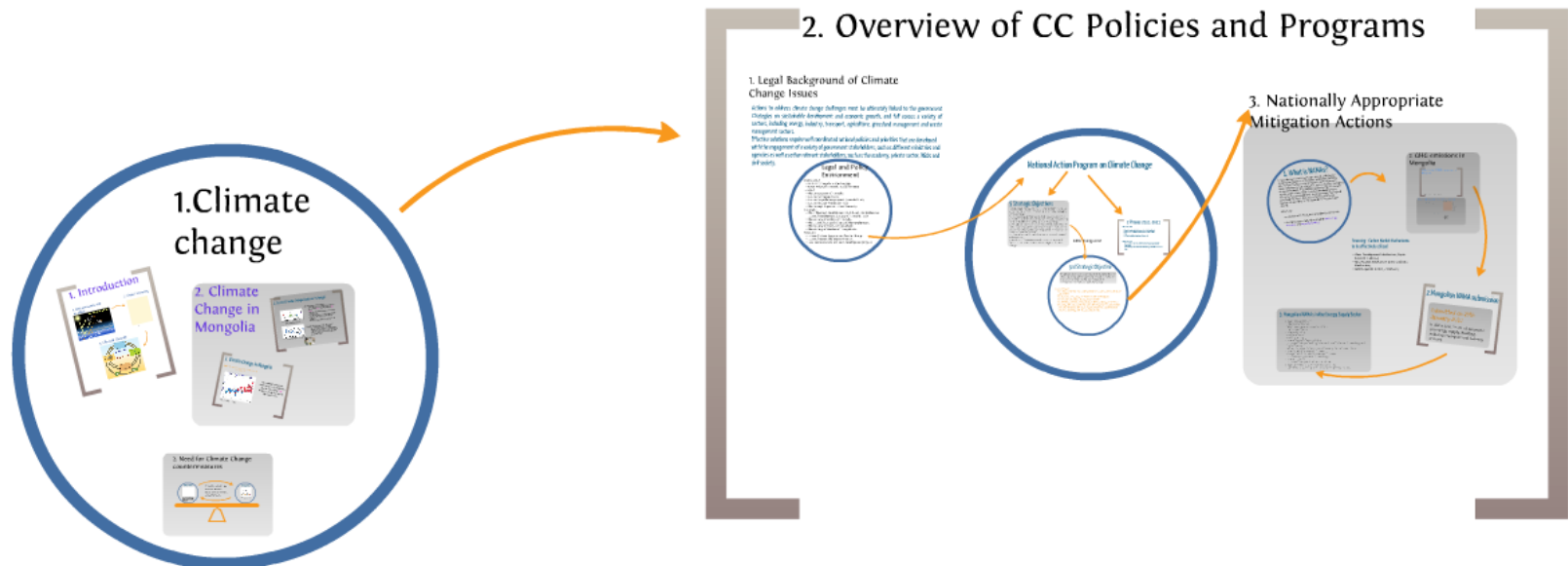




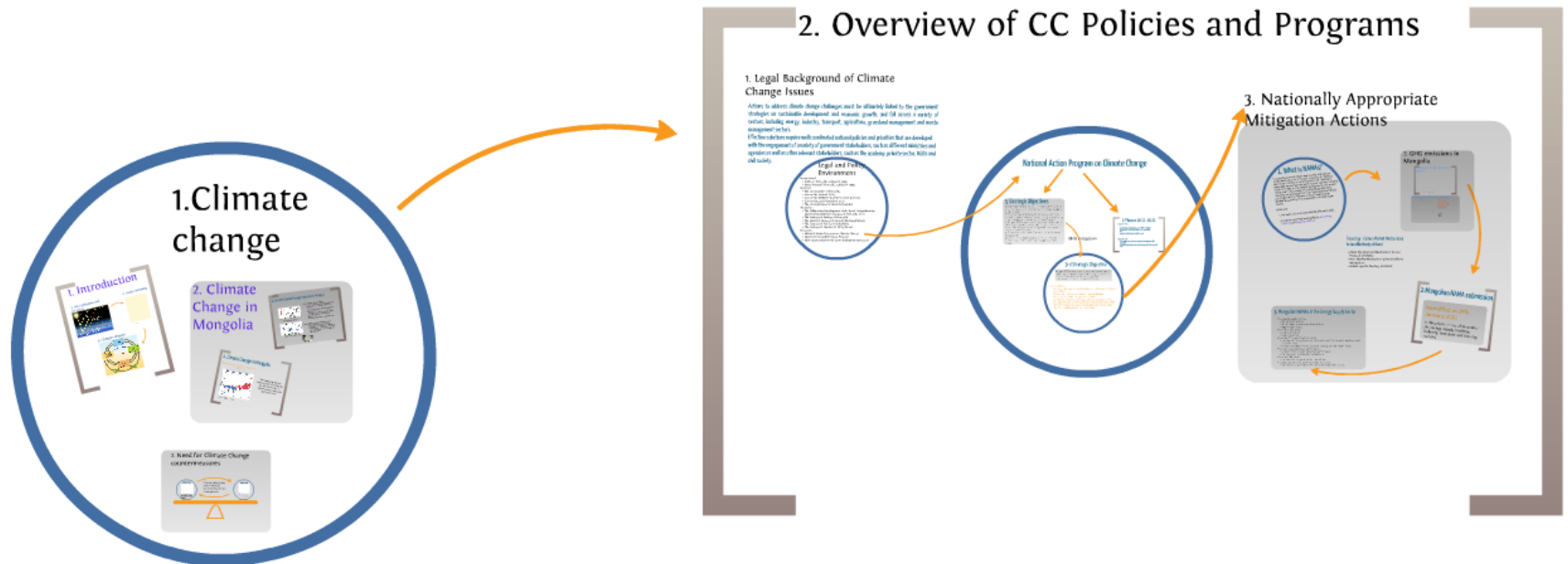
## Overview of Climate Change Policies of Mongolia: NAMAs in the energy sector



Thank you very much for your attention!

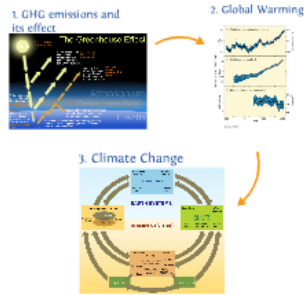
[www.mne.gov.mn](http://www.mne.gov.mn)

# Overview of Climate Change Policies of Mongolia: NAMAs in the energy sector



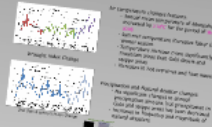
# 1. Climate change

## 1. Introduction

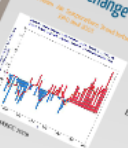


## 2. Climate Change in Mongolia

### 2. Current Climate Change Features in Mongolia

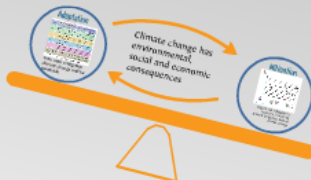


### 1. Climate Change in Mongolia



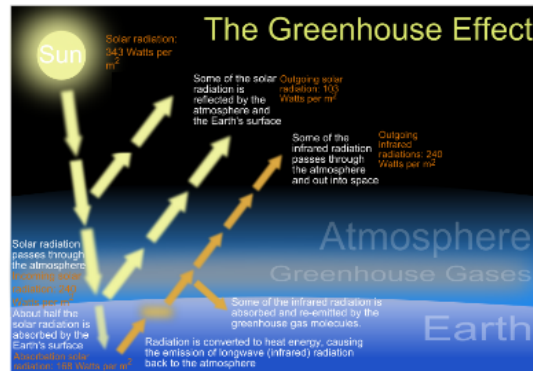
The annual mean air temperature of Mongolia has increased by 1.6°C between 1960 and 2010.

