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Local Adaptation to Climate Change in Korea

Building Adaptation Capacity of Local Authorities in Korea

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I. Introduction

1. Backgrounds

- There are definite evidence of climate change and its impacts in every related sector in Korea
 - Temperature increase of 6 major cities are 1.7°C in 100yr
 - Annual precipitation of 6 major cities are 19% increase in 100yr
 - Rainfall intensity is doubled than 1970s
 - Sea level rise about 8cm in the past 43yr
- Estimates on the impact costs of climate change is **about 2.7 trillions KRW** in 2100yr (MOE, 2011) (1US dollar=1,150 KRW)
- **In 2010**, Korea established the “**National Adaptation Strategy and Framework Act on Low Carbon, Green Growth**” and started to cooperate and communicate with local governments in adaption
- **In 2011**, **local governments started** establish their own **adaptation plan** and now they are **in progress**

I. Introduction

2. Objectives of LAP

Definition of Local Adaptation Plan (LAP) is

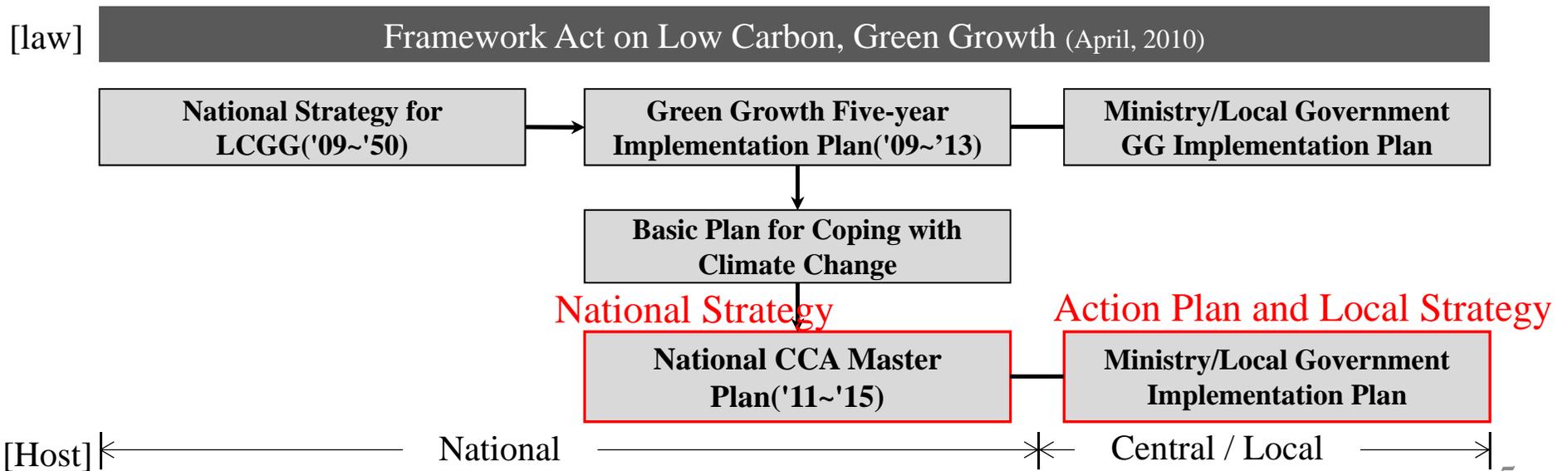
