

Taiwan's Climate Change Policies toward the Common Future

Dr. Hui-Chen Chien

Counselor/Executive Director
GHG Reduction Management Office
Taiwan Environmental Protection Administration



1



行政院環境保護署
Executive Yuan, E.P.A.

Outline



- 1) Climate Change and Taiwan
- 2) Adaptation Strategies
- 3) Mitigation Strategies
- 4) International Partnerships
- 5) Conclusions



2



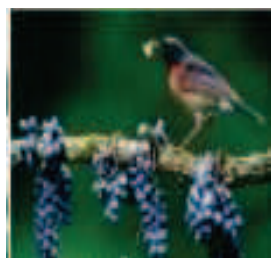
行政院環境保護署
Executive Yuan, E.P.A.

1) Background on Taiwan



Taiwan: Beautiful Formosa

Vulnerable Island with Rich Biodiversity



Area: 36,000 square kilometers

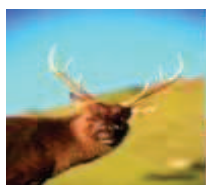
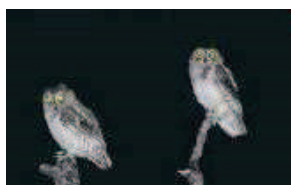
Population: 23 million

Steep topography:

- 36,000 km² with Jade Mountain close to 4,000m. Covers both the tropical and subtropical zones

Rich biodiversity:

- 50,000 species, 1.5% of the world
- one-third is endemic



Climate Change Impacts on Taiwan

Taiwan is very vulnerable to climate change impacts



Temperature



Rainfall



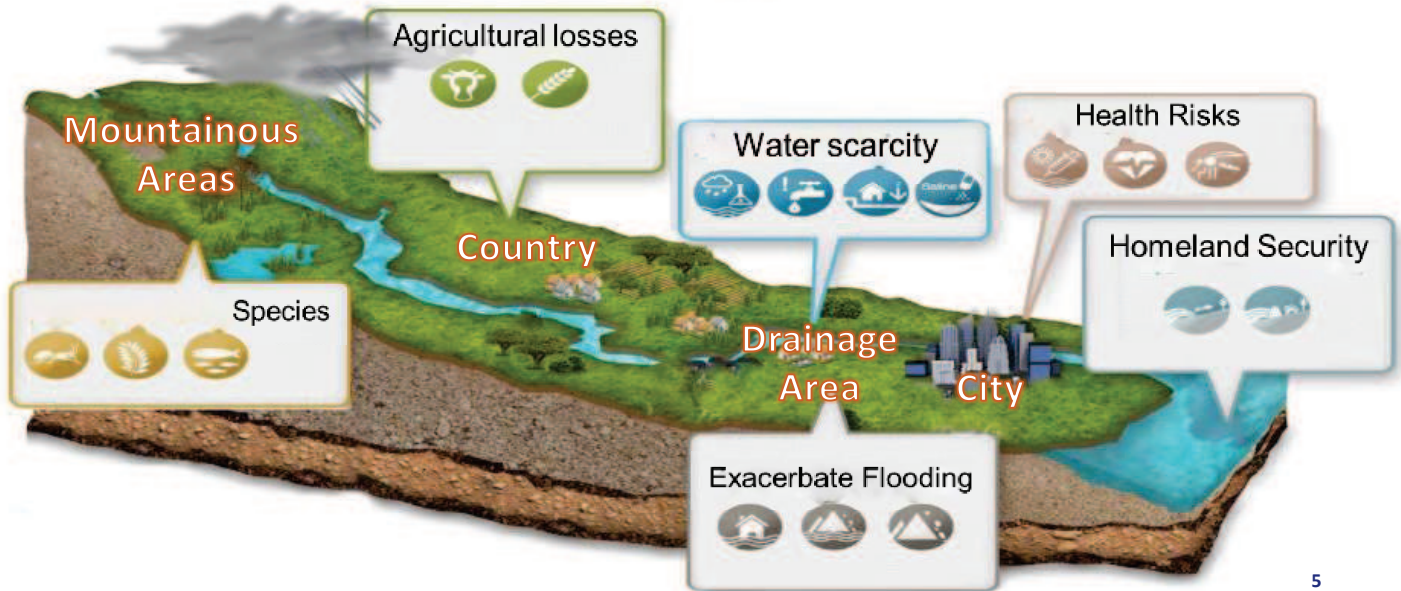
Extreme events



Typhoons



Sea level



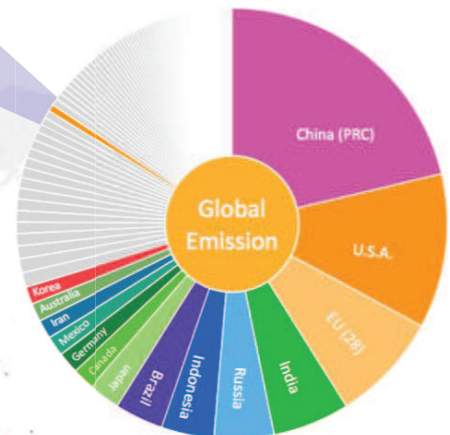
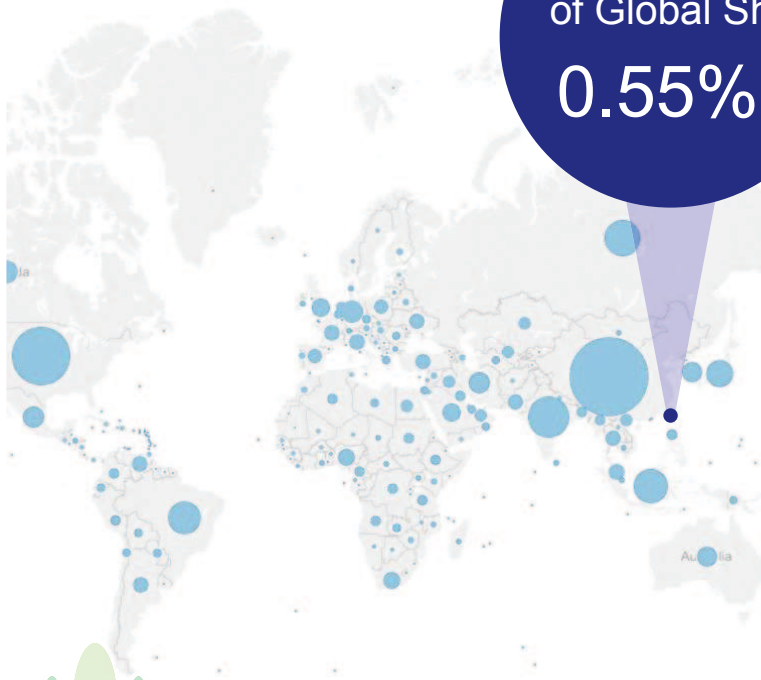
5



