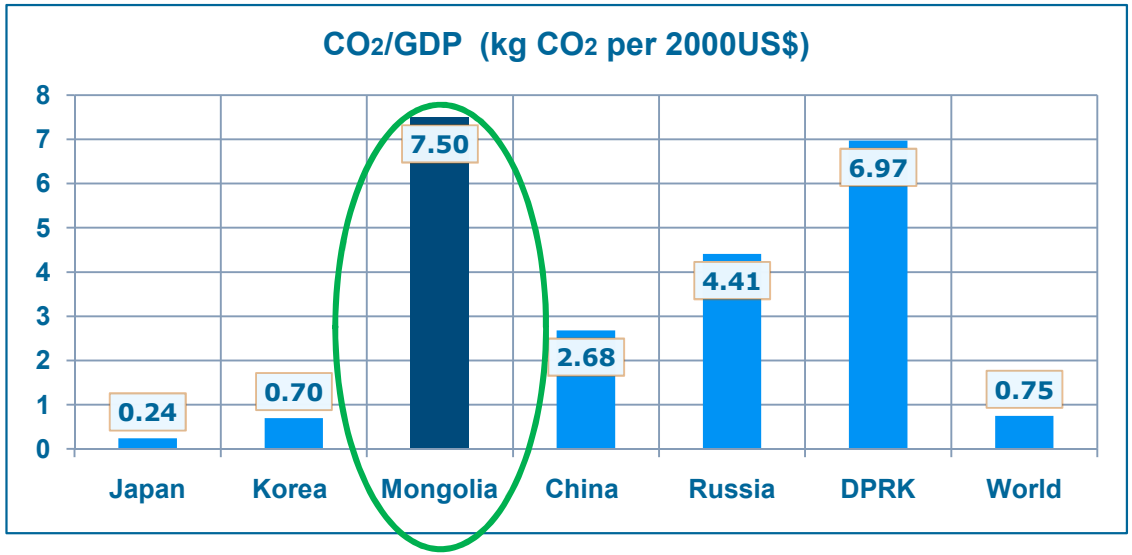




In 2006, the energy sector (including stationary energy, transport and fugitive emissions) was the largest source of GHG emissions comprising 55.4% of total GHG emissions in CO_2-equivalent. The second largest source of GHG emissions was agriculture sector (41.4%). For Land use change and forestry sector, the total CO_2 removals were 13.3% due to increase of the area of abandoned lands and reduce of newly cultivated land. Other relatively minor sources currently include emissions from industrial process and waste sector.

GHG Emissions Per Capita and per GDP

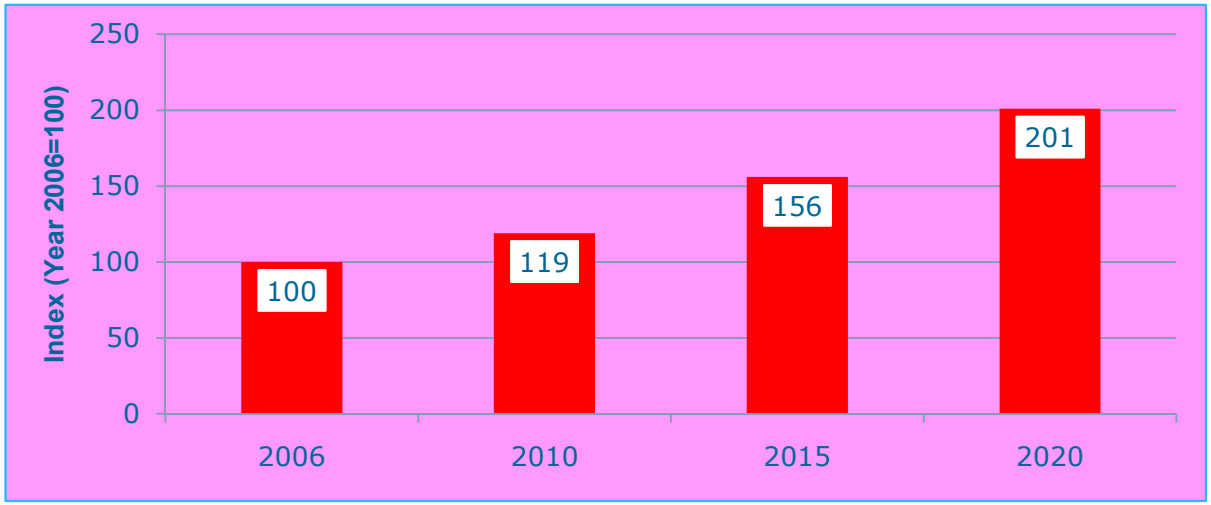




If compare with other countries, the total GHG emissions is small, but per capita and per GDP emissions are high.

