

National Climate Change Adaptation Policy and Its Implementation in Korea

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(KEI)

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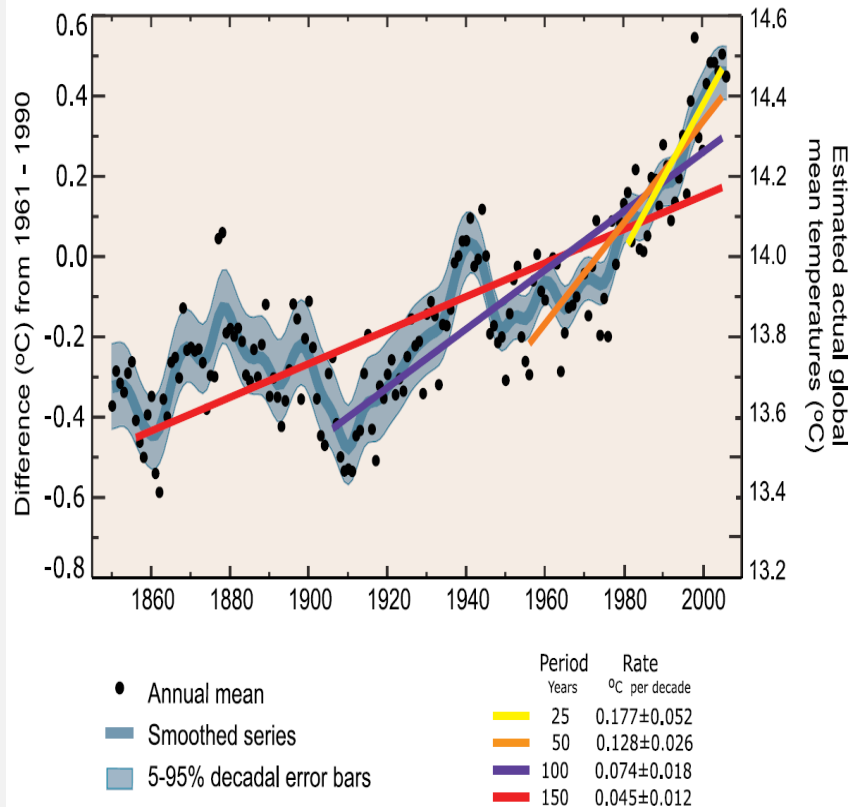
- Climate Change Impacts on Korea
- Adaptation Planning at the National Level
- Adaptation Planning at the Local Level
- Korea Adaptation Center for Climate Change



I . Climate Change Impacts on Korea

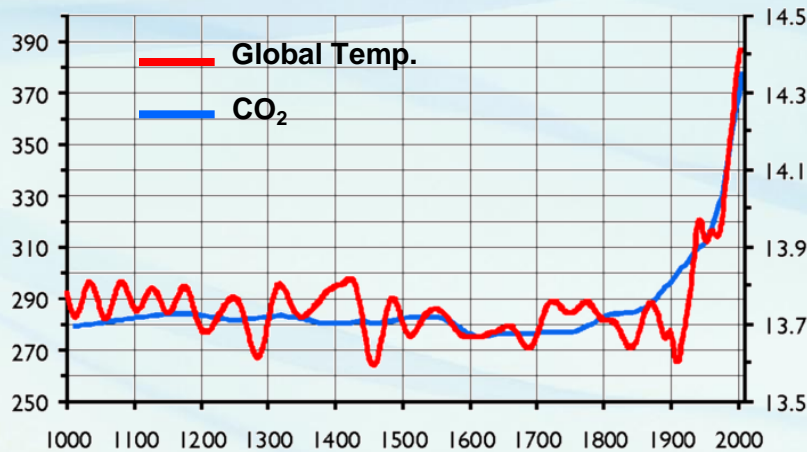
Climate Change Impacts on Korea

Global Mean Temperature Rise



I. Climate Change Trends

GHGs and Global Warming



Annual Increase rate of

GHG concentration : **~ 2ppm**

Global temperature : **+0.74°C/100yrs**

* Source : IPCC Fourth Assessment Report (AR4)

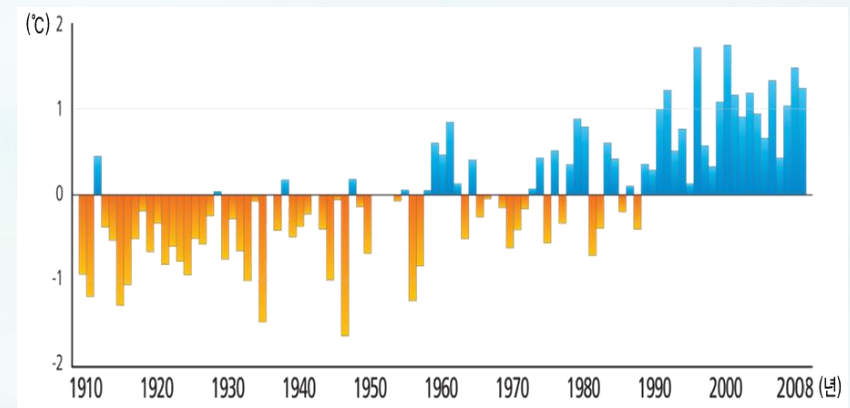
Trends in Korea

Temp. rise: **+1.7°C/100yrs** (6 major Cities)

Sea-Level rise: **+22cm /40yrs**

Seawater temp. rise: **+1.2~1.6°C/100yrs**

* Source : Korea Meteorological Administration



▲ Temperature Change of 6 Major Cities in Korea

1. Climate Change Impacts on Korea

Current and Expected Sectoral Impacts

Ecosystem



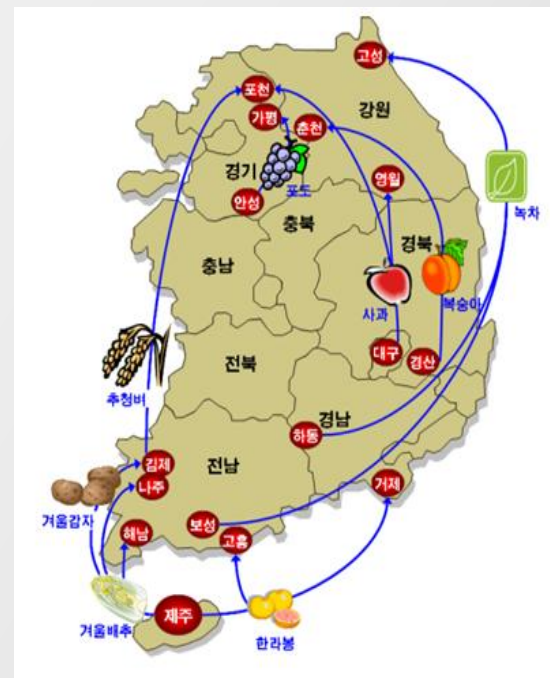
- ❖ More vulnerable over subtropical zone and mountain area

Forest



- ❖ Frequent land sliding due to heavy rainfall

Agriculture



- ❖ Cultivation area shifting

I . Climate Change Impacts on Korea

Current and Expected Sectoral Impacts

Health



- ❖ Increase of infectious diseases and heat wave

Social Infrastructure



- ❖ Highway and bridge damage by heavy rainfall

Disaster



- ❖ Increase of the cost of extreme weather event

I. Prospect of Climate Change by RCP Scenarios



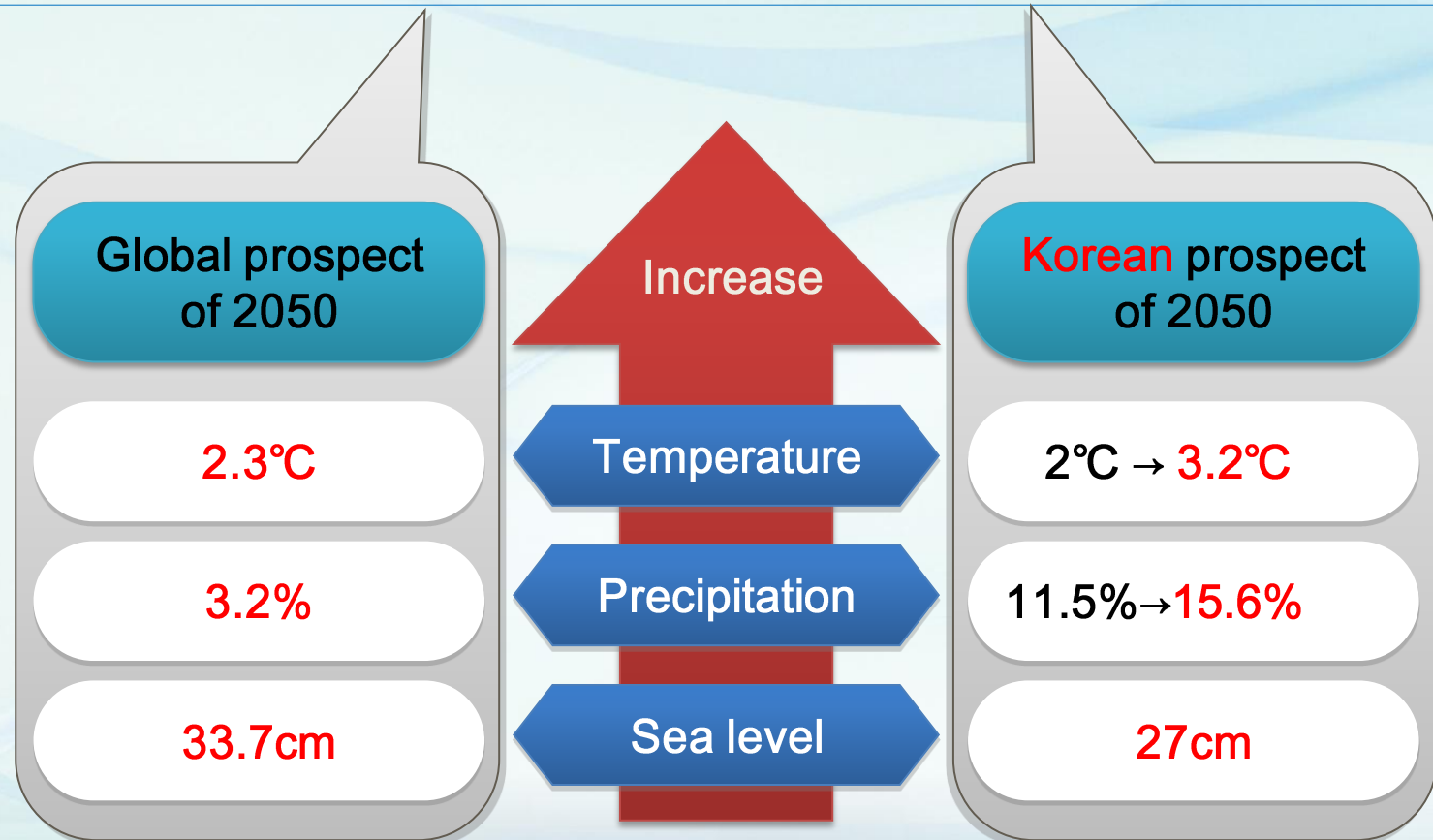
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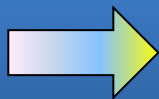
“Reflected in IPCC AR5 (2013)”

The temperature in Korea is expected to increase 1.1 °C ~1.5°C until 2020. In the worst case, the 1.8°C increase of temperature that occurred during the past 100 years may happen within 2020.