Taiwan's share in global GHG emissions

Rank: 31th
of Global Share
0.55%

Economy depends upon international trade, mainly composed of Small and Medium Enterprises.



An island with an independent electricity grid. Imported energy making up over 98% of energy demand.



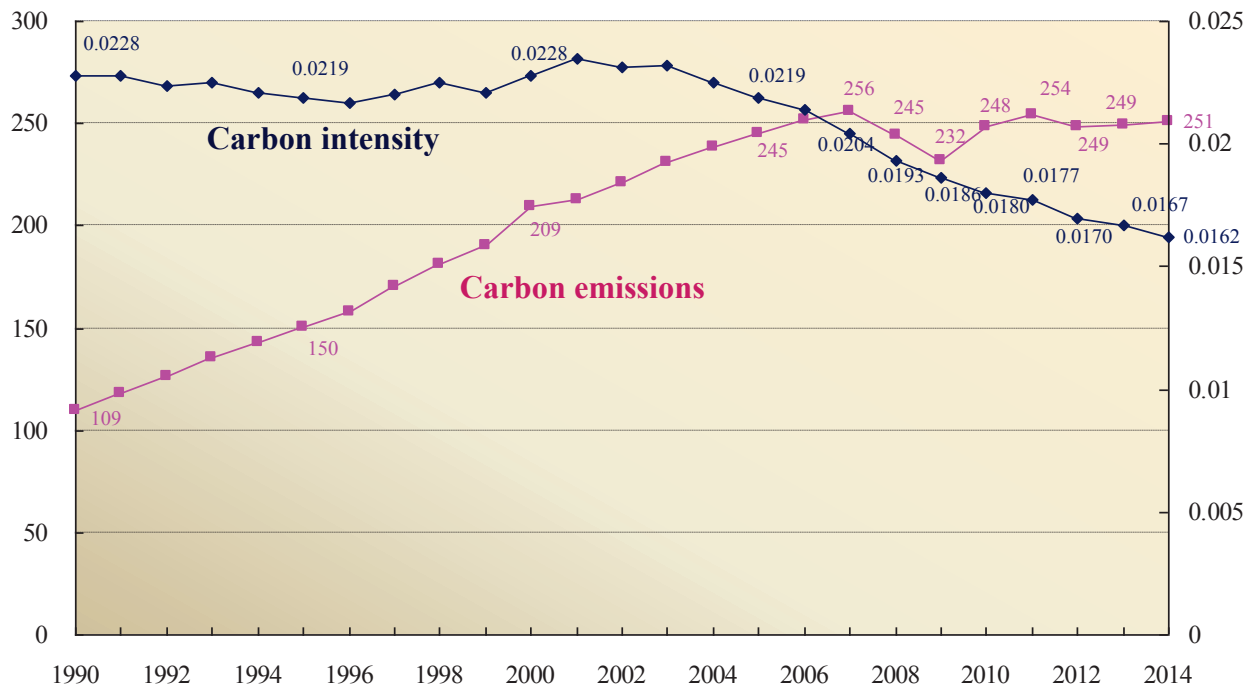
Ref: World Resources Institute (WRI) <http://cait.wri.org/>



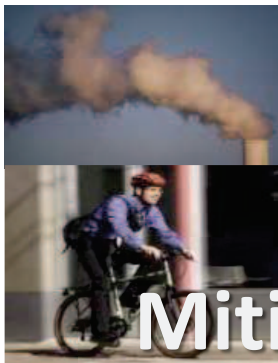
行政院環境保護署
Environmental Protection Administration
Taipei, Taiwan, R.O.C.

Carbon Emissions in Taiwan

(1990-2014)

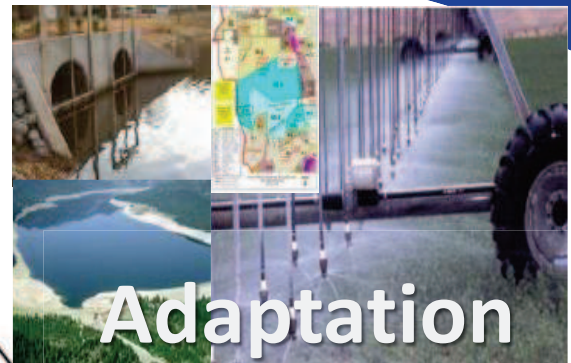


Strategies for climate change



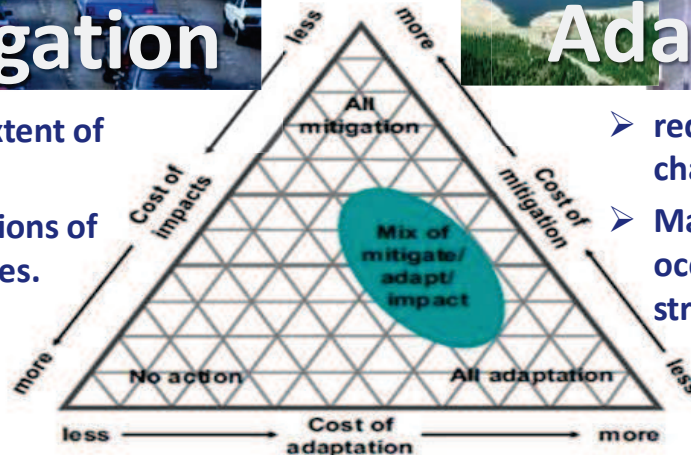
Mitigation

- Reducing the extent of climate change.
- Reducing emissions of greenhouse gases.