## 2. Need for Climate Change countermeasures

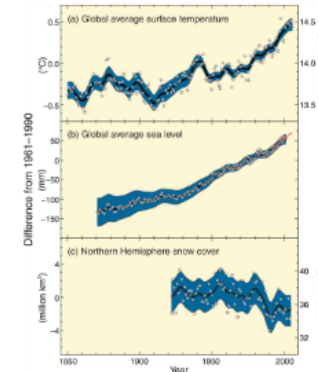


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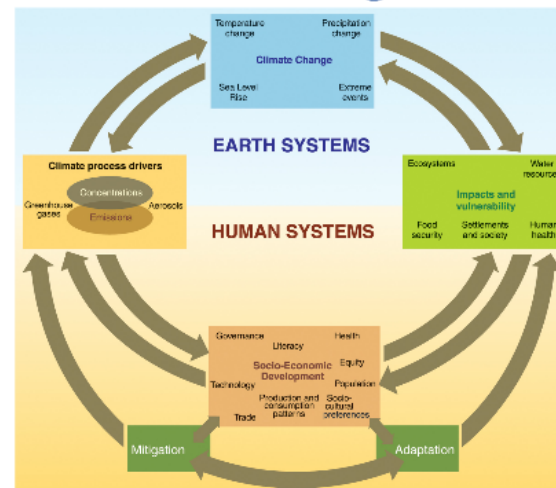
## 1. GHG emissions and its effect



## 2. Global Warming

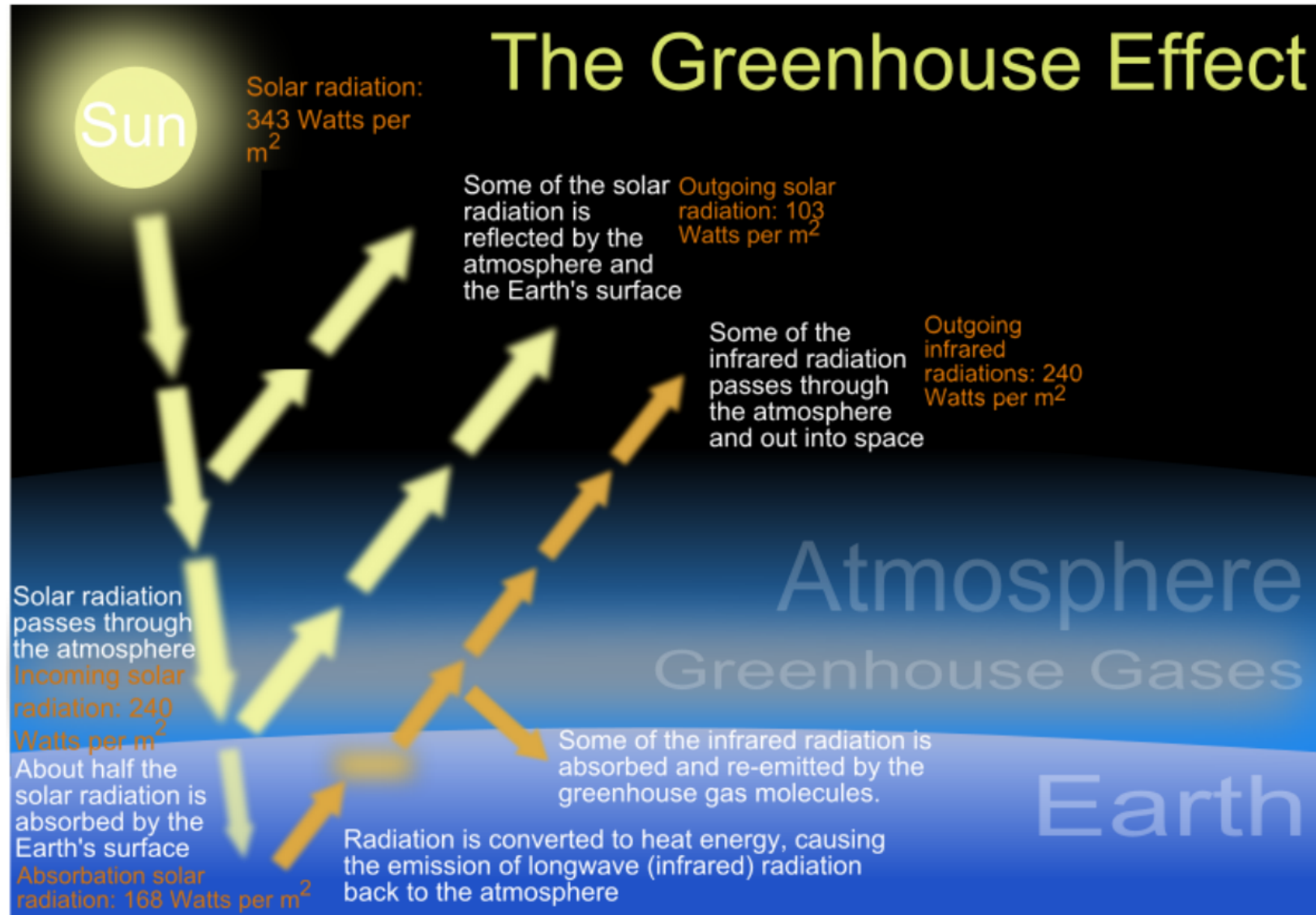


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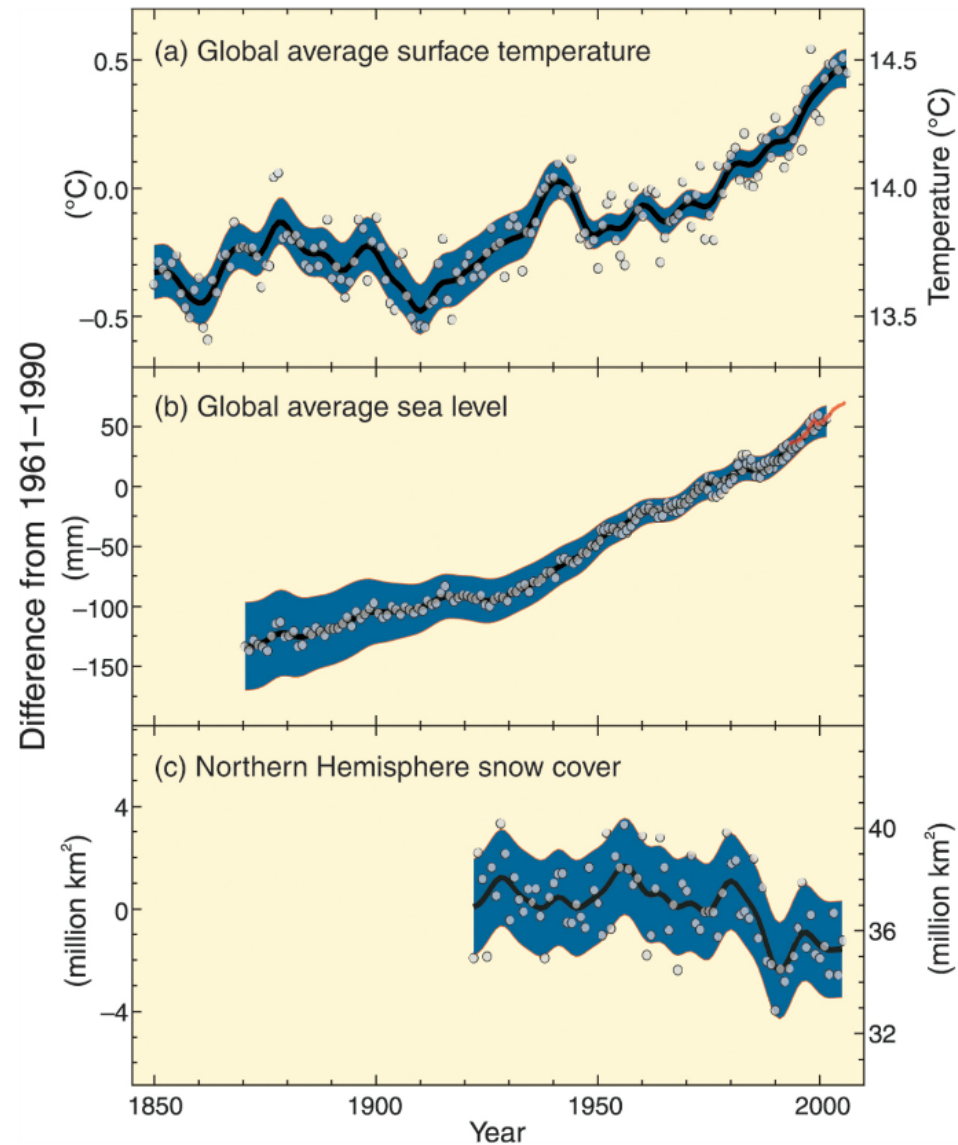