I. Future prospects

<Past>
1.8°C increase
for last 100 years



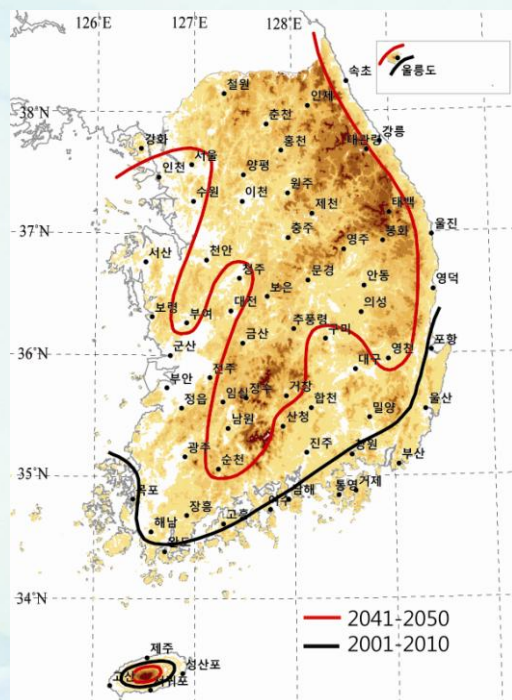
<Projected by 2050>
(New Scenario) +3.2°C

※ Old SRES Scenario +2.0°C

Change into Subtropical Climate

Change in Length of Season

Spring and summer will get longer,
but winter will get shorter.



Increase of **precipitation**(15.6%)
Increase of both **heavy rain** and
drought

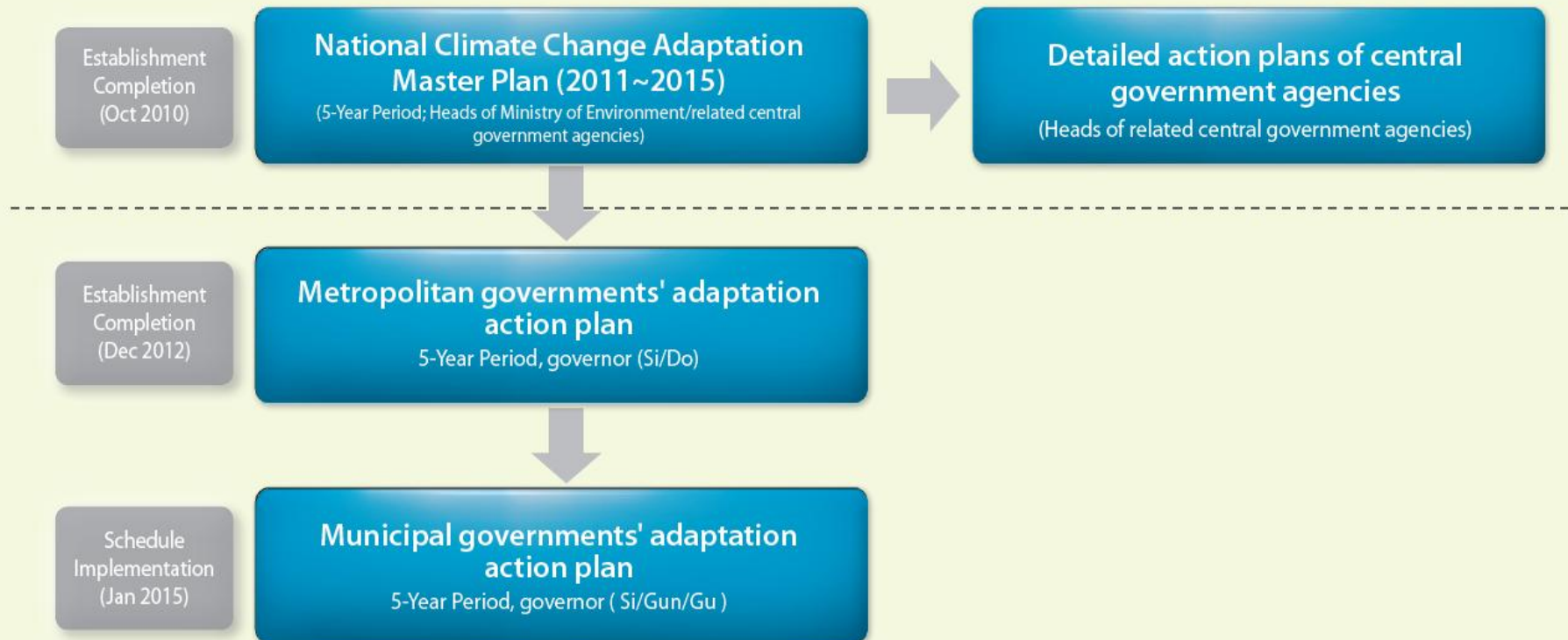
Increase of **heat wave**(7.2 times) &
tropical night(15 times) and **Sea-**
level rise in coast(east 34.9cm,
south 23.4cm, west 22.8cm)



II . Adaptation Planning at the National Level

II. Adaptation Planning at the National Level

National Climate Change Adaptation Master Plan ('11-15)



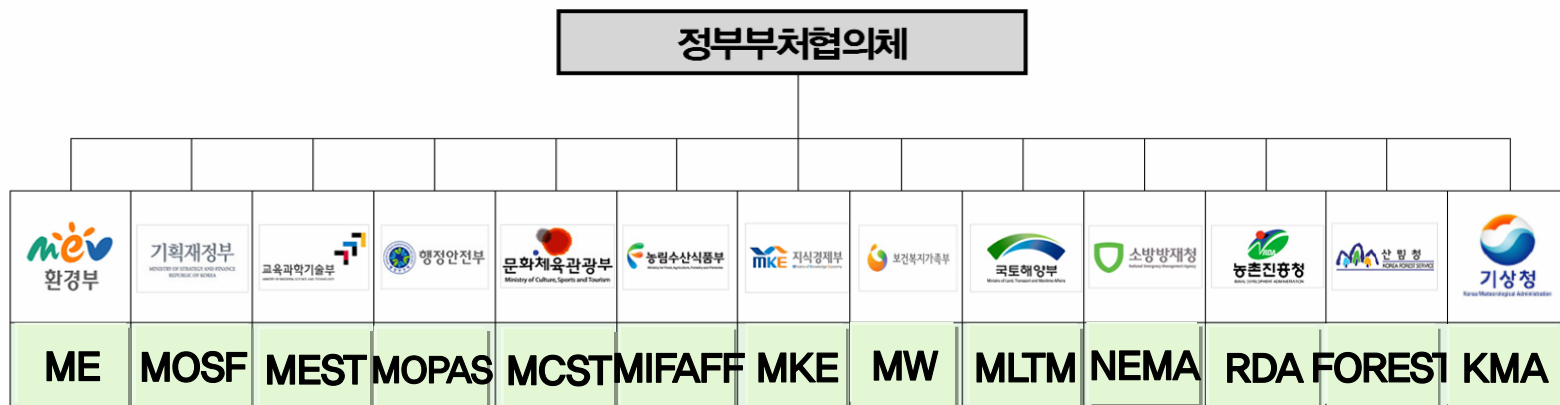
II. Adaptation Planning at the National Level

National Climate Change Adaptation Master Plan ('11-15)

Characteristics of the Plan

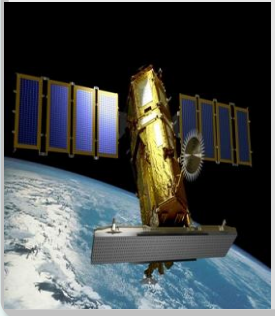
- ❖ The 1st legal plan by the Basic Act on Low Carbon, Green Growth('10.4)
- ❖ 13 related ministries were participated
- ❖ Departmental and local action plans are also being developed
- ❖ 1st revision was completed in 2012

Ministerial Level Committee



II. Sectoral Goal and Details

Monitoring



Ecosystem



Forest



- ❖ Providing sound basis of adaptation with the optimized climate change prediction
- ❖ Protecting the vulnerable species and preserving biodiversity
- ❖ Improving the forestry productivity and preventing landslide

Agriculture



Marine/ Fishery



Water



- ❖ Improving the agricultural productivity by management of agricultural and livestock product in an adaptive manner
- ❖ Strengthening competitiveness of marine and fishery by coping with sea level rise and sea surface temperature increase
- ❖ Making water supply more stable and preserving aquatic ecosystem