Adaptation

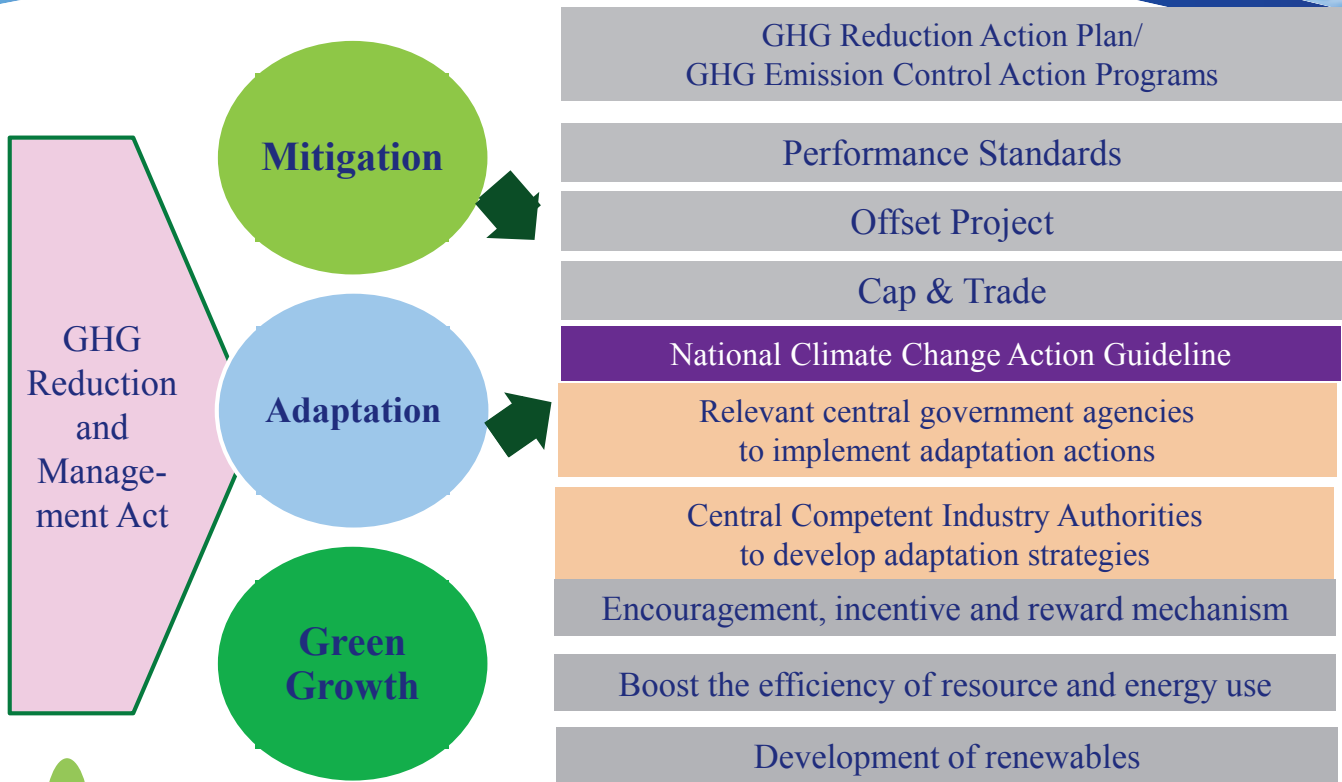
- reducing the impact of change.
- Managing the change that occurs as mitigation strategies are implemented.