Source: IPCC

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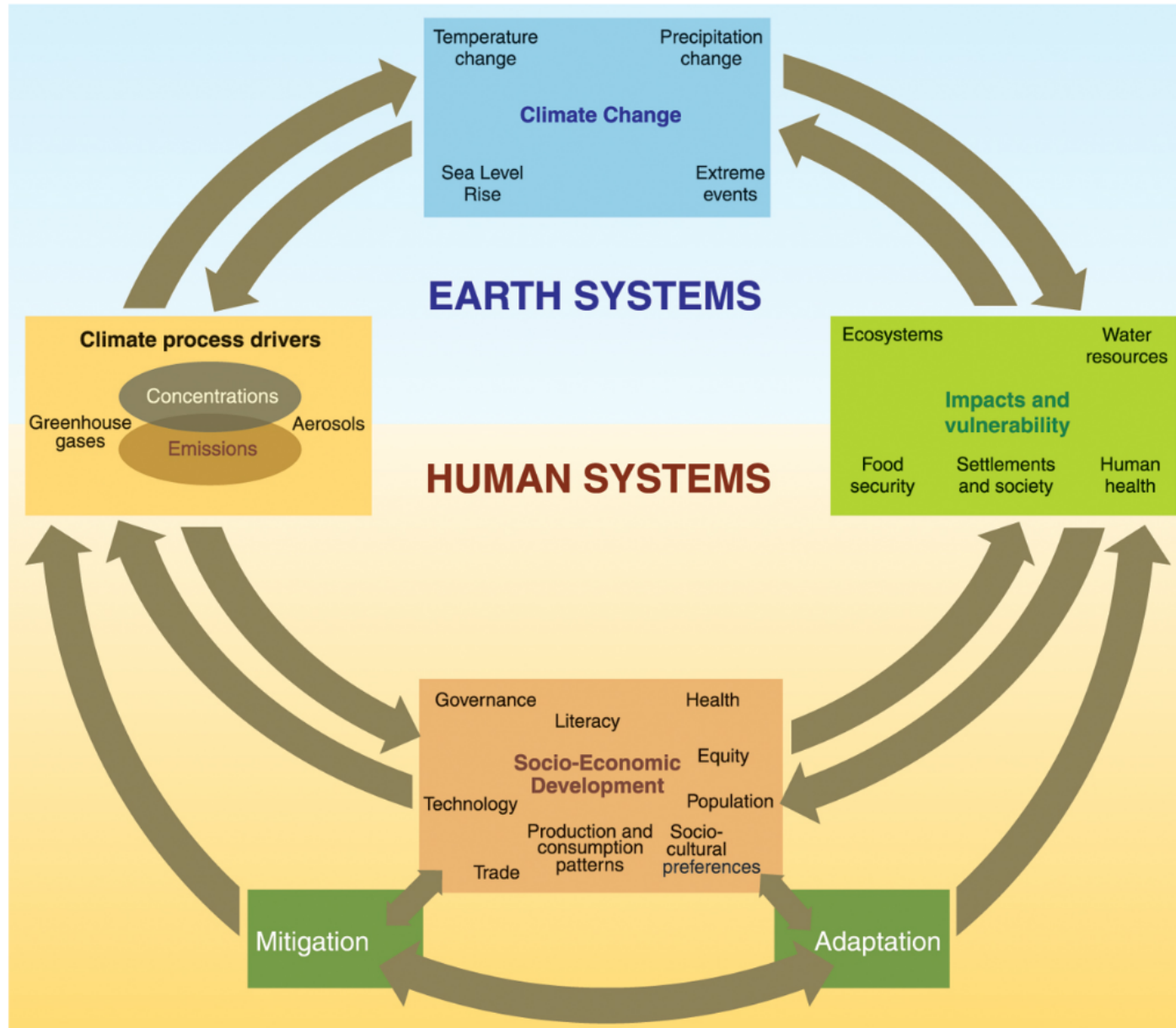


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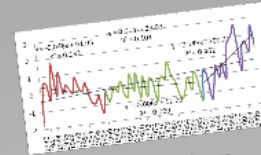


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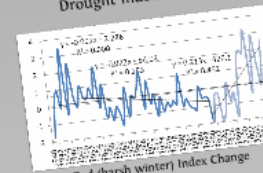


# 2. Climate Change in Mongolia

## 2. Current Climate Change Features in Mongoli



Drought Index Change



Zud (harsh winter) Index Change

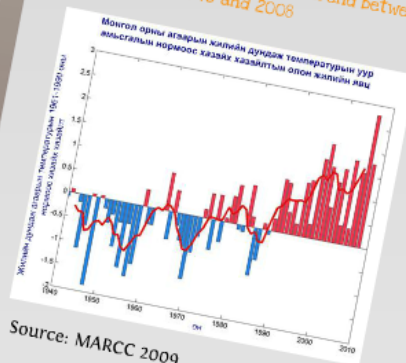
- Air temperature changes features:
- Annual mean temperature of Mongolia has increased by **2.14°C** for the period of **1940-2008**.
  - Summer temperature increases faster than winter season.
  - Temperature increase more significantly in mountain areas than Gobi desert and steppe areas.
  - Increases in hot extremes and heat waves

- Precipitation and Natural disaster changes:
- No significant changes in annual precipitation amount, but precipitation in Gobi and steppe areas has been decreased
  - Increases in frequency and magnitude of natural disasters