Health



Disaster

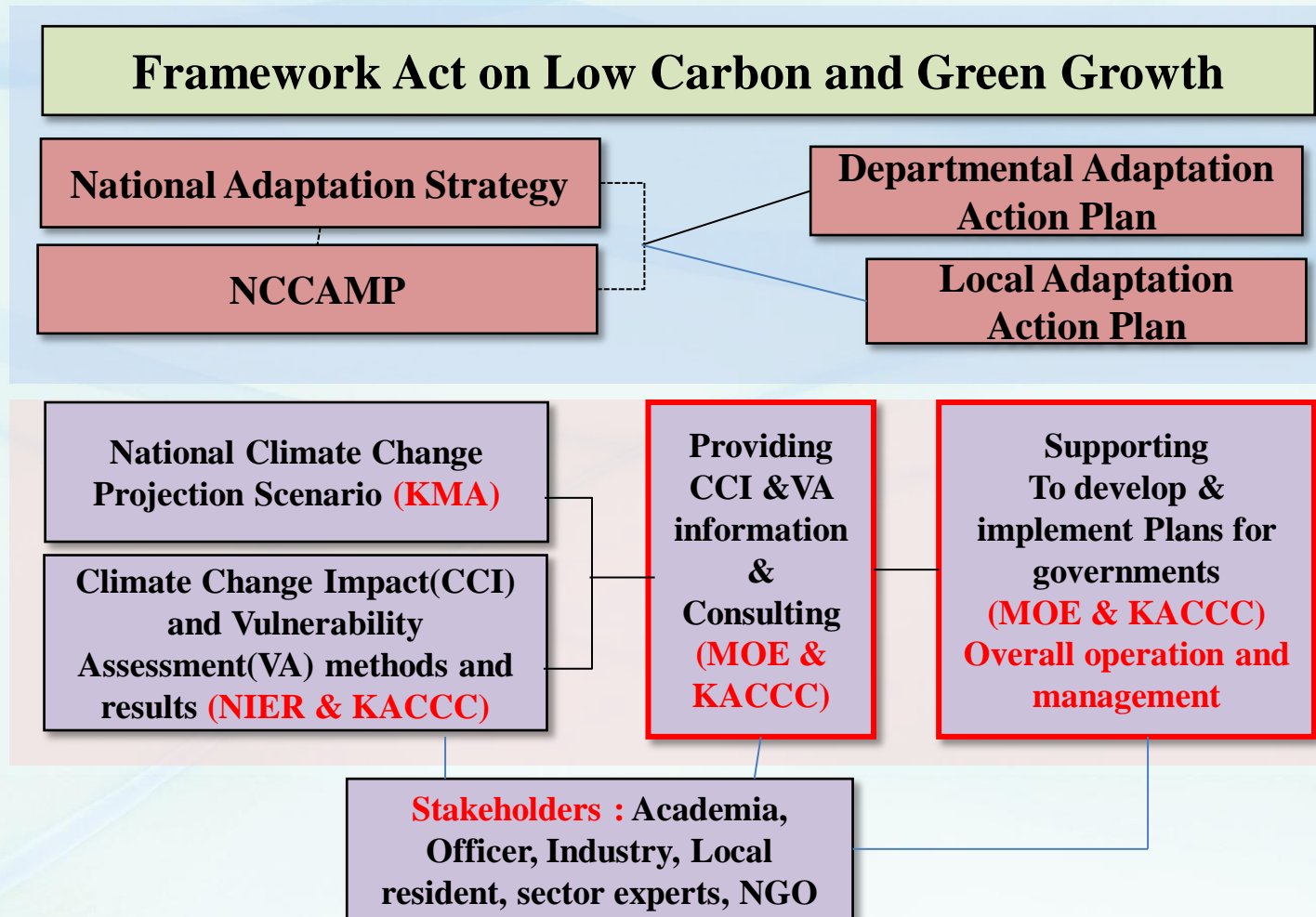


Adapt



- ❖ Taking adaptation action based on people's life style by protecting the vulnerable from extreme heat wave and infectious diseases
- ❖ Minimizing damage of citizen by operating **early warning system** and promoting **insurance** related in disaster
- ❖ Developing adaptation business and minimizing damage in energy and other industry

A supporting system and related organizations for development of CCA in Korea



*Climate Change Adaptation(CCA), Korea Meteorological Administration(KMA), National Institute of Environmental Research(NIER), the Ministry of Environment (MOE)

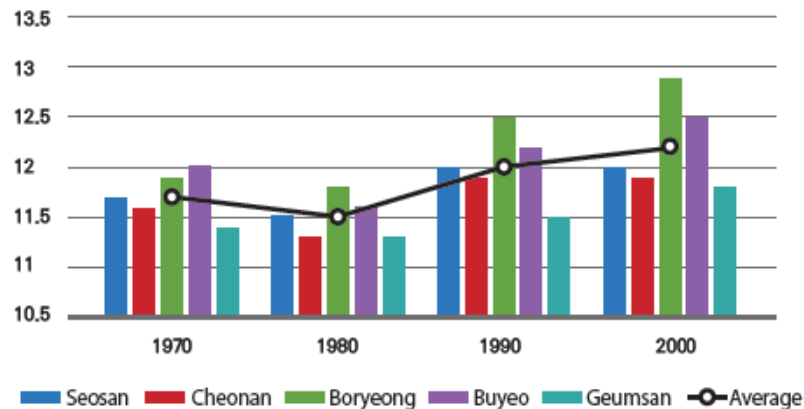


III . Adaptation Planning at the Local Level

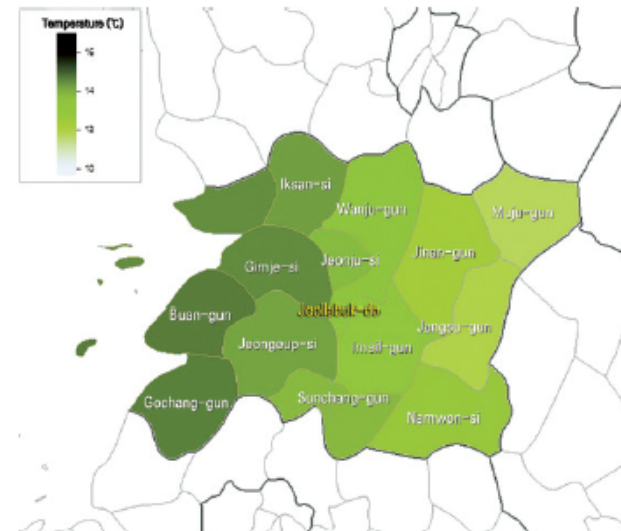
III. Adaptation Planning at the Local Level

Local Adaptation Action Plan in Korea

- Title: Local Climate Change Adaptation Action Plan of Metropolitan Si/Do
- Target Period: 2012 ~ 2015
- Establishing Entity: Metropolitan Mayors / Do governors
- Scope: 7 adaptation sectors and 3 supportive sectors



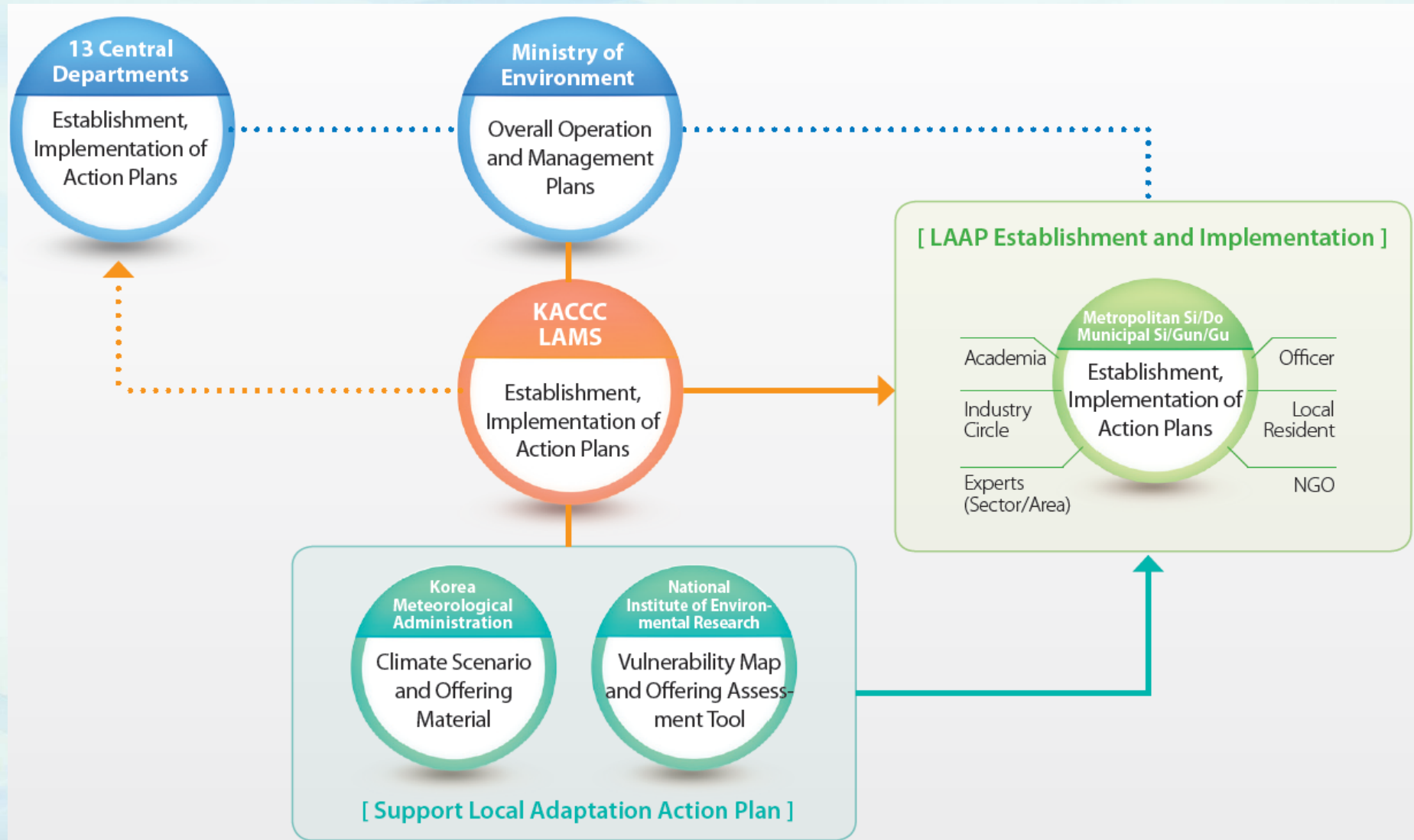
[Variation of average temperature]



