

Is our earth in normal condition now?

Tschierva Glacier, Switzerland



1910



2004

Rhone Glacier, Switzerland



1906

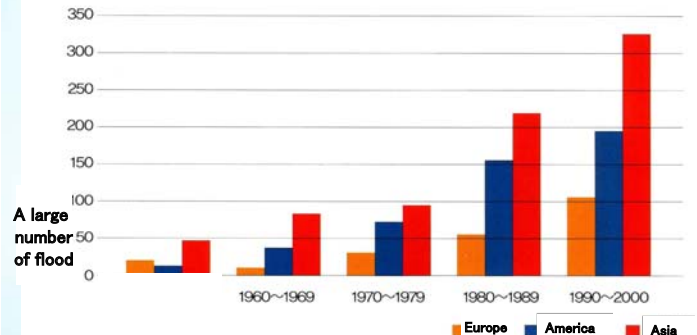


2003

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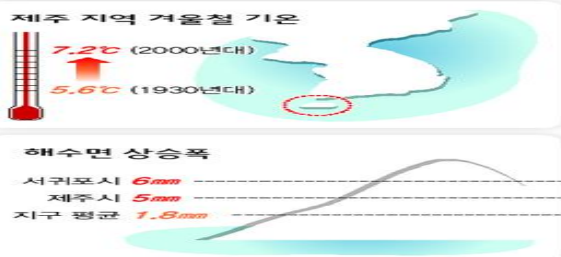
Is our earth in normal condition now?

Shown as a unit suffered 10 years every continent, a large number of flood



How about now?

- ◇ Rise in **temperature** : double of earth average (0.74 °C)
(1.5°C increase over the last 100 years)
- ◇ Rise in **sea level** (Jeju) : 3 times of earth average (1.8mm)
(22cm increase over the last 40 years)



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Climate change is already happening in Jeju

- Sea level rises along the Yongmeori coast(5mm/y), Jeju's specialty Jaridome moves toward north
 - White dust, Alveopora japonica pink ascidian, and jellyfish spread
 - Subtropical fish species such as tuna, Purple octopus, Atlantic tripletail, red sting ray increase
 - Natural Abies koreana forest decreases, foreign plants appear, etc.
- ⇒ change to subtropical climate is accelerating (slower in winter, & faster in summer)



II. Vision and Objectives of Jeju

Vision and Objectives of Jeju

Vision

- Develop world-class eco model city via Jeju Carbon Neutral Island

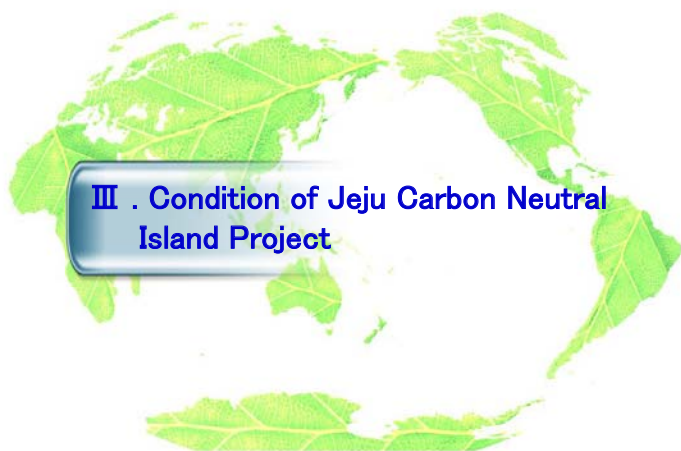
– Carbon Neutral Island Jeju –

- * Use climate change crisis as a chance to build a futuristic green society

Objectives

- Reduce greenhouse gas emission to 50% of the 2005 level by 2020
- Foster counter climate change industry as a new growth engine industry
- Develop into world-class eco city via realization of carbon neutral island

➡ Foster Jeju as climate change adaptation test bed



III. Condition of Jeju Carbon Neutral Island Project

Conditions for Carbon Neutral Island Project?

Jeju's unique ecology and socio-economic structure

- Rich marine resources, distribution of a variety of life
- World natural heritage, biological preservation area, wetland, etc.
- 1st and 3rd centered industrial structure

Having strongest signs of climate change on the Korean peninsula

- Route of typhoons (2007 Typhoon Nari)
- Climate change due to Mt. Halla, etc.

National climate change reaction example province of Korea

Climate change factors



Gas Emission Data of Jeju (CO2)

year	Emissions (1 million tons)	year	Emissions (1 million tons)
1996	322.5	2001	343.2
1997	359	2002	365.5
1998	298.3	2003	376
1999	295.3	2004	373.5
2000	315.6	2005	381.7

Remark: Levels for other years are estimates based on the 2005 level.