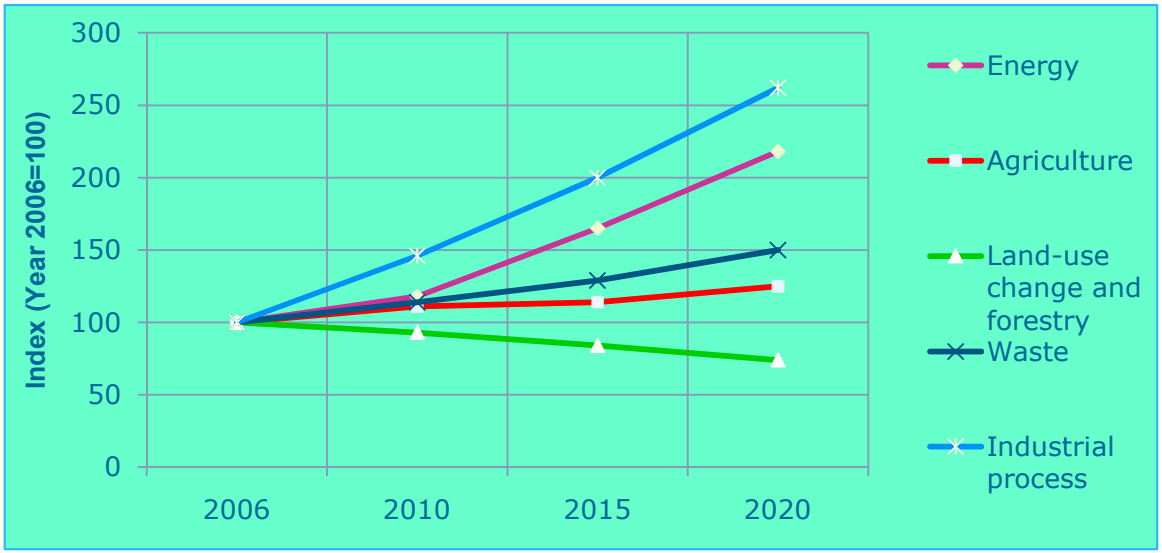
- CO_2-eq emissions per capita were 6.0 tons /person, which is almost 2 times higher than developing countries average.
- CO_2 emissions per GDP are 10 times higher than the world average.

Greenhouse Gases Projections



Projections indicate that GHG emissions in CO_2-eq will rise by 100% above 2006 levels in 2020.

CO_2 emissions during the forecast period are expected to gradually increase due to increase of energy intensity industry and increase of energy consumption in household and commercial sectors.



Lessons Leaned

- Activity data problem: Availability, quality, completeness, data collection and archiving procedures, inconsistence of official statistical data formats, etc.
- Lack of country specific emission factors,
- Weak coordination among the government institutions and data keepers to share data and information,
- Weak sustainable GHG inventory and NC management system,
- Limited human resources (trained experts movement, etc)

Bali Action Plan: NAMA and MRV

Bali Action Plan 1(b):

Enhanced national/international action on mitigation of climate change, including, inter alia, consideration of:

…

(ii) Nationally appropriate mitigation actions by developing country Parties in the ***context of sustainable development, supported and enabled by technology, financing and capacity-building,*** in a measurable, reportable and verifiable manner.

The Copenhagen Accord: *NAMA and MRV*

Decision -/CP.15:

- COP15 took note of the Copenhagen Accord.
- Non-Annex I Parties to the Convention will implement mitigation actions, including those to be submitted to the secretariat by non-Annex I Parties and in the context of sustainable development.
- Mitigation actions subsequently taken and envisaged by Non-Annex I Parties, including national inventory reports, shall be communicated through ***national communications*** consistent with Article 12.1(b) ***every two years*** on the basis of guidelines to be adopted by the Conference of the Parties.