[Temperature analysis of metropolitan (2050s)]

III. Adaptation Planning at the Local Level

Actors of Local Adaptation Planning



III. Adaptation Planning at the Local Level

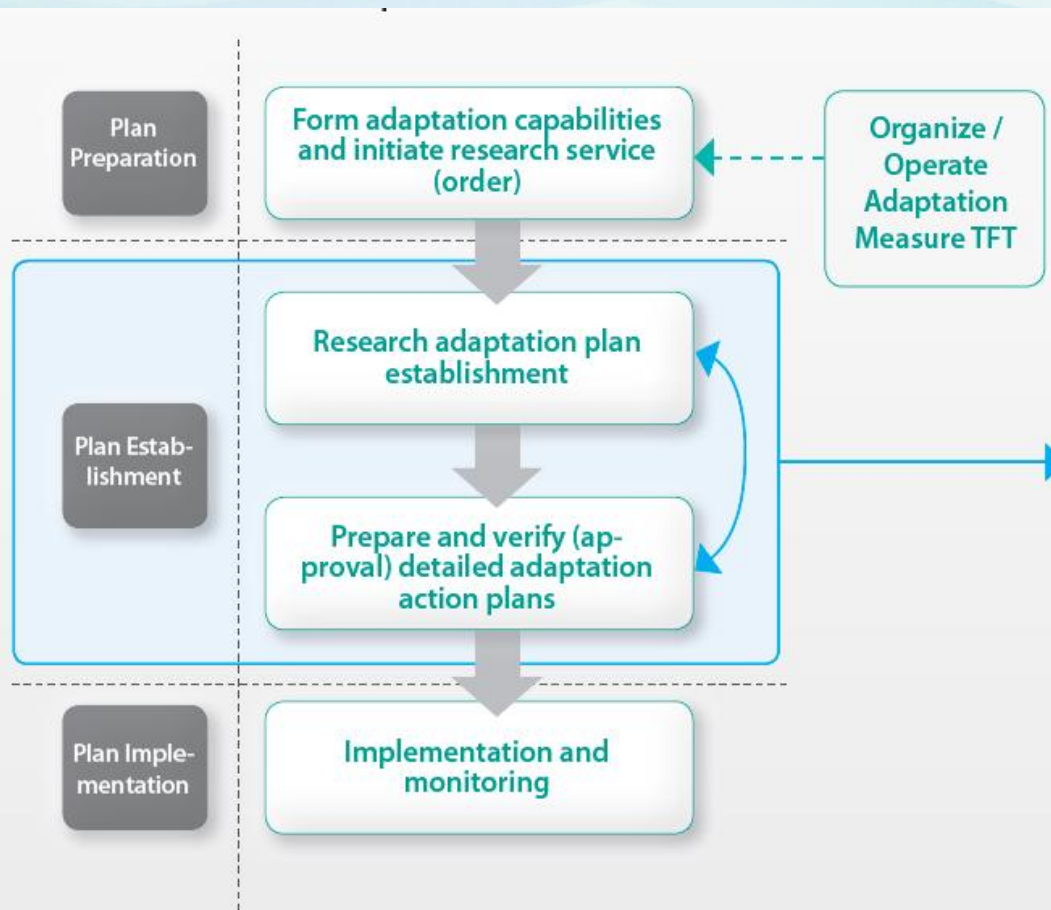


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Planning Process of Local Adaptation Action Plans



Local Adaptation Action Plan Establishment Process

- 1 Climate change status and prospection
- 2 Investigate/analyze domestic/overseas existing studies and cases and related materials existing
- 3 Assess climate change effects and vulnerabilities
- 4 Set vision and goals for adaptation measures
- 5 Explore and select adaptation area-specific measures
- 6 Prepare and verify (approval) annual detailed action plans
- 7 Prepare notification and implementation system

III. Adaptation Planning at the Local Level



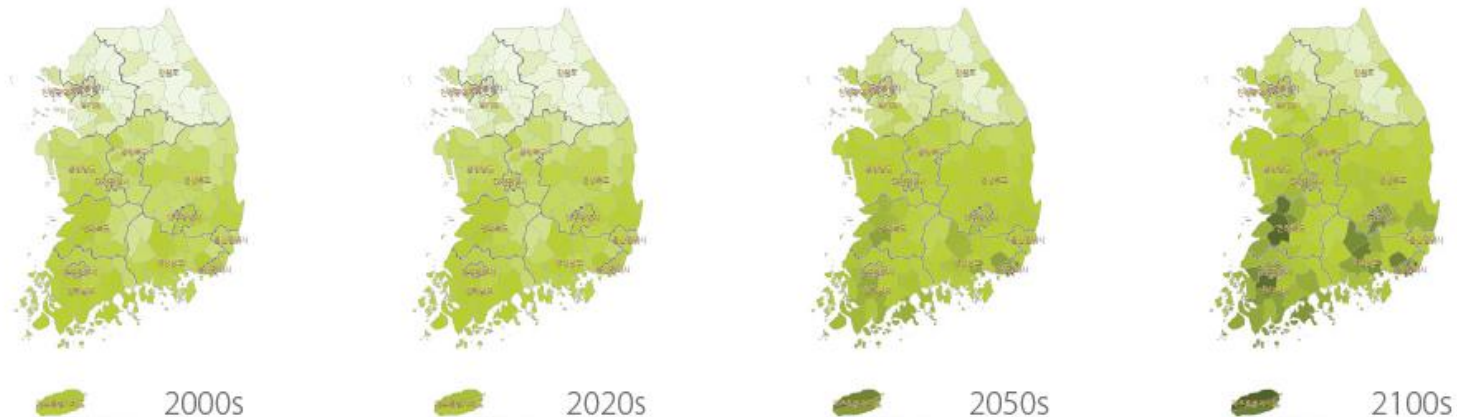
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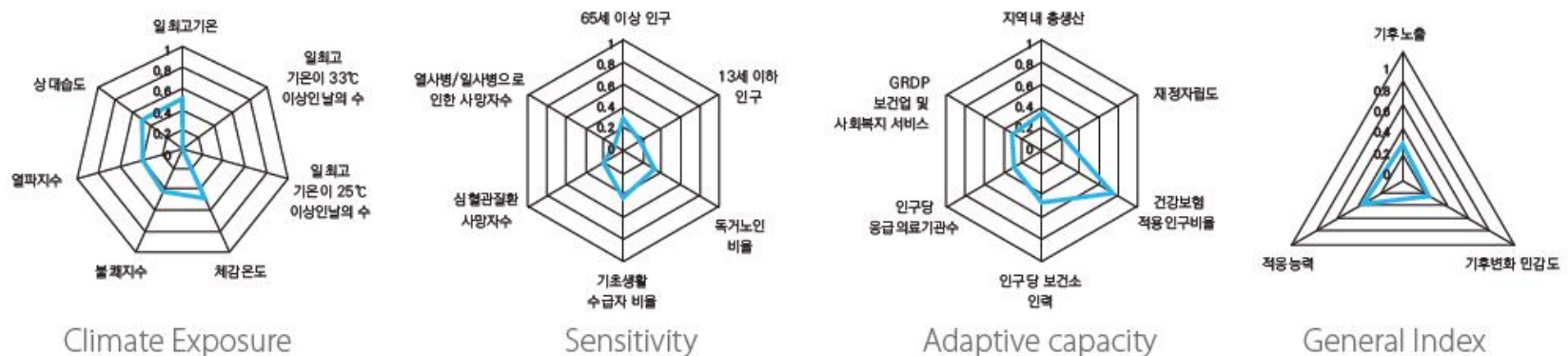
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Vulnerability Maps and Impact Factors

◎ The vulnerability maps in the present and the future



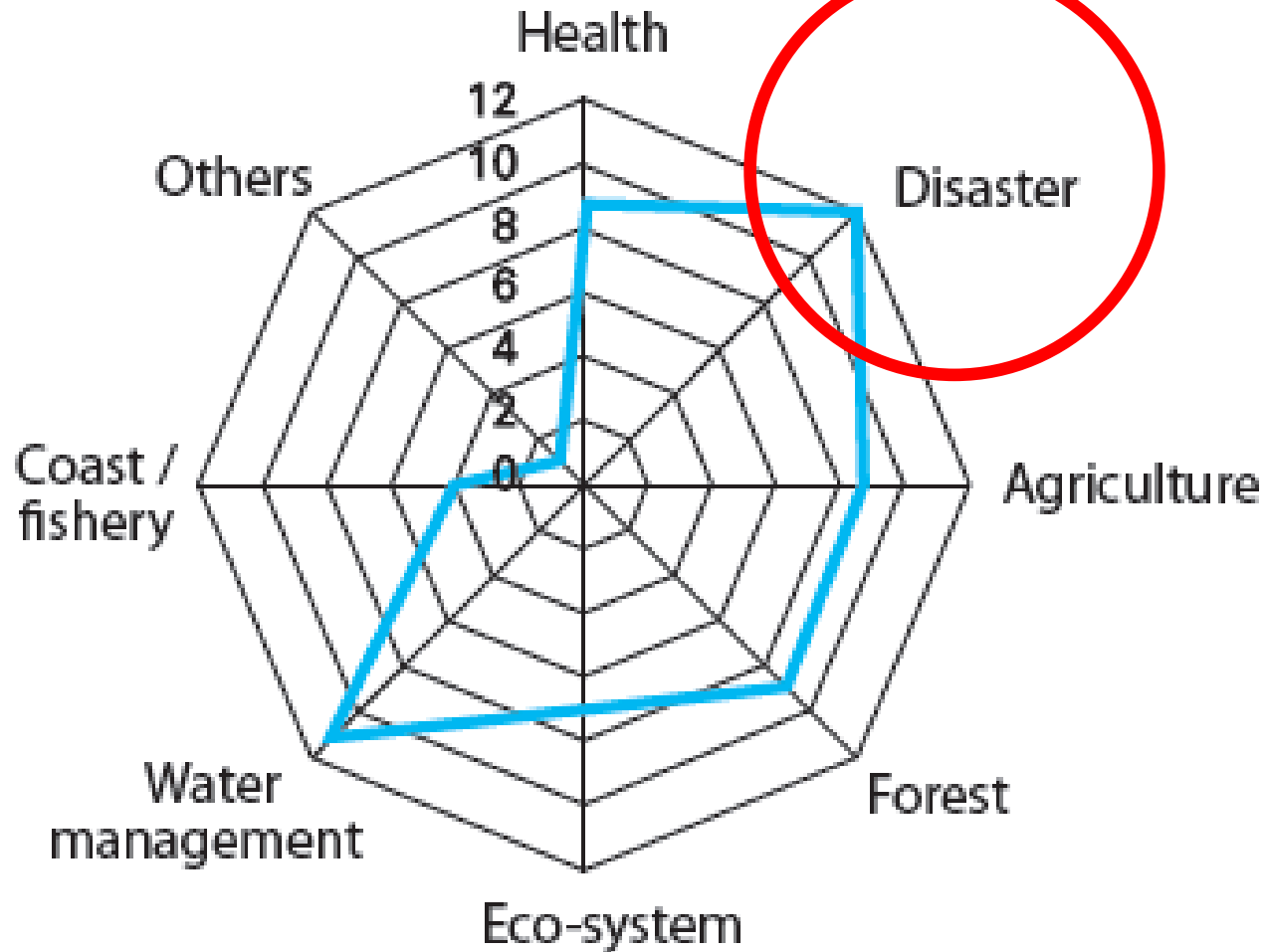
◎ The impact factors of proxy variables in the vulnerability assessment