## 1. Climate Change in Mongolia

Annual Mean Air Temperature Trend between 1940 and 2008



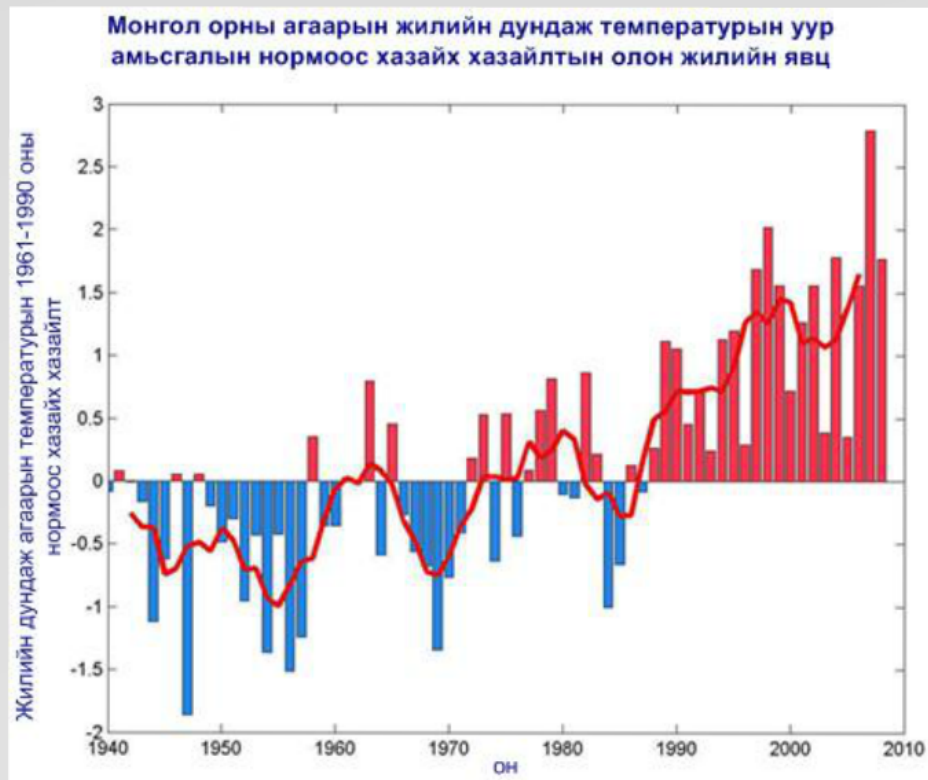
Source: MARCC 2009

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# 1. Climate Change in Mongolia

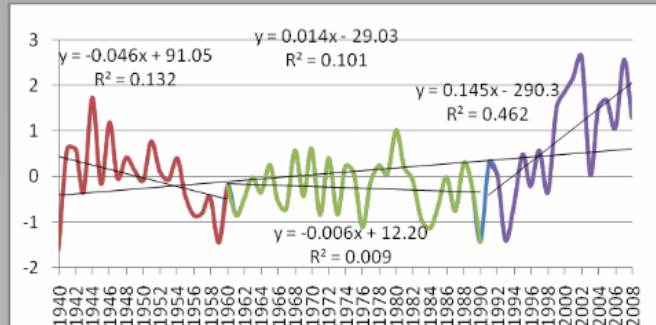
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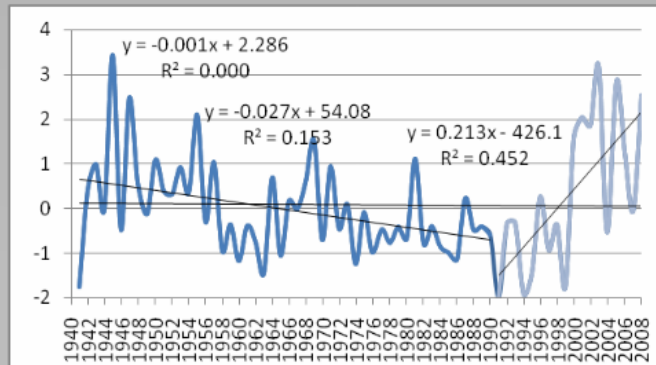
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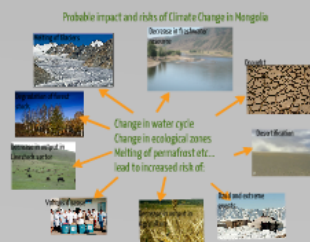
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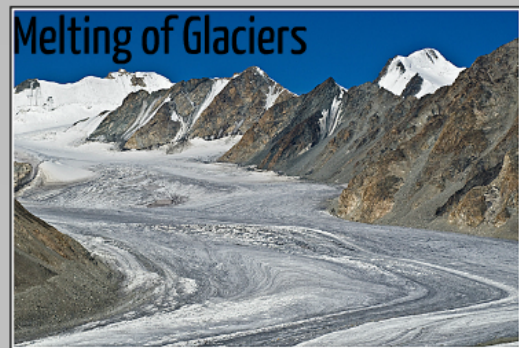
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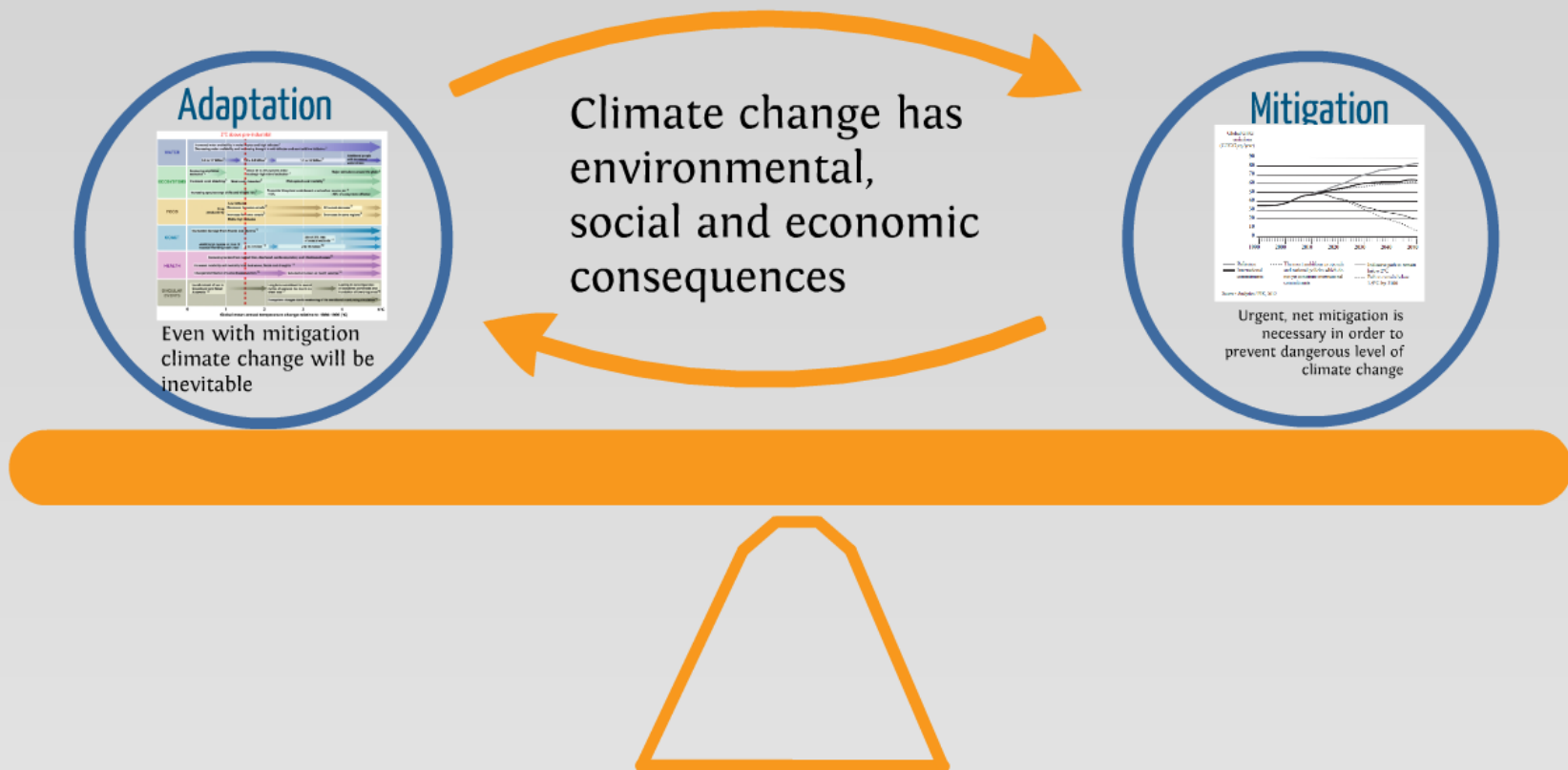
# Probable impact and risks of Climate Change in Mongolia