Green Growth



Climate Change Legislation

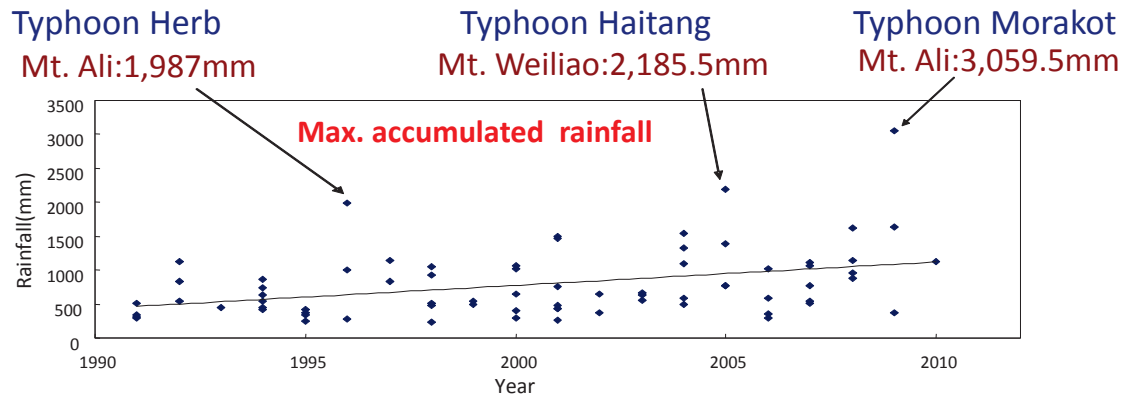


2) Adaptation Strategies and Actions



Climate Change Impacts on Taiwan

❖ Extreme weather events



Source: Water Resource Agency, Taiwan

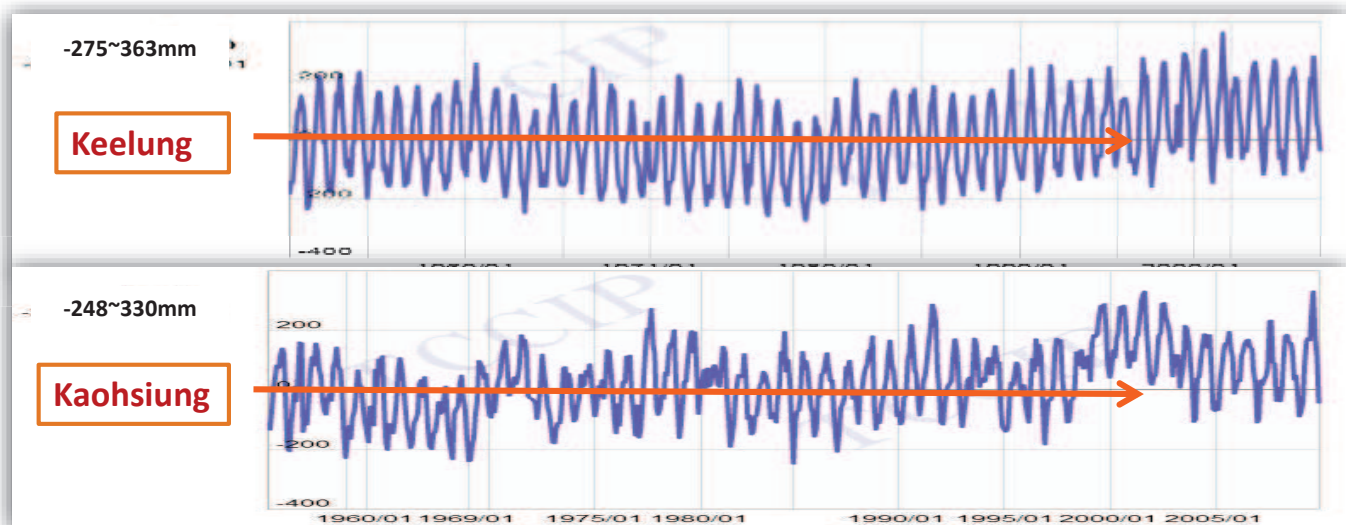
13



行政院環境保護署
Executive Yuan Environmental Protection Agency

Climate Change Impacts on Taiwan

❖ Average Sea-level Change (1950~2000) in Taiwan cities



Source : Taiwan Climate Change Projection and Information Platform

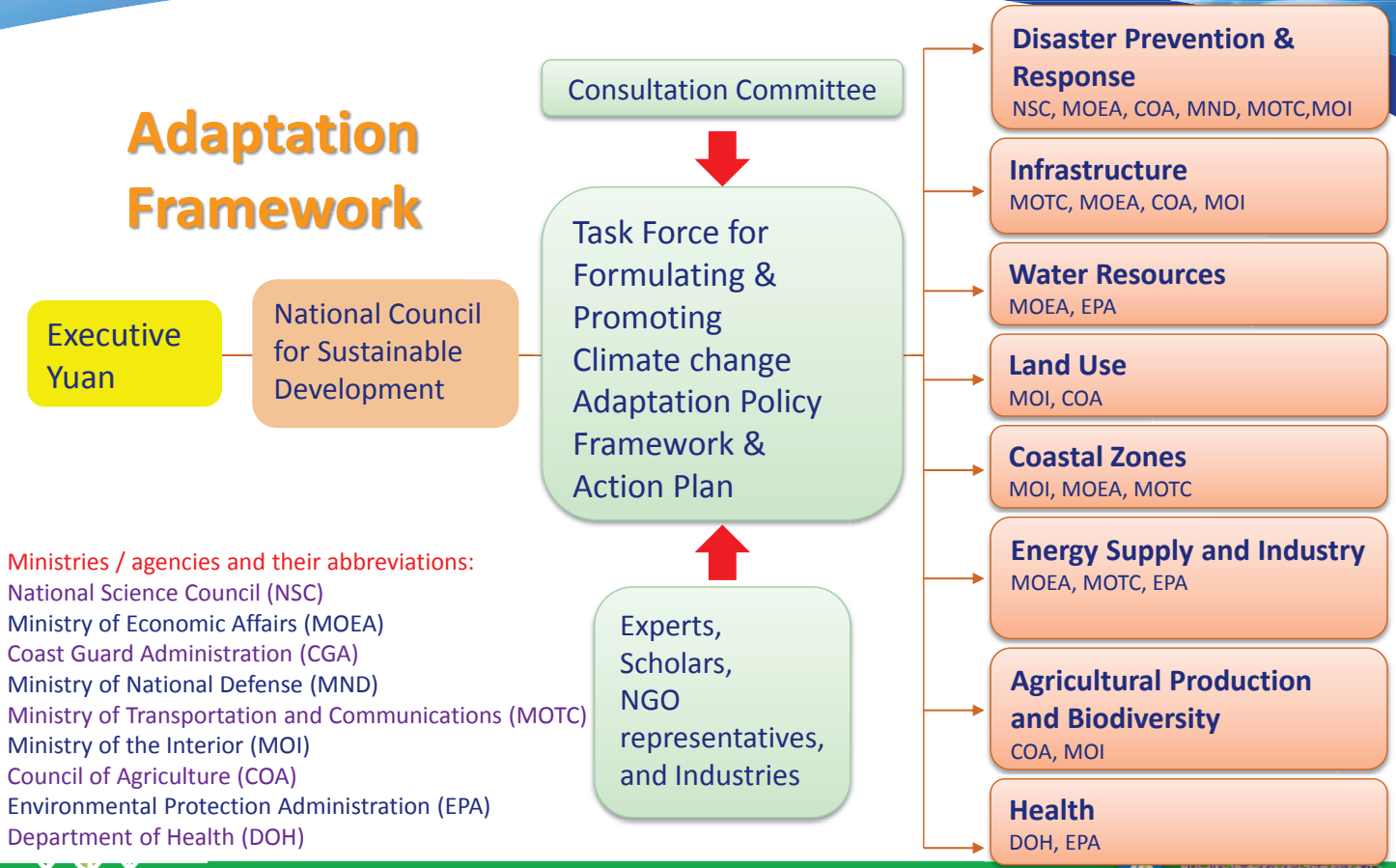
14



行政院環境保護署
Executive Yuan Environmental Protection Agency

National Adaptation Policy

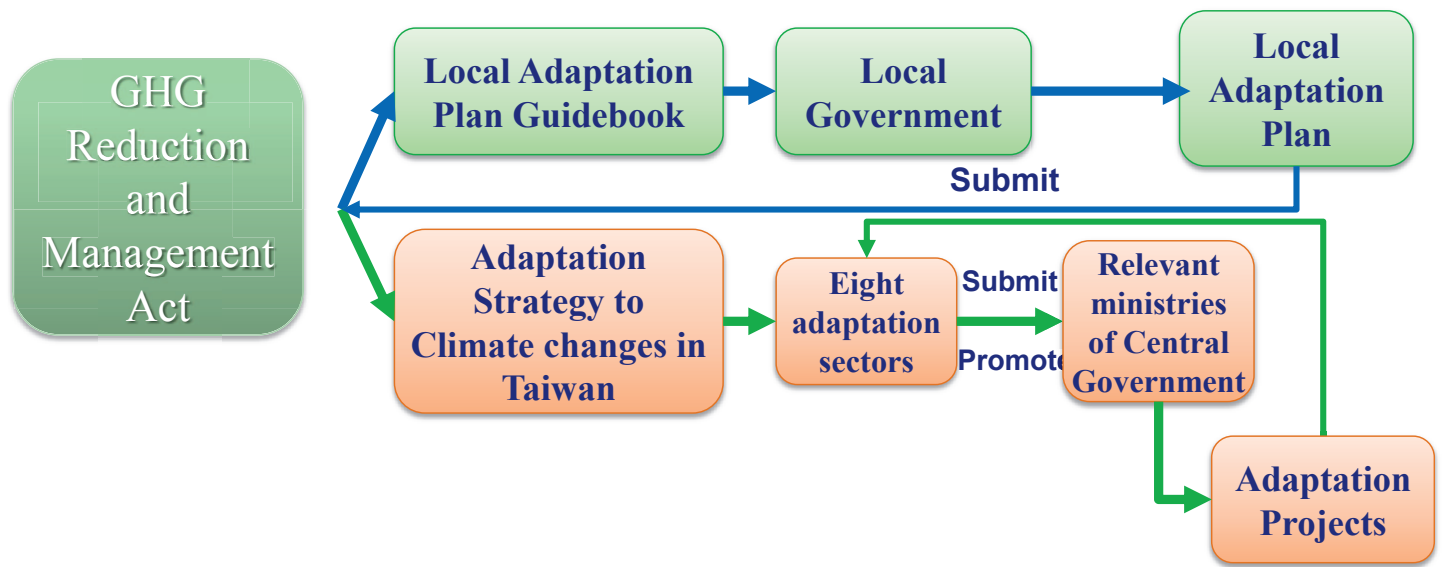
Adaptation Framework



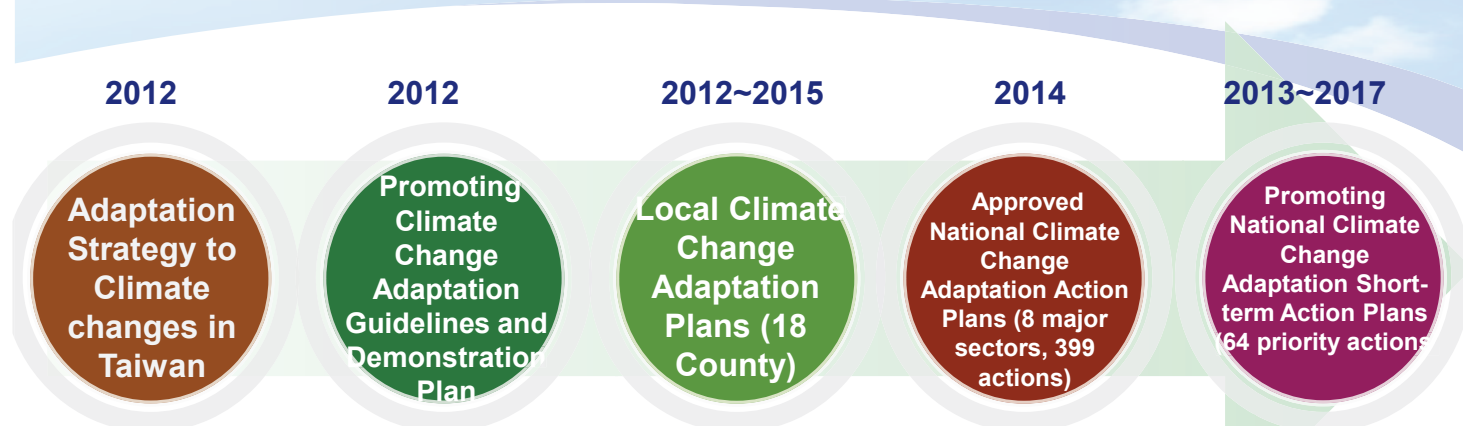
Ministries / agencies and their abbreviations:
 National Science Council (NSC)
 Ministry of Economic Affairs (MOEA)
 Coast Guard Administration (CGA)
 Ministry of National Defense (MND)
 Ministry of Transportation and Communications (MOTC)
 Ministry of the Interior (MOI)
 Council of Agriculture (COA)
 Environmental Protection Administration (EPA)
 Department of Health (DOH)

source: Adaptation Strategy to Climate changes in Taiwan

Promotion of Adaptation Policies



Promotion of Adaptation Policy in Taiwan



Eight adaptation sectors	The subject of adaptation	Number of Action Projects	Number of Priority Projects
Disasters	Risk	48	12
Land use	Vulnerability	36	16
Water resources	Risk	69	13
Infrastructure	Vulnerability	47	7
Energy supply and industry	Vulnerability	43	19
Coastal Zones	Vulnerability	50	8
Health	Vulnerability	65	9
Agricultural Production & Biodiversity	Vulnerability	26	9