Structural characteristics of emission volume

- accounting for 0.738% of Korea's total emission
- Energy areas such as fuel/power accounting for 97.4%
- Use of petrol, gasoline, and LPG accounting for 31.2%
- Eco-related areas such as waste burning/landfill/sewage treatment accounting for 2.5%
- Use for livestock such as cows, horses, and pigs accounting for 0.1%

IV . Strategies & Key Tasks of Project



Jeju Green Growth Island Plan (draft)



Raising “public awareness on low carbon green growth island”

- ▶ Develop short- and long-term strategies and action plan for climate change
- ▶ Adopt carbon point and emission right transaction system
- ▶ Make a climate change ordinance (in link to the enforcement of the Basic Law on Climate Change)
- ▶ Assess climate change impacts in Jeju and develop adaptation model(' 08-' 12)
- ▶ Build national climate change education center and landmark
- ▶ Form national and international cooperation network, operate education/promotion program, etc.
- ▶ Strengthen climate change education/promotion capacity
- ▶ Promote climate change projects by division and year
- ▶ Build organic collaboration system with the central and local governments

Realizing "Carbon Free Island" Jeju with new and renewable energy

- ▶ Generate 500MW of wind power by 2020, accounting for 20% of power demand in Jeju
- ▶ Promote introduction of geothermal power resistible to base load for the first time in Korea
- ▶ Increase photovoltaic power for businesses and households to 30MW by 2012
- ▶ Replace 20% of gasoline spending in Jeju with BD by 2012
- ▶ Realize distributed power system by increasing photovoltaic houses
- ▶ Make and supply 60,000 ton of BE using 200,000 ton of not fully ripen fruits, oranges of poor quality, and orange peel
- ▶ Produce biogas with wastes (livestock excretion, sewage sludgy, food waste, etc.)
 - Treat 100 ton of organic wastes daily ⇒ produce 11,000m³/day of biogas
- ▶ Build AMI new power control infrastructure to 210,000 units by 2011

Developing "Green Growth Eco-Friendly Industry Infrastructure"

- ▶ Develop natural circulation type 1st industry where agriculture, fisheries, and livestock industry, environment, and tourism are in harmony
- ▶ Promote the development of new species by breeding or crossing of different varieties such as orange mutants for example
- ▶ Provide climate change-related farming guidelines and diseases and insects data
- ▶ Support drought measuring equipment automation project and energy-saving facilities
- ▶ Develop low carbon livestock farms via improved livestock excretion treatment method and increased resource recovery
- ▶ Conduct marine environment research with climate change such as rise in water temperature and make eco map
- ▶ investigate into the cause for abnormal growth of sea weed along the coastline of Jeju and promote development of resource recovery plan
- ▶ Encourage the rape farming for carbon neutral fuel bio-diesel
- ▶ Set up progressive fostering and support system of subtropical fruits farming
- ▶ Promote coast belt sea forest development project as white rust and jellyfish spread abnormally

Realizing "Low Carbon Green Growth Island"

- ▶ Make urban space plan for low carbon green growth island
- ▶ Develop infrastructure for bicycle users fit to the Jeju topology
- ▶ Raise energy efficiency of large buildings (introduce total energy consumption system)
- ▶ Distribute emergency plan and manual to areas vulnerable to natural disasters due to climate change
- ▶ Promote eco-friendly streetlights(LED) replacing project
- ▶ Develop count-climate change plan in the area of tourism

Building "Low Carbon Green Growth Research System"

- ▶ Build greenhouse gas emission volume inventory system
- ▶ Study water resource management technology against climate change
- ▶ Assess ecological impacts on Mt. Halla due to climate change and propose solutions
- ▶ Find methods of Jeju 's unique sea jungle development for high efficiency CO₂ reduction
- ▶ Study stable agricultural production to tackle climate change
- ▶ Select subtropical crops to address climate change
- ▶ Study for the selection of species suitable as raw material for bio energy

Top 7 Major Green Growth Projects of Jeju

Expansion of new and renewable energy facilities

Eco-base facilities unused land CDM project

Building of Asian climate change education center

Development of climate change landmark

Development of self public bicycle system

Introduction of emission right transaction & carbon point system

Set-up of online electric car infrastructure

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V. Expected Effects of Jeju Carbon Neutral Island

Addressing climate change is not a choice but a must. Now we have to take the lead in this area so that the nation can achieve greatest national progress at the least cost, and Jeju can become a world-famous eco-model island.

Thank you.

감사합니다.