Change in water cycle  
Change in ecological zones  
Melting of permafrost etc...  
lead to increased risk of:

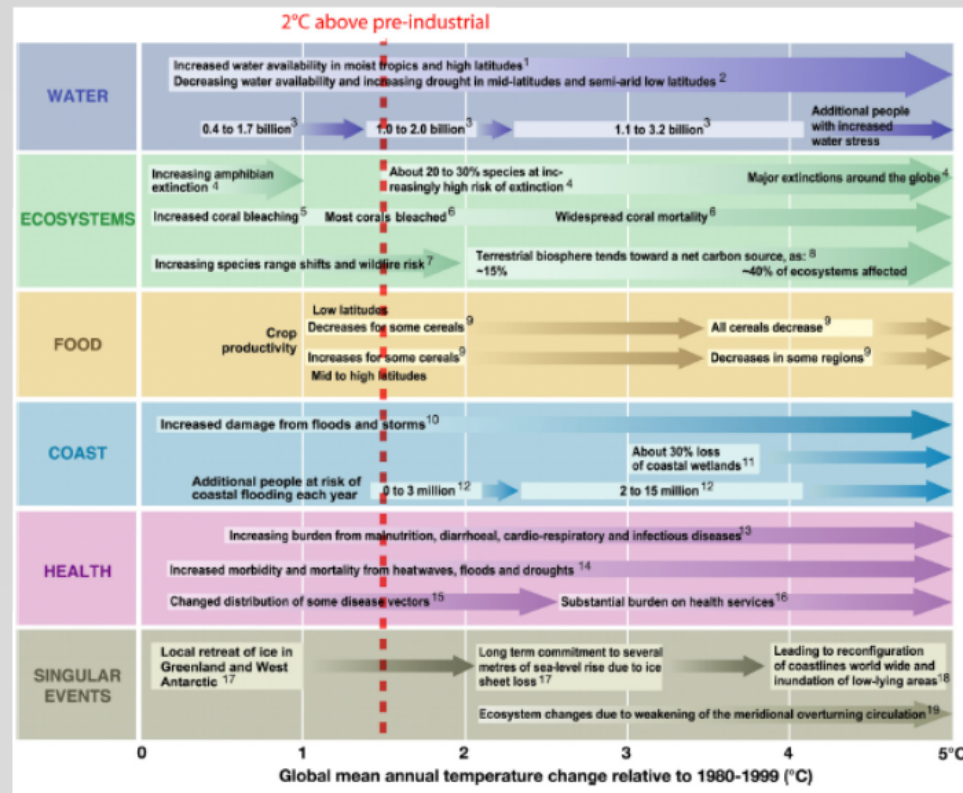


## 2. Need for Climate Change countermeasures



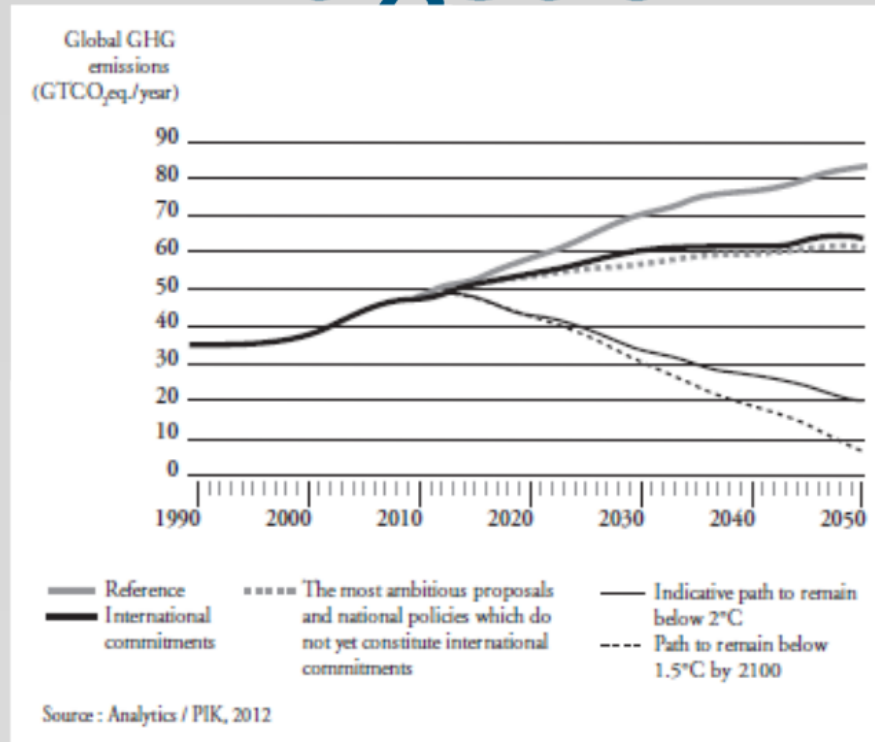


# Adaptation



Even with mitigation  
climate change will be  
inevitable

# Mitigation



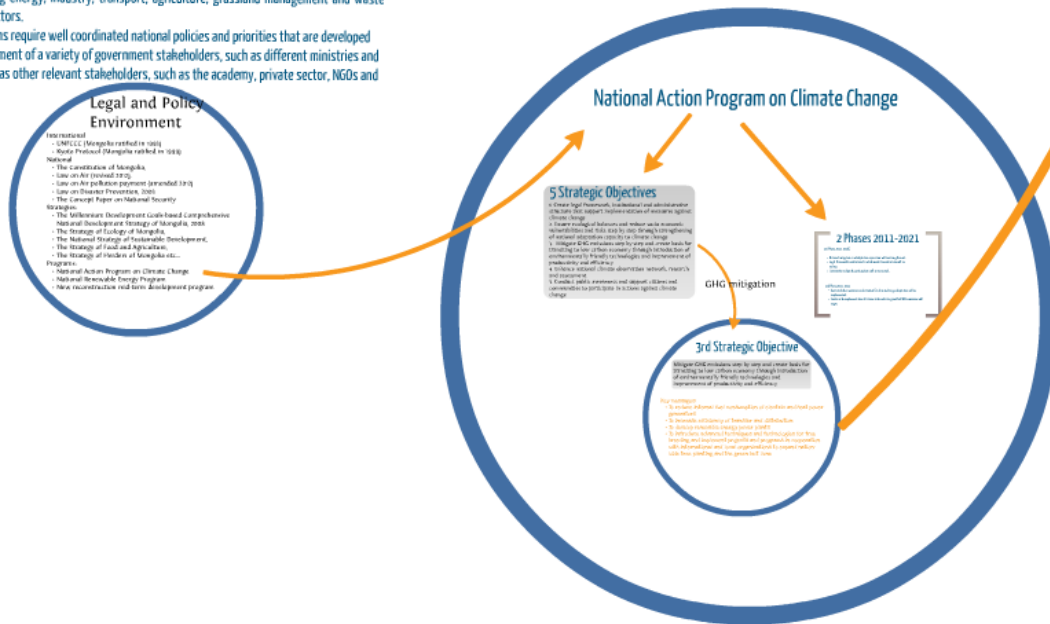
Urgent, net mitigation is necessary in order to prevent dangerous level of climate change