Adaptation under GHG Act



Environmental Protection Administration (EPA)
“Greenhouse Gas Reduction and Management Act”

Article 1	Setting adaptation strategy of climate change
Article 8	Work of climate change adaptation
Article 9	National Climate Change Action Guideline
Article 13	Assessment of climate change impact
Article 19	GHG Management Fund
Article 27	Grants or subsidies management method



Adaptation under GHG Act



Greenhouse Gas Reduction and Management Act

mitigation and adaptation work (17)

National Climate Change
Action Guideline

Mitigation

GHG Reduction
Action Plan

Adaptation

National Climate
Change
Adaptation
Action
Plan



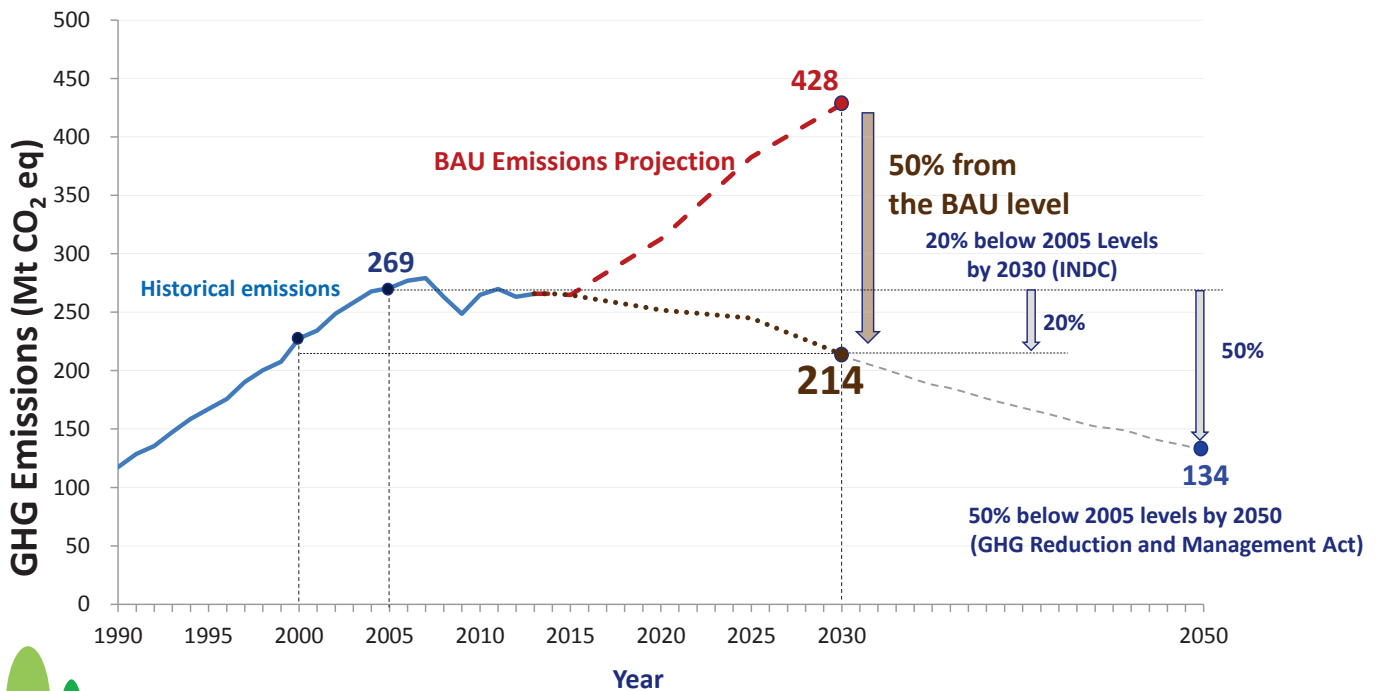
3) Mitigation Strategies and Actions





Taiwan's GHG Reduction Goals

2030's GHG emission will be 50% of the BAU about 2000's level (20% below 2005's level)



Taiwan's INDC

Emission Target	Greenhouse gas emission reduction (214 MtCO ₂ eq) by 50% from the business-as-usual level (428 MtCO ₂ eq) by 2030
Scope	Economy-wide
Gases covered	CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆ , NF ₃
Sectors covered	Energy; Industrial processes and product use; Agriculture; Land-use, Land-use change and forestry; Waste
Assumptions and Methodological Approaches	2006 IPCC Guidelines for National Greenhouse Gas Inventories Global Warming Potential used in IPCC AR4
Credits from International Market Mechanisms	The emissions reduction target is committed to the domestic measures mostly. Future reduction potential can benefit from being involved in the international market mechanism.



Emissions reduction targets

Long-term goal

- Cut emissions by 50% below 2005 level by 2050.
- The goal is subject to adjustment according to international and domestic circumstances.

Periodic five-year reduction targets

- Determined by the principles for the selection of targets and control methods.
- Convening an Advisory Committee consisting of scientists, experts, and private groups to advise government to set principles.