[The vulnerability maps and the assessment tool(CCGIS) presented by the national government]

III. Adaptation Planning at the Local Level—outcome

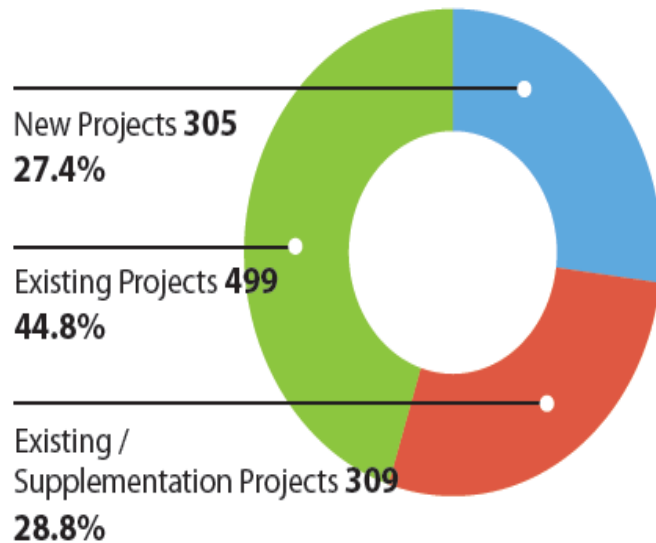
Focused Sector for Implementation



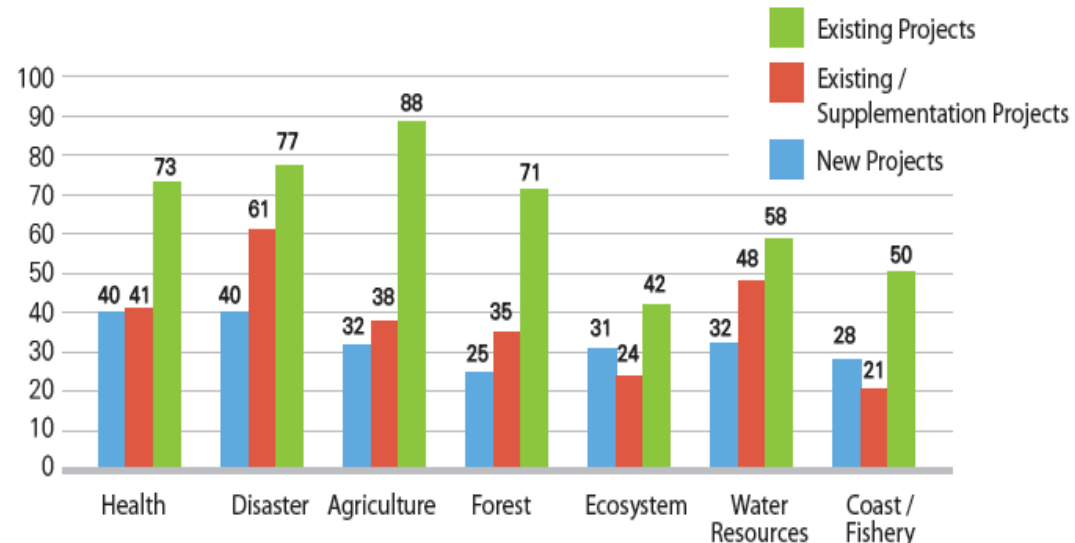
III. Adaptation Planning at the Local Level

Type of Projects in the Plans

- ✓ **Existing Projects** : agriculture(88) ~ eco-system (42)
- ✓ **Existing/Complementing Projects** : disaster (61)~coast/fishery (21)
- ✓ **New Projects** : Health (40), disaster (40)~forestry (25)



[Number of adaptation plans' type]



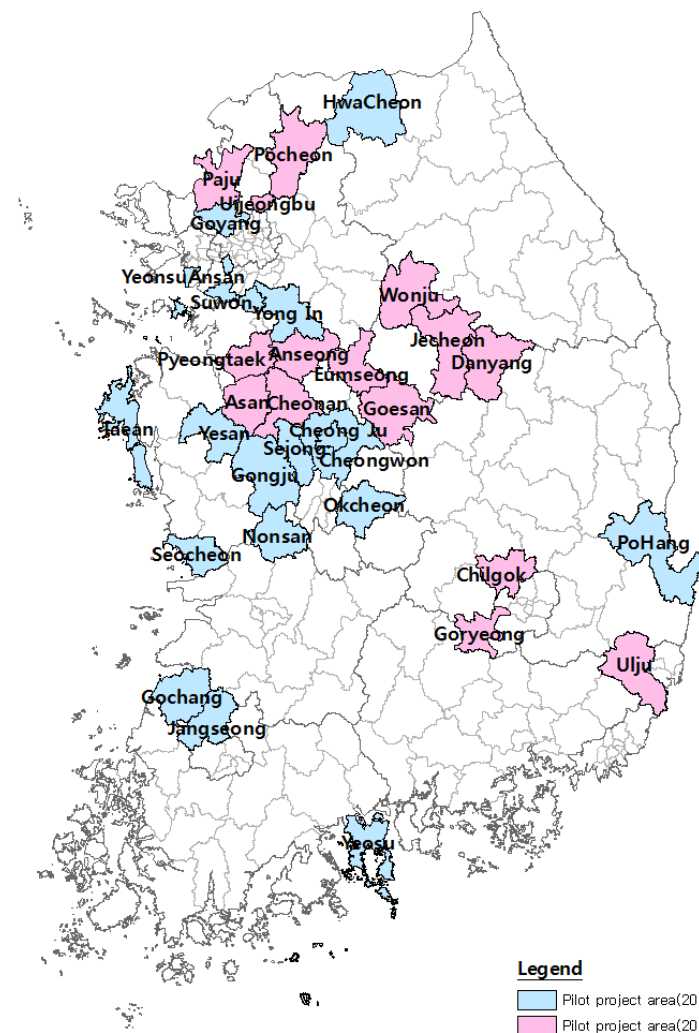
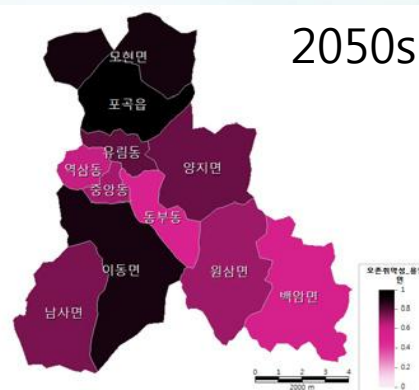
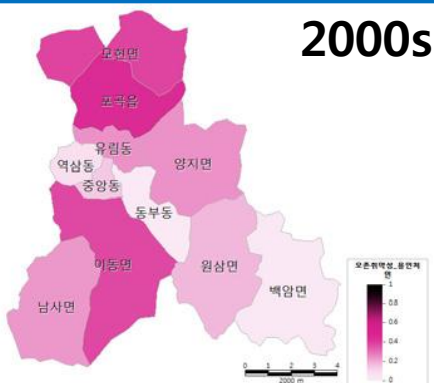
[Number of project by sector / type]

III. Adaptation Planning at the municipal Level

In anticipation of the 2015 mandatory establishment/enforcement, 35 municipal governments were selected as pilot areas for establishing LAPs

- **Title** : The Local Climate Change Adaptation Action Plan of **Pilot Si/Gun/Gu** (20 areas in 2012, 15 areas in 2013)
- **Target Period** : 2013~2017 (2012 candidates); 2014~2018 (2013 candidates)
- **Establishing Entity** : Si/Gun/Gu Heads
- **Scope** : 7 adaptation sectors and 3 supportive sectors
※ 3 supportive sectors are optional.

The vulnerability map



III. New Policy and Research Direction

New Policy Direction for Adaptation

- The **bottom–up approach** should be further introduced focusing on the private sectors and vulnerable social groups.
- The **adaptive capacity to extreme climate change impacts** should be enhanced.
- Climate change adaptation should be **mainstreamed in national security and national resource management**.
- A **new business opportunity** induced by climate change should be discovered and nurtured.

Reinforcement of Adaptation Researches

- **R&D on adaptation** should be reinforced for more effective and efficient policies.
- An **integrated climate change adaptation information supporting system** should be developed.
- Further **researches on risk management strategies** responding to climate change should be conducted.
- **Cooperative researches and projects** with national and international adaptation organizations should be enhanced.