# 2. Overview of CC Policies and Programs

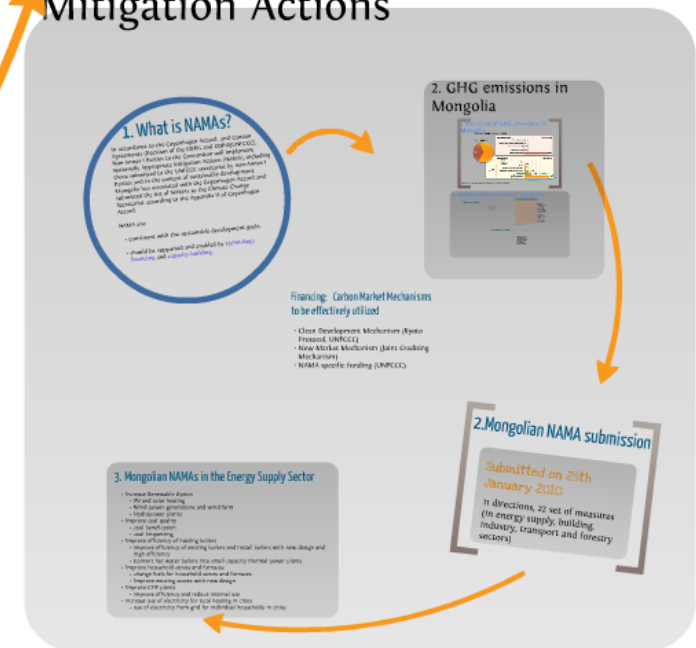
## 1. Legal Background of Climate Change Issues

Actions to address climate change challenges must be ultimately linked to the government strategies on sustainable development and economic growth, and fall across a variety of sectors, including energy, industry, transport, agriculture, grassland management and waste management sectors.

Effective solutions require well coordinated national policies and priorities that are developed with the engagement of a variety of government stakeholders, such as different ministries and agencies as well as other relevant stakeholders, such as the academy, private sector, NGOs and civil society.



## 3. Nationally Appropriate Mitigation Actions





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## Legal and Policy Environment

### International

- UNFCCC (Mongolia ratified in 1993)
- Kyoto Protocol (Mongolia ratified in 1999)

### National

- The Constitution of Mongolia,
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- Law on Air pollution payment (amended 2012)
- Law on Disaster Prevention, 2003
- The Concept Paper on National Security

### Strategies:

- The Millennium Development Goals-based Comprehensive National Development Strategy of Mongolia, 2008
- The Strategy of Ecology of Mongolia,
- The National Strategy of Sustainable Development,
- The Strategy of Food and Agriculture,
- The Strategy of Herders of Mongolia etc...

### Programs:

- National Action Program on Climate Change
- National Renewable Energy Program
- New reconstruction mid-term development program

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# National Action Program on Climate Change

## 5 Strategic Objectives

1. Create legal framework, institutional and administrative structure that support implementation of measures against climate change
2. Ensure ecological balances and reduce socio economic vulnerabilities and risks step by step through strengthening of national adaptation capacity to climate change
3. Mitigate GHG emissions step by step and create basis for transitioning to low carbon economy through introduction of environmentally friendly technologies and improvement of productivity and efficiency
4. Enhance national climate observation network, research and assessment
5. Conduct public awareness and support citizens and communities to participate in actions against climate change

GHG mitigation

## 2 Phases 2011-2021

1st Phase 2011-2015

- National mitigation and adaptation capacities will be strengthened.
- Legal framework, institutional and administrative structure will be set up.
- Community and public participation will be increased.

2nd Phase 2015-2021

- Best available measures and activities for climate change adaptation will be implemented.
- Sustainable implementation of actions to decelerate growth of GHG emissions will begin.

## 3rd Strategic Objective

Mitigate GHG emissions step by step and create basis for transitioning to low carbon economy through introduction of environmentally friendly technologies and improvement of productivity and efficiency

### Key messages:

- To reduce internal fuel consumption of electric and heat power generators
- To increase efficiency of transfer and distribution
- To develop renewable energy power plants
- To introduce advanced techniques and technologies for tree breeding and implement projects and programs in cooperation with international and local organizations to expand nationwide tree planting and the green belt zone

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# 3. Nationally Appropriate Mitigation Actions

## 1. What is NAMAs?

In accordance to the Copenhagen Accord and Cancun Agreements (Decision of the COP15 and COP16/UNFCCC), Non-Annex I Parties to the Convention will implement Nationally Appropriate Mitigation Actions (NAMA), including those submitted to the UNFCCC secretariat by non-Annex I Parties and in the context of sustainable development. Mongolia has associated with the Copenhagen Accord and submitted the list of NAMAs to the Climate Change Secretariat according to the Appendix II of Copenhagen Accord.

NAMA are:

- consistent with the sustainable development goals,
- should be supported and enabled by **technology**, **financing** and **capacity-building**.

## 2. GHG emissions in Mongolia

1. Overview of GHG emissions in Mongolia



2. Comparison with other countries



Financing: Carbon Market Mechanisms to be effectively utilized

- Clean Development Mechanism (Kyoto Protocol, UNFCCC)
- New Market Mechanism (Joint Crediting Mechanism)
- NAMA specific funding (UNFCCC)

## 3. Mongolian NAMAs in the Energy Supply Sector

- Increase Renewable Option
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- Improve CHP plants
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Submitted on 28th January 2010

11 directions, 22 set of measures (in energy supply, building, industry, transport and forestry sectors)



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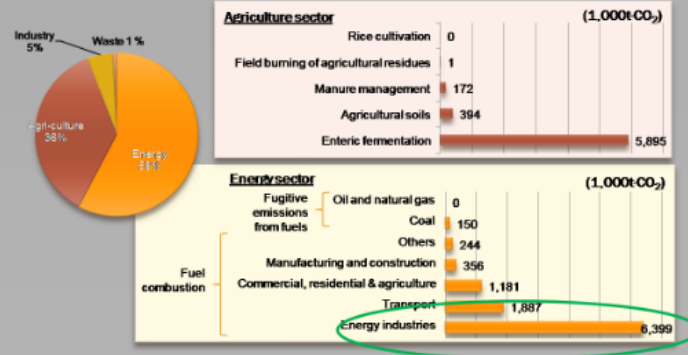
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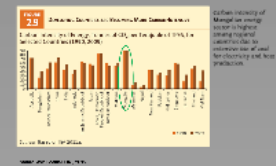
## 1. Overview of GHG emissions in Mongolia

## Overview of GHG Emissions (2006)



Source: Market mechanism Country Fact Sheet:Mongolia

### Carbon Intensity of Energy



### Energy Intensity of Industrial Output



Energy intensity of industrial production in Mongolia is a number of times higher than other countries in the region.

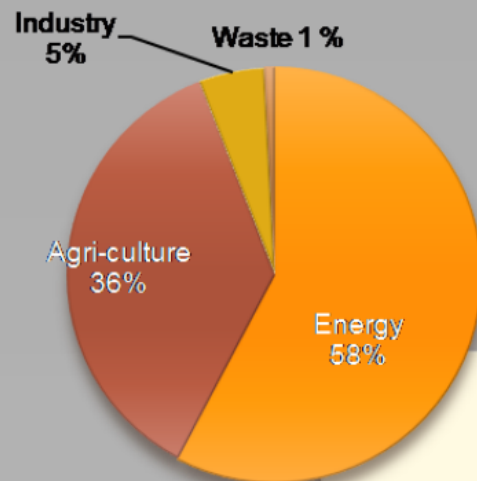
### Renewable Energy Utilization

[illegible]