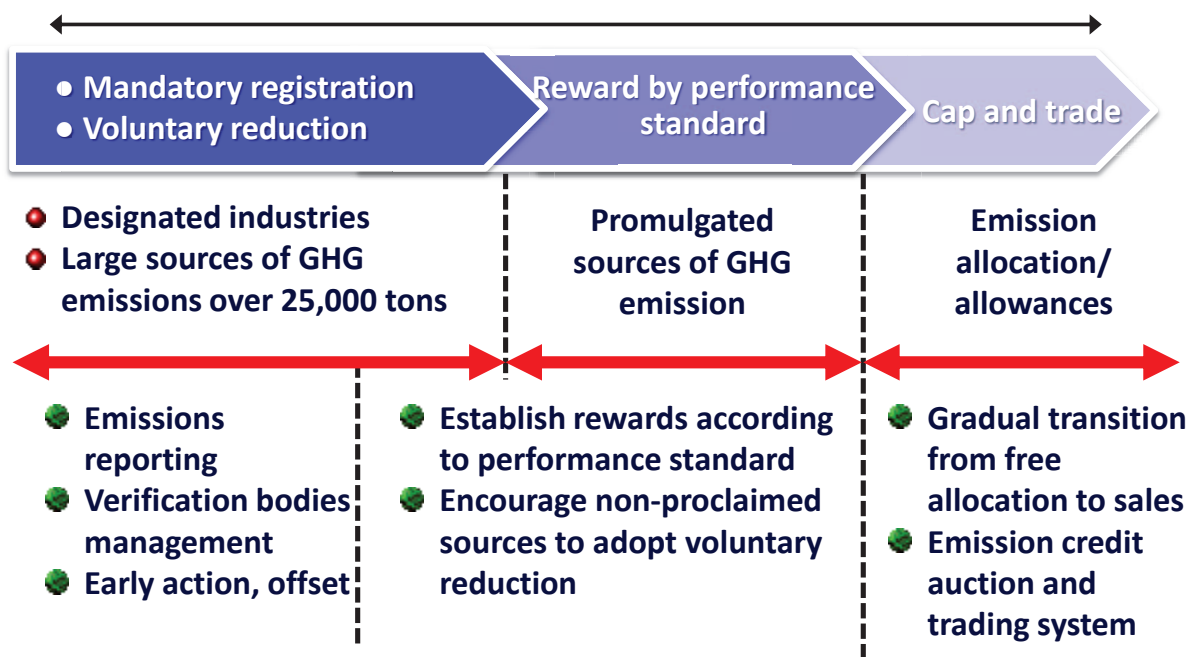
23



行政院環境保護署
Environmental Protection Administration
Executive Yuan, R.O.C.