IV . Korea Adaptation Center for Climate Change

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Korea Adaptation Center for Climate Change

Establishment of KACCC

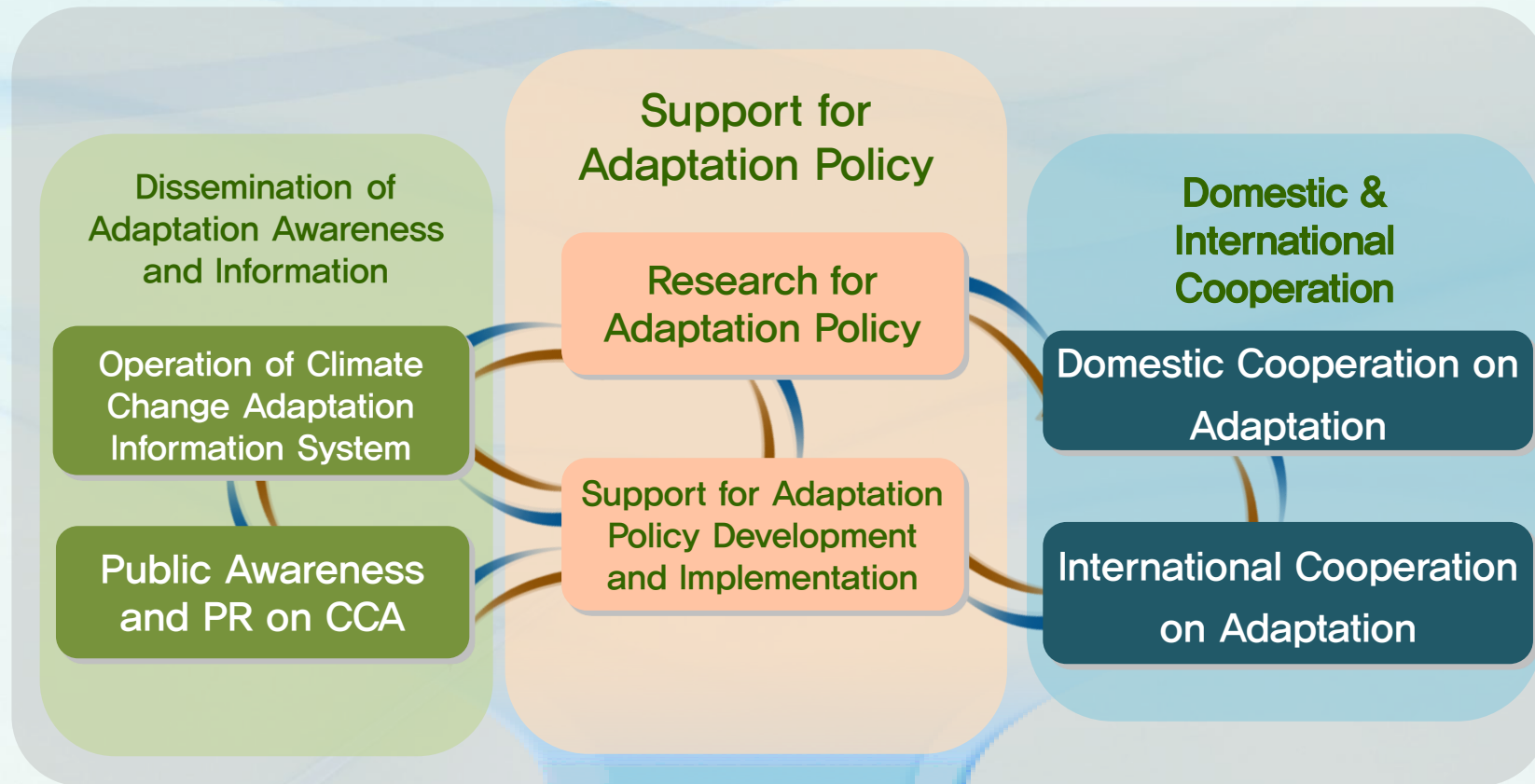
- Established on July 1, 2009
- Established based on Instruction of Establishment and Operation of KACCC (Ministry of Environment Instruction No. 850)
- The operation of KACCC was legalized by Clean Air Conservation Act (Revised on July 21, 2012).

Main Functions of KACCC

- Policy support for climate change adaptation and development of policy tools
- Support for climate change impact and vulnerability assessments
- Establishment of national and international climate change adaptation networks
- Support for the government delegation at international discussions on adaptation
- Research works necessary for climate change adaptation policy and practices

IV. Korea Adaptation Center for Climate Change

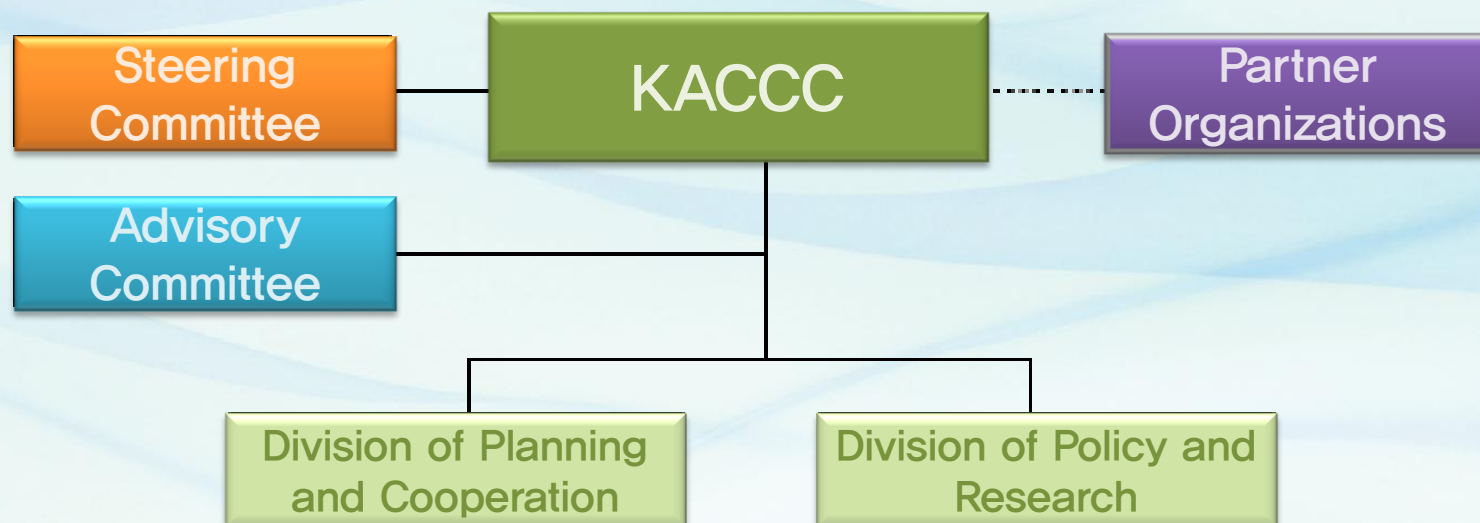
Task of KACCC



**Leading Policy Development and Research
for Enhancement of National Adaptation Capacity**

IV. Korea Adaptation Center for Climate Change

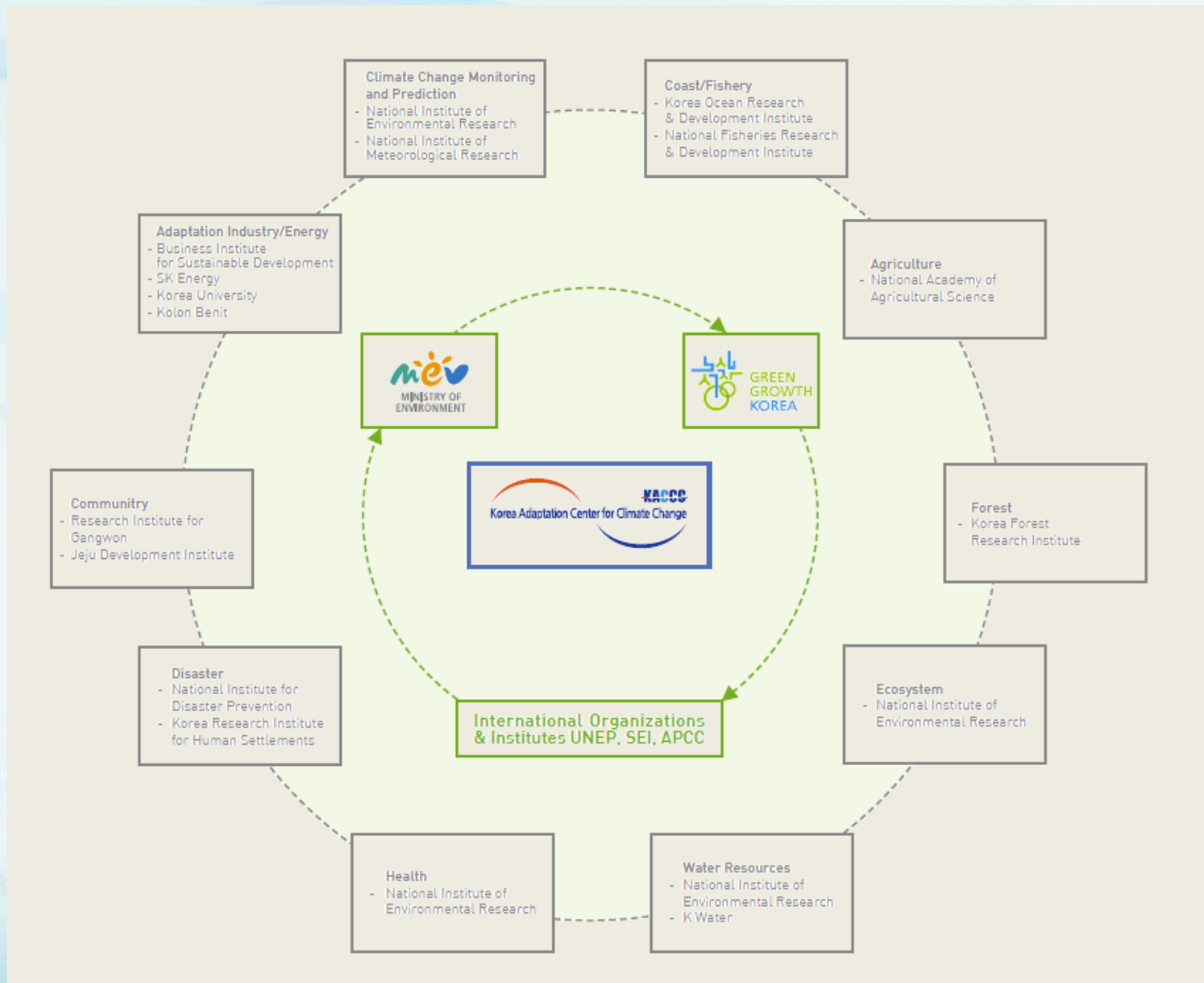
Organization of KACCC



| Director | Administration | PhD-level Researchers | Master-level Researchers | Bachelor-level Researchers | TOTAL |
|----------|----------------|-----------------------|--------------------------|----------------------------|-------|
| 1 | 5 | 10 | 29 | 3 | 47 |