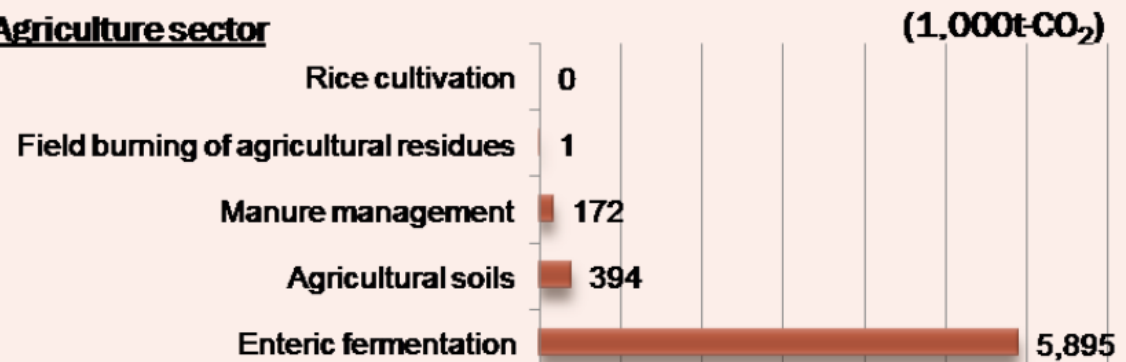
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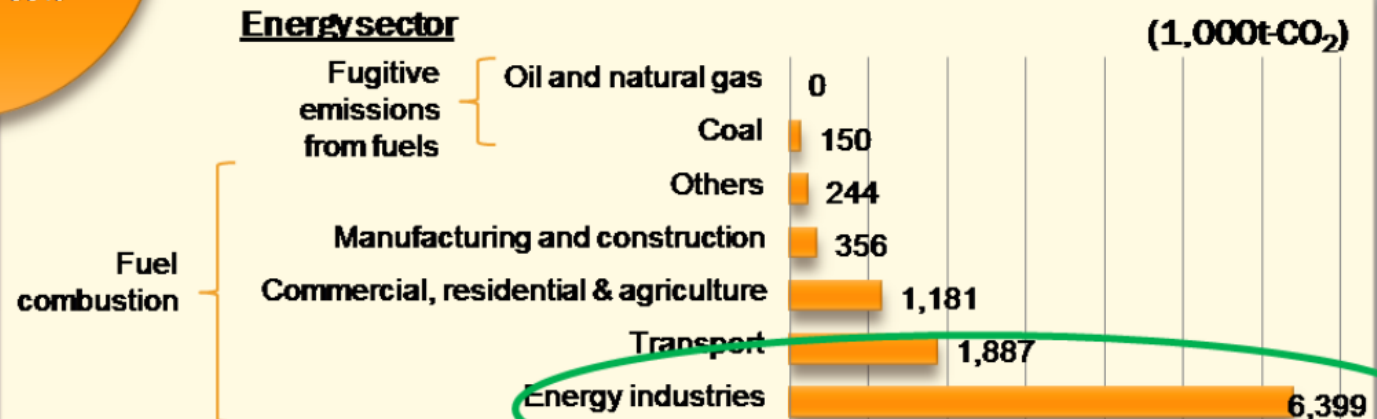
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### Agriculture sector



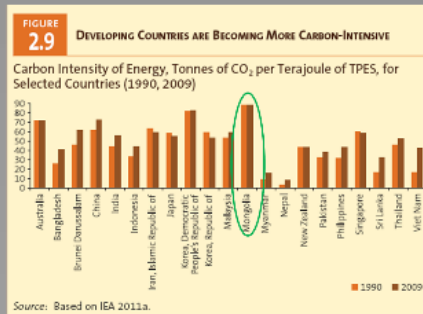
### Energy sector



Source: Market mechanism Country Fact Sheet: Mongolia

## 2. Comparison with other countries

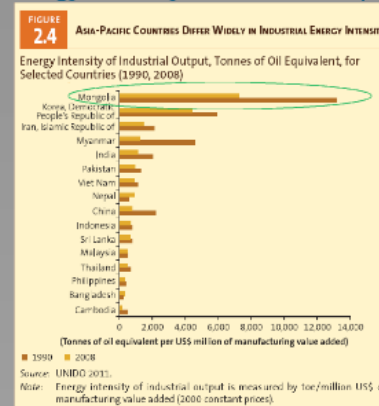
### Carbon Intensity of Energy



Source: Asia Pacific HDR, 2012

Carbon intensity of Mongolian energy sector is highest among regional countries due to extensive use of coal for electricity and heat production.

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### Renewable Energy Utilization

Asia-Pacific Energy Production and Use, 2009

Country	Energy Produced	Net Imports	Total Primary Energy Supply (Mtoe)	Share in Energy Consumption (%)	
				Renewables	Fossils
Bangladesh	24.8	5.0	29.8	30.2	69.8
Cambodia	3.7	1.6	5.2	70.8	27.8
China	2,084.9	274.9	2,257.1	11.9	87.4
India	502.5	182.0	675.8	26.1	73.0
Indonesia*	351.8	-153.6	202.0	34.6	65.6
Iran, Islamic Republic of	349.8	-132.1	216.2	0.5	99.7
Korea, Democratic People's Republic of	20.3	-1.0	19.3	11.0	89.0
Malaysia	89.7	-21.7	66.8	5.3	94.7
Mongolia	7.7	-4.2	3.2	3.2	96.4
Myanmar	22.4	-7.2	15.1	72.3	27.7
Nepal	8.8	1.2	10.0	88.5	11.1
Pakistan	64.9	19.8	85.5	37.4	61.8
Philippines	23.5	16.3	38.8	43.0	57.0
Sri Lanka	5.1	4.3	9.3	54.7	45.3
Thailand	61.7	47.4	109.3	20.5	79.4
Viet Nam	76.6	-13.8	64.1	43.3	56.2
World	12,292.0	-	12,150.0	13.1	86.7

Source: Asia Pacific HDR, 2012

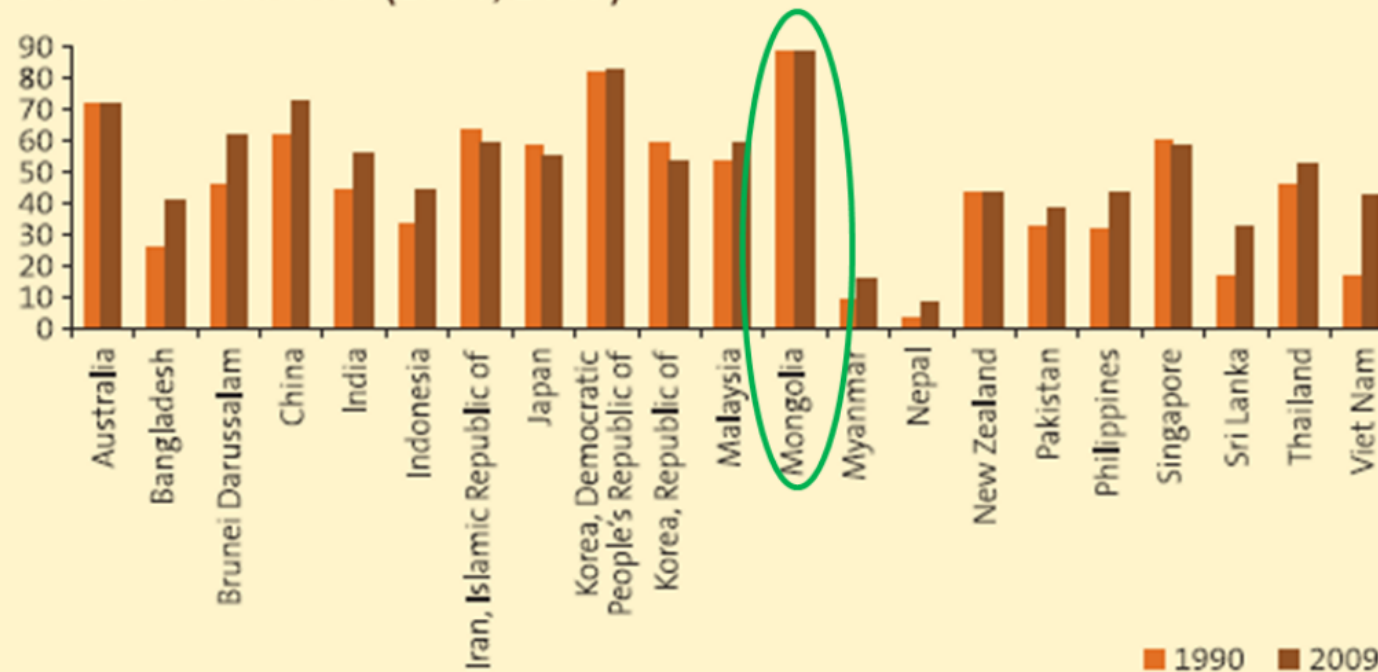
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# Carbon Intensity of Energy

**FIGURE**  
**2.9**

## DEVELOPING COUNTRIES ARE BECOMING MORE CARBON-INTENSIVE

Carbon Intensity of Energy, Tonnes of CO<sub>2</sub> per Terajoule of TPES, for Selected Countries (1990, 2009)



Source: Based on IEA 2011a.