Management Strategy

GHG Reduction and Management Act

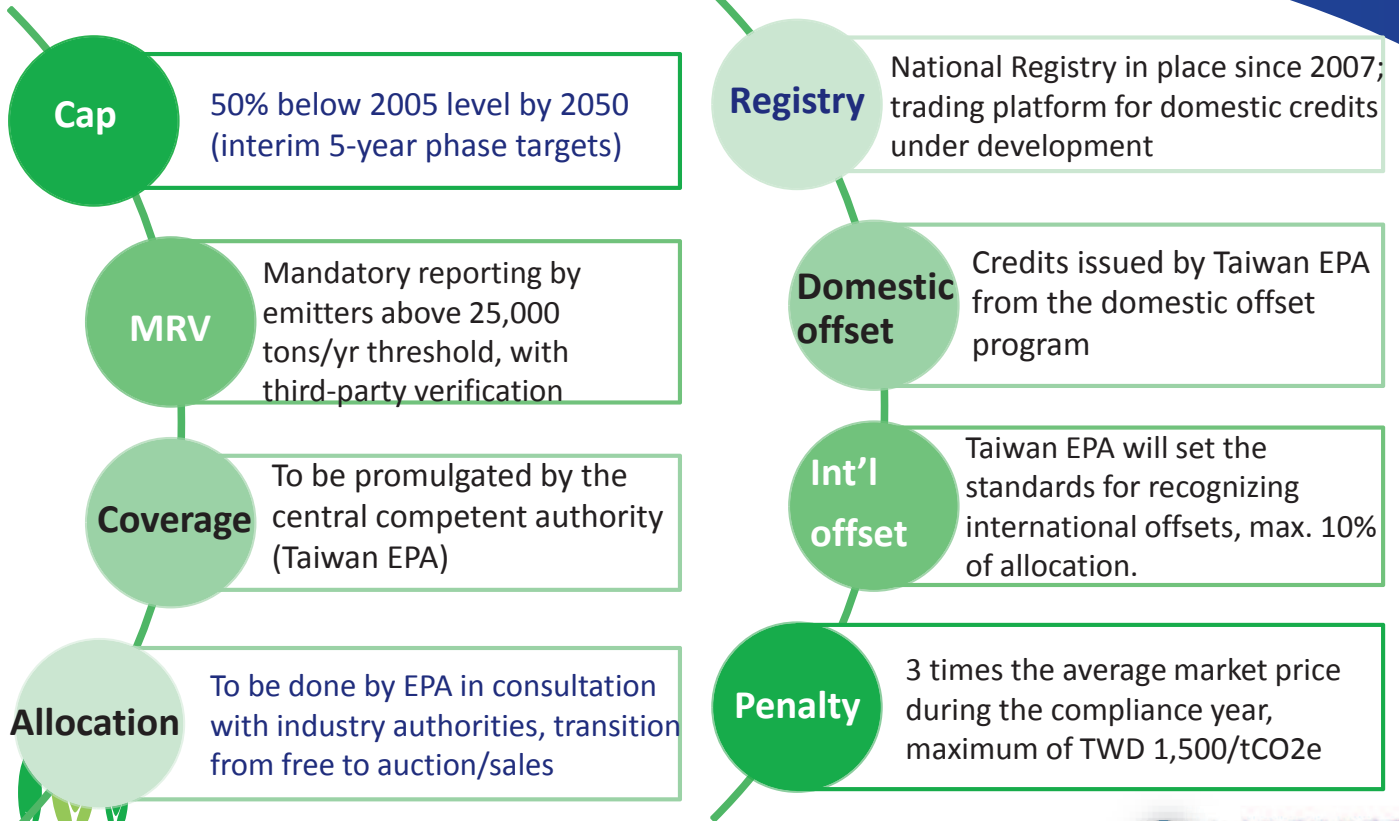


24

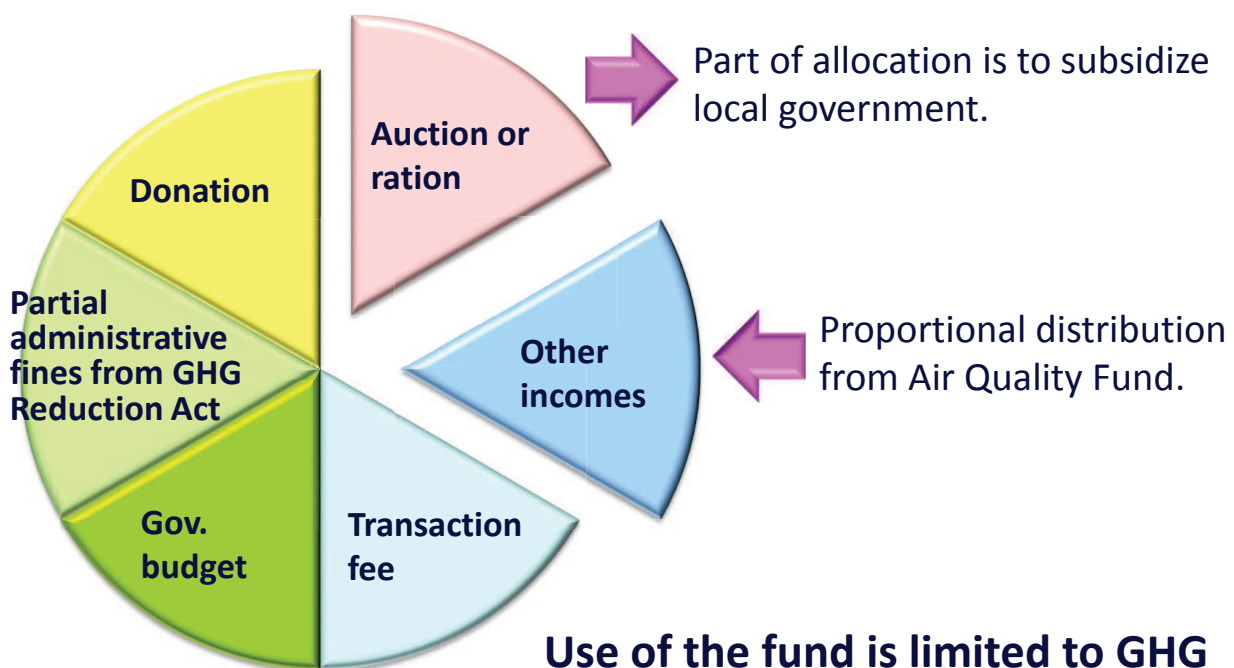


行政院環境保護署
Environmental Protection Administration
Executive Yuan, R.O.C.

Carbon Market Elements under GHG Act



GHG management fund



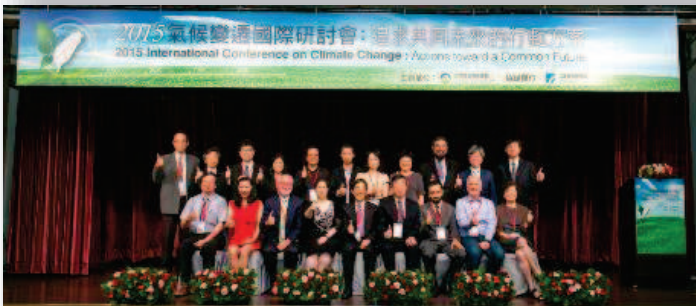
Use of the fund is limited to GHG reduction and climate change adaptation.



4) International partnerships



Collaborative / promotion programs



Pan Pacific Partnership on Adaptation to Climate Change



2014 Adaptation Conference, Taipei

Focusing Attention on Climate Change and Pacific Island Nations

The 2014 Pan Pacific Partnership on Climate Change Adaptation; Taipei, Taiwan, 29 September to 2 October 2014



Citation: Wuebbles, D., W. Higgins, and H.C. Chien (2015), Focusing attention on climate change and Pacific island nations, *Eos*, 96, doi:10.1029/2015EO033665. Published on 3 August 2015.

<https://eos.org/meeting-reports/focusing-attention-on-climate-change-and-pacific-island-nations>



29



行政院環境教育署
Environmental Education Center
No. 1, Sec. 2, Roosevelt Rd., Taipei, Taiwan

2015 Adaptation Conference, Hanoi



Recognize the importance of partnership on climate change adaptation



Cooperation of EPAT and MIT on Climate Colab project.



Partnership with NOAA on resilience toolkit, coast, climate literacy

30



行政院環境教育署
Environmental Education Center
No. 1, Sec. 2, Roosevelt Rd., Taipei, Taiwan



2015: Collaboration with MIT CCI to launch the Climate Colab Project



5) Conclusions

- ◆ Develop programs and implementation rules under the GHG Reduction and Management Act, with inter-agency and stakeholder consultation.
- ◆ With legal framework in place, use carbon pricing to promote green growth and technology export.
- ◆ Work with the international community through partnerships to mitigate climate change and adapt to its adverse effects.
- ◆ For the people and the planet, the time for global action is right NOW.



5) Conclusions

◆ Inaugural address by Taiwan's President Tsai, 20 May 2016:

“We will also not be absent on the prevention of global warming and climate change. We will create within the Executive Yuan an office for energy and carbon-reduction. We will regularly review goals for cutting greenhouse gas emissions in accordance with the agreement negotiated at the COP21 meeting in Paris. Together with partner nations we will safeguard a sustainable earth.”



33



行政院環境保護署
Environmental Protection Administration
Executive Yuan, TAIWAN

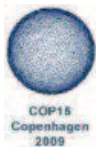
Meaningful Participation in the UNFCCC for Taiwan

2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | ...beyond

COP14/CMP4, Poznan



COP15/CMP5, Copenhagen



COP16/CMP6, Cancun



COP17/CMP7, Durban



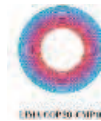
COP18/CMP8, Doha



COP19/CMP9, Warsaw, Poland



COP20/CMP10, Lima



COP21/CMP11, Paris




The road to Paris



34



行政院環境保護署
Environmental Protection Administration
Executive Yuan, TAIWAN



*Global warning:
we sink or swim together*

————— Make **Taiwan** part of the solution



Taiwan