IV. Korea Adaptation Center for Climate Change

Network of KACCC



IV. KACCC's Achievements during the Past 3 Years

Contribution to Climate Change Adaptation Policy and Practices

Building the Foundation for Adaptation

Support for Development of NCCAMP(2010)

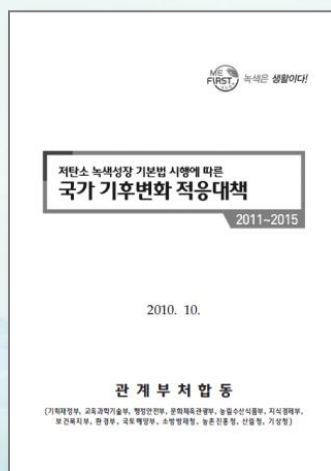
- Facilitate experts' meetings
- Draft NCCAMP(2011~2015)

Support for PR of NCCAMP(2010)

- Publish brochures of NCCAMP in Korean and English

Support for Revision of NCCAMP(2012)

- Facilitate experts' meetings
- Draft the revision draft of NCCAMP



IV. KACCC's Achievements during the Past 3 Years



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Korea Adaptation Center for Climate Change

Contribution to Climate Change Adaptation Policy and Practices

Support for Adaptation Policy Implementation

Support for Ministry Implementation Plans (2010)

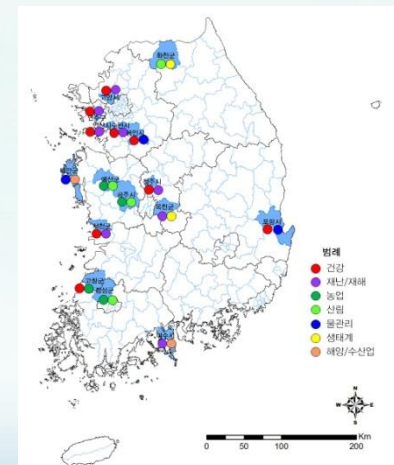
- Support for ministerial policy making process
- Check implementation progress

Support for Province & City Implementation Plans (2011–2012)

- Develop a manual for local adaptation planning
- Provide the consulting service

Support for Community Implementation Plans (2012–)

- Conduct vulnerability assessments and support adaptation planning for 16 communities



IV. KACCC's Achievements during the Past 3 Years

Contribution to Climate Change Adaptation Policy and Practices

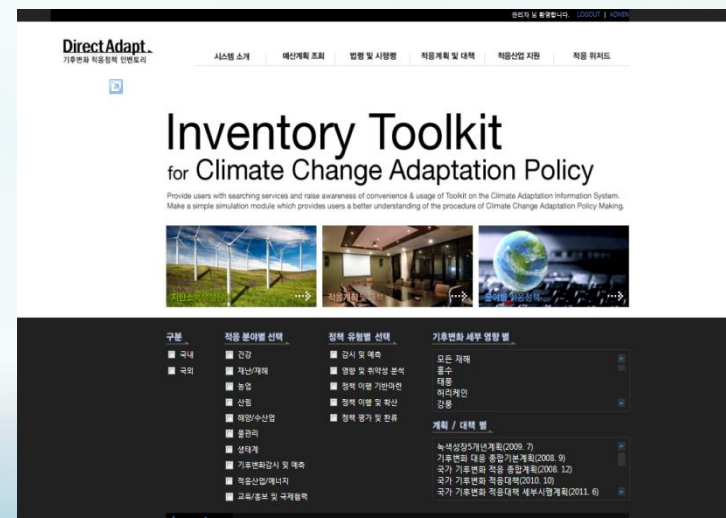
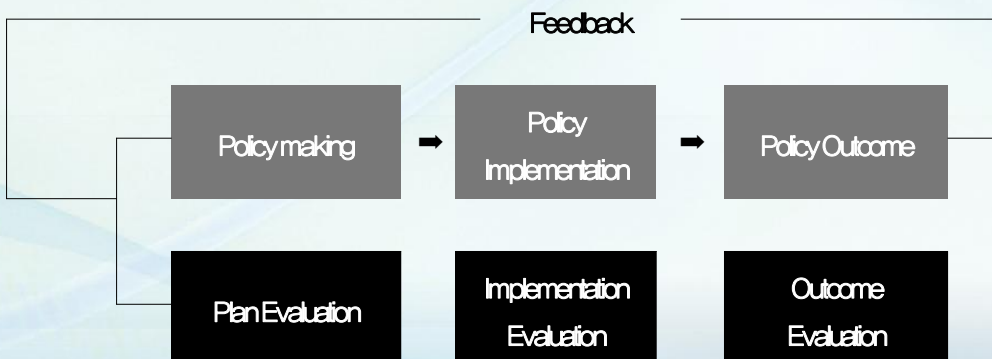
Policy Management and Adaptation Mainstreaming

Adaptation Policy Management and Evaluation (2010–2012)

- Establish the climate change adaptation policy inventory
- Develop the adaptation evaluation system

Development of Adaptation Tools (2010–2012)

- Develop the web-based adaptation policy search tools
- Develop the adaptation wizard service



IV. KACCC's Achievements during the Past 3 Years

Information Dissemination & Public Awareness Raising on Adaptation

Public Awareness Raising on Adaptation

Climate Change Adaptation Newsletter (2009–2012)

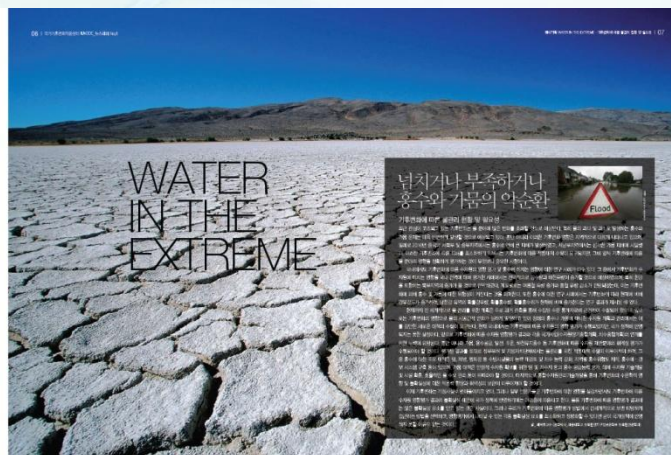
- Issue the monthly newsletter on various adaptation issues

Various PR Activities for Adaptation (2009–2012)

- Produce various PR materials on adaptation including media clips, posters, brochures, etc

Climate Change Adaptation Supporters (2011–2012)

- Operate the Adaptation Supporters Team and provide lectures for elementary school students on adaptation



IV. KACCC's Achievements during the Past 3 Years

Information Dissemination & Public Awareness Raising on Adaptation

Information Dissemination on Adaptation

KACCC Website & Adaptation Portal (2009–2011)

- Develop and operate the KACCC Website and Adaptation Portal



Climate Change Adaptation Portal
(For General Public)

Adaptation Information Delivery System (2010–2012)

- Develop and operate the Climate Change Adaptation Information Delivery System



Climate Change Adaptation Information Delivery
System (For Experts)

IV. KACCC's Achievements during the Past 3 Years

Establishment of National & International Adaptation Networks

National Adaptation Network

Adaptation Expert Forum (2010–2012)

- Hold the Adaptation Expert Forums on various adaptation sectors



Training Program for Local Government Officials (2010–2012)

- Provide the training programs on adaptation for local and community level government officials



Building Partnership with Adaptation Stakeholders (2009–2012)

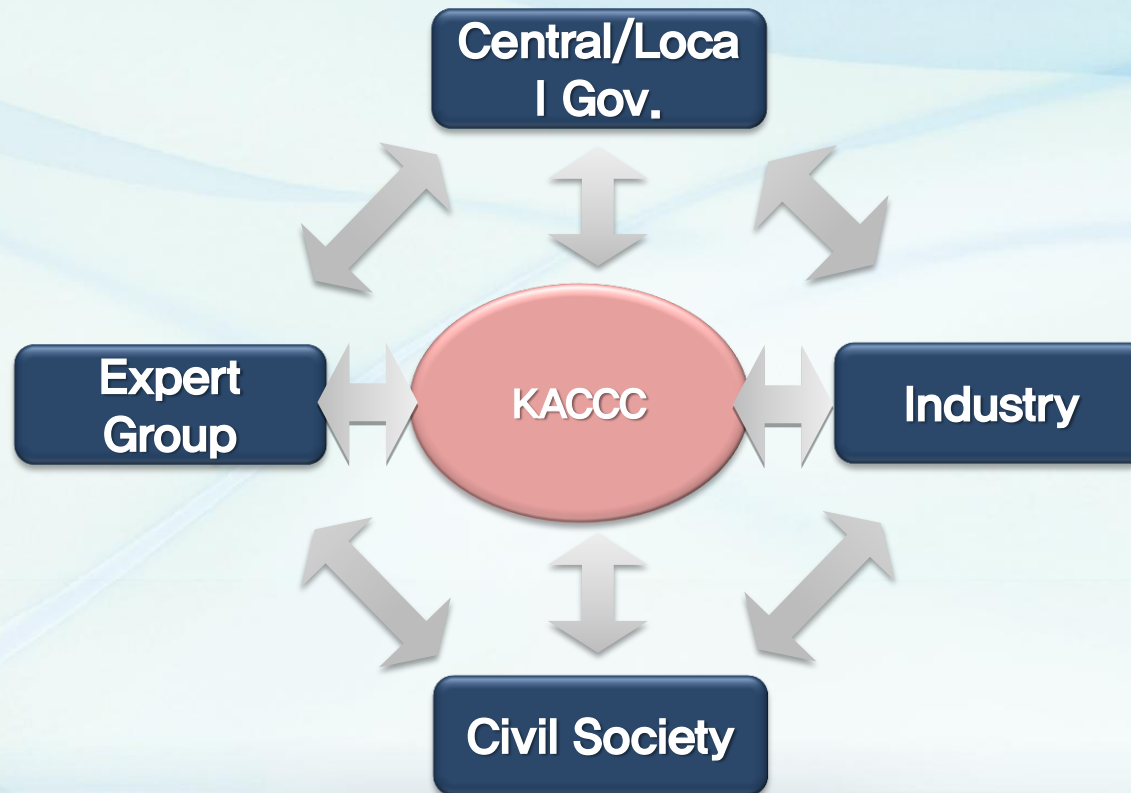
- Hold forums on new adaptation business opportunities
- Conclude MOUs with related orgs
- Hold the workshop for opinion leaders



IV. KACCC's Achievements during the Past 3 Years

Establishment of National & International Adaptation Networks

National Adaptation Network



IV. KACCC's Achievements during the Past 3 Years

Establishment of National & International Adaptation Networks

International Adaptation Network

Support for Government Delegations
at International Discussions
(2009–2012)

- Send delegations to international discussions such as IPCC, UNFCCC, APAN

Building Partnership with IGOs and
Other Adaptation Institutions
(2009–2012)

- Participate major adaptation-related international events
- Promote cooperation with IGOs and other adaptation institutions

Sharing Adaptation Knowledge with
International Partners
(2009–2012)

- Hold annual International Symposiums on Adaptation
- Provide developing countries with adaptation training courses



IV. KACCC's Achievements during the Past 3 Years

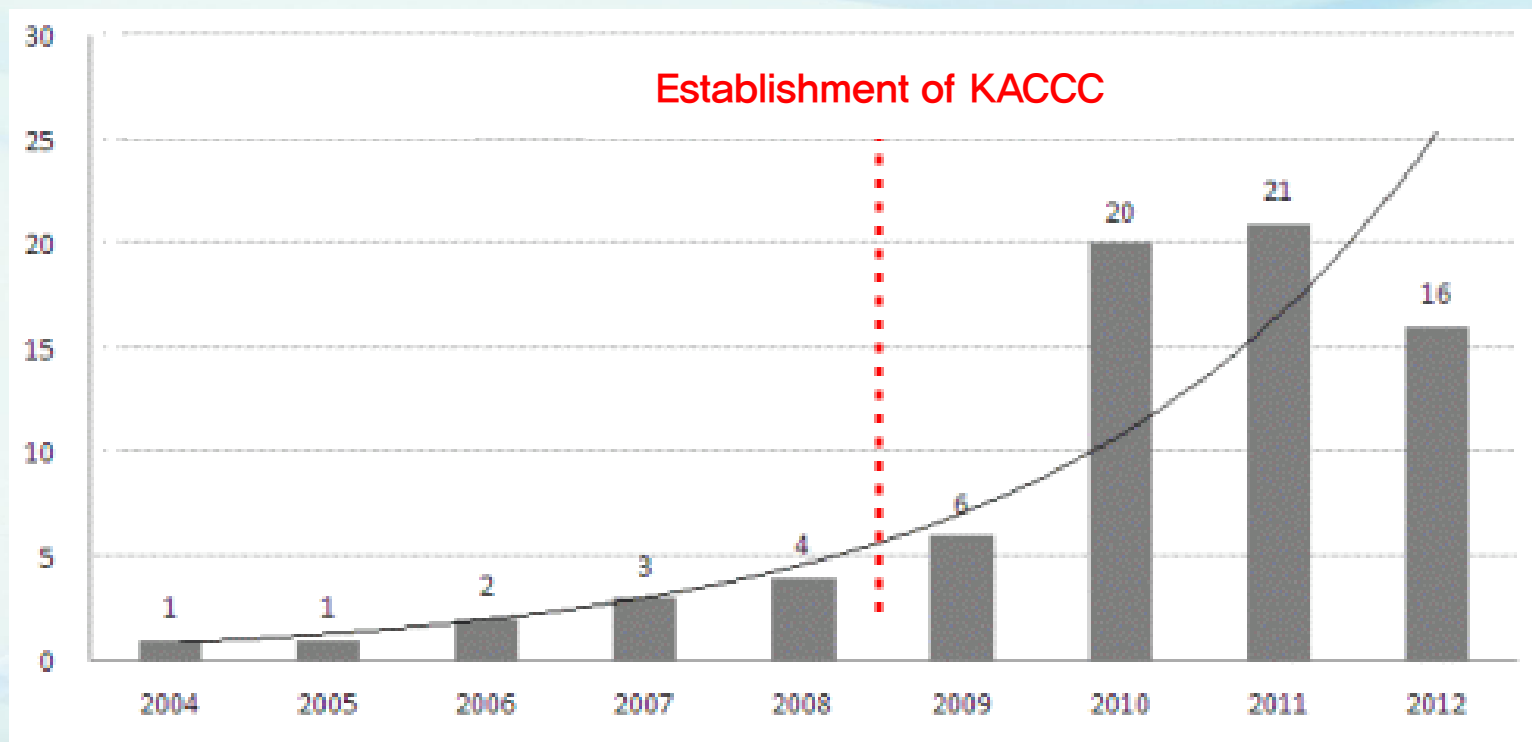


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Researches for Adaptation Policy and Practices

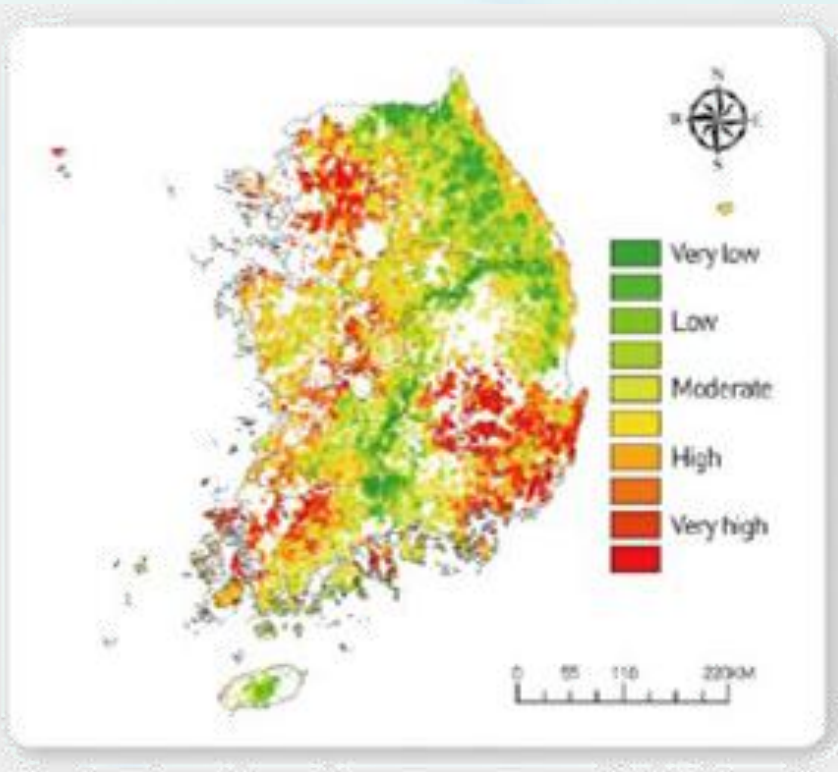
63 researches on climate change adaptation have been conducted during the past 3 years.



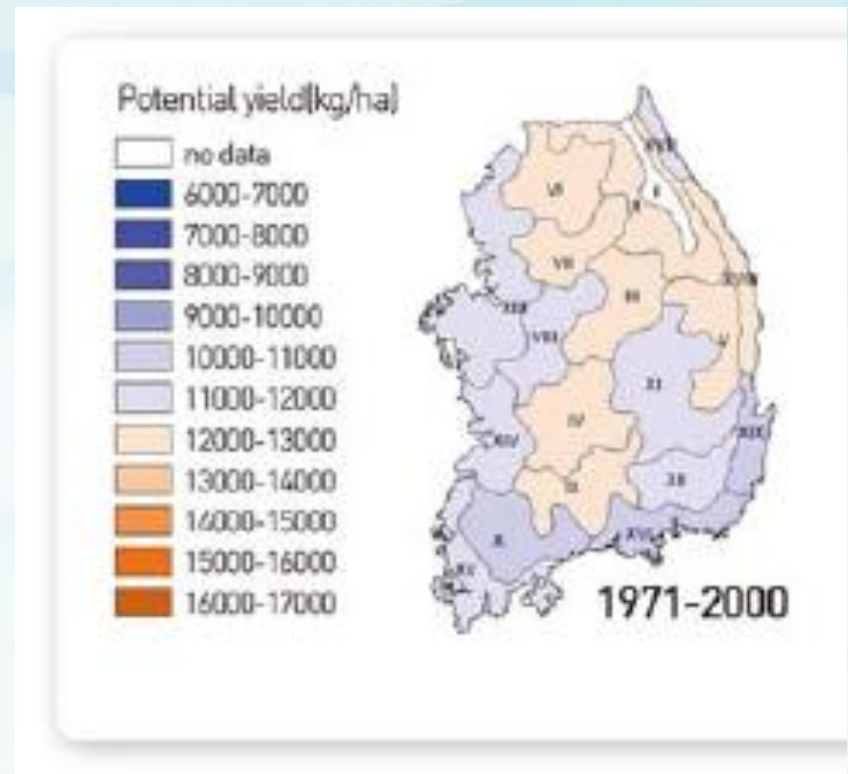
IV. KACCC's Achievements during the Past 3 Years

Researches for Adaptation Policy and Practices

Example: Economics of Climate Change in Korea



**Vulnerabilities to Climate Change
for Forest Disasters**



**Projected of Yield Change in Rice
due to Climate Change**



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Thank you for your attention!