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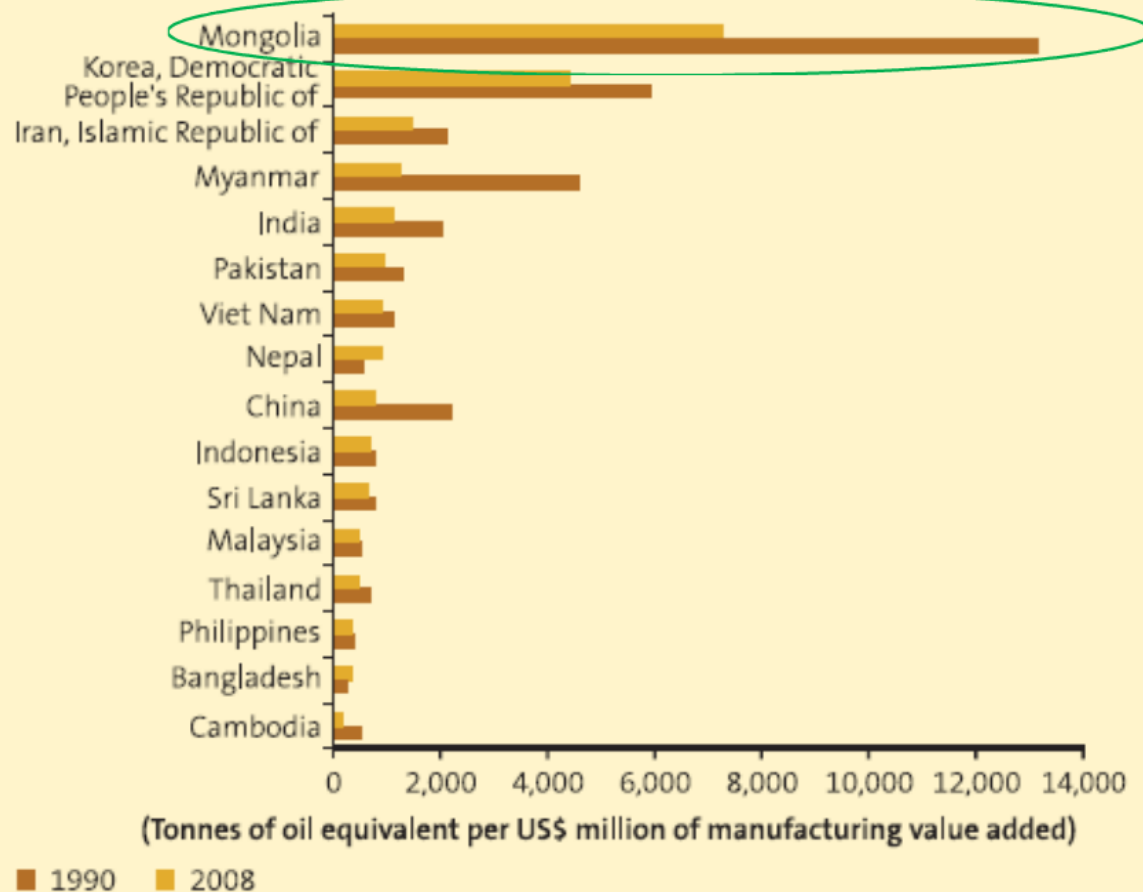
Source: Asia Pacific HDR , 2012

# Energy Intensity of Industrial Output

FIGURE  
2.4

## ASIA-PACIFIC COUNTRIES DIFFER WIDELY IN INDUSTRIAL ENERGY INTENSITY

Energy Intensity of Industrial Output, Tonnes of Oil Equivalent, for Selected Countries (1990, 2008)



Source: UNIDO 2011.

Note: Energy intensity of industrial output is measured by toe/million US\$ of manufacturing value added (2000 constant prices).

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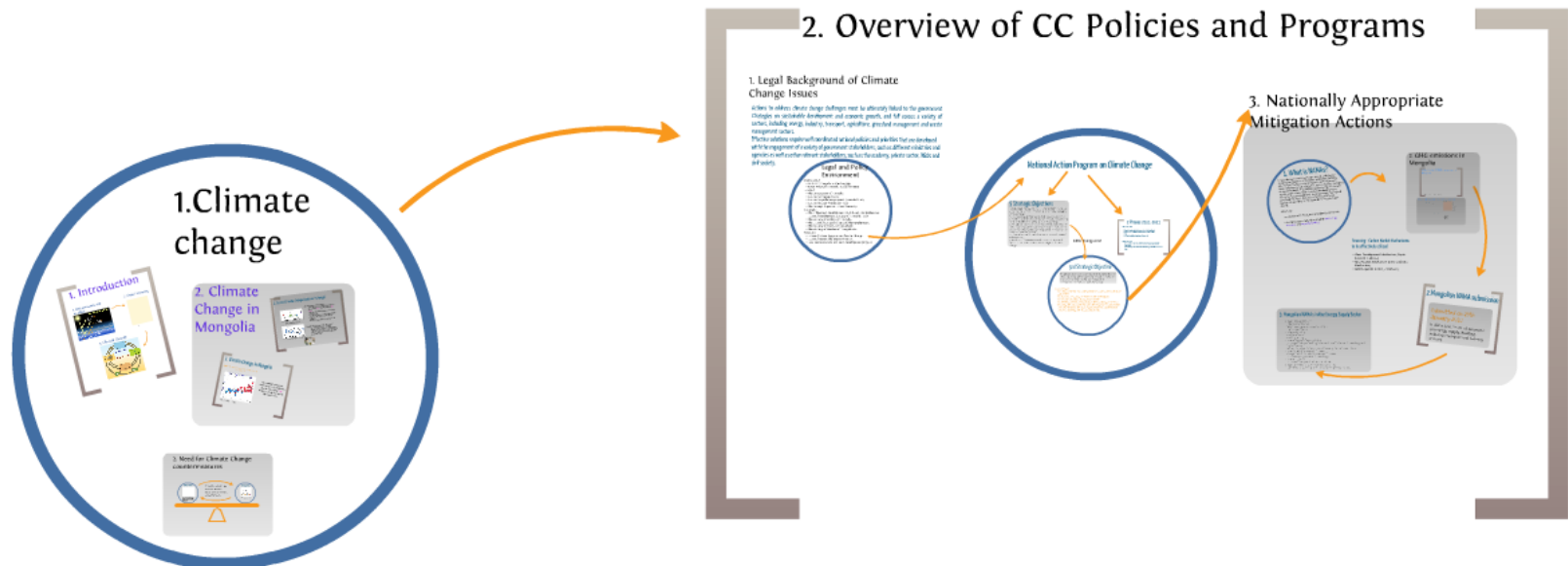


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