Possibilities to implement the NAMA in a MRV manner

Our understandings about NAMA in a MRV manner are:

1. NAMA have a voluntary nature
2. NAMA will be implemented on the basis of support.
3. NAMA should be consistent with the national sustainable development goals and strategies
4. Supported NAMA can be implemented in a measurable, reportable and verifiable manner

Uncertainties in implementation of the NAMA in a MRV manner

- Legal Status of the Copenhagen Accord is unclear.
- Revised or updated Guidelines and Methodologies are necessary:
  - to estimate the GHG emission reductions through NAMA and report in a MRV manner.
  - to prepare National Communications through which information on the achievement of GHG emission reductions by NAMA shall be communicated.
- Frequency of national communications should be agreed by Parties at COP. Biennial communications will be very difficult for developing countries even there are available supports.

Mongolia: Copenhagen Accord and NAMA

- Mongolia associated with the Copenhagen Accord and submitted the list of Nationally Appropriate Mitigation Actions to the Climate Change Secretariat according to the Appendix II of the Accord.
- NAMA are:
  - consistent with the sustainable development goals,
  - should be supported and enabled by technology, financing and capacity-building.

Mongolia: Emission Reduction by NAMA through:

Energy supply:

1. **Increase renewable energy sources**
   - *Photovoltaic (PV) Solar System*
   - *Wind power generators and Wind farms*
   - *Hydropower plants*
2. **Improve coal quality**
   - *Coal beneficiation*
   - *Coal briquetting*
3. **Improve CHP plants**
   - *Improve efficiency of existing CHP and install Thermal power plant with high efficiency*

Mongolia: NAMA

Energy Supply (Continued):

4. **Improve household stoves and furnaces**
   - *Change fuels for household stoves and furnaces*
5. **Improve efficiency of heating boilers**
   - *Improve efficiency of existing HOBs and Install boilers with new design and high efficiency*
6. **Increase use of electricity for local heating in cities**
   - *Use of electricity from grid for individual households in cities*

Mongolia: NAMA

Energy Use:

1. Building - Building Energy efficiency Improvement:

- *Install heat and hot water meters in apartments*
- *Make insulation improvements for existing buildings and implement new energy efficient standards for new buildings*
- *Improve lighting efficiency in buildings*

2. Industry - Energy Efficiency Improvement

- *Improve housekeeping practices*
- *Implement motor efficiency improvement*
- *Introducing dry-processing in cement industry*

Mongolia: NAMA

Sectoral measures:

1. Transport

- *Electrification of railways*
- *Use more fuel efficient vehicles*

2. Agriculture

- *Limit the increase of the total number of livestock by increasing the productivity of each type of animal, especially cattle*.

Mongolia: NAMA

Sectoral measures:

3. **Forestry**
   - *Improve forest management*
   - *Reduce emissions from deforestation and forest degradation,*
   - *Improve sustainable management of forests*
   - *Enhance forest carbon stocks in Mongolian forest sector.*
4. **Waste**
   - *Landfill gas for power generation*

Mongolia: Emission Reduction by NAMA: Urgent Actions

Now, we need to:

- Quantify the national and sectoral emission reduction targets from the baseline (BAU/2020).
- Update the National Action Programme on Climate Change, which was approved in 2000 and include NAMA in MRV manner.
- Develop and implement GHG mitigation projects and programmes in action areas and sectors with support of international organizations and partner countries.

Conclusion

1. Legal agreements of Nationally Appropriate Mitigation Actions by developing countries and MRV procedures should be agreed at COP/UNFCCC.
2. To develop GHG Inventory for MRV, we need:
   - A clear guidance and methodology of preparation of GHG Inventory,
   - A comprehensive institutional and technical arrangements for activity data collection and archiving as well as GHG inventories,
   - Good coordination between GHG Inventory and MRVs.
   - Sustainable financial and technical support
3. A new Guidelines for National communications of non-Annex I Parties should be approved by COP/UNFCCC through which information on the achievement of GHG emission reductions by NAMA shall be reported.
4. Frequency of national communications of non-Annex I Parties also should be agreed at the COP/UNFCCC.
5. GHG Inventory and MRV activities should be implemented based on consistency, transparency, and certainty principles.

Thank you for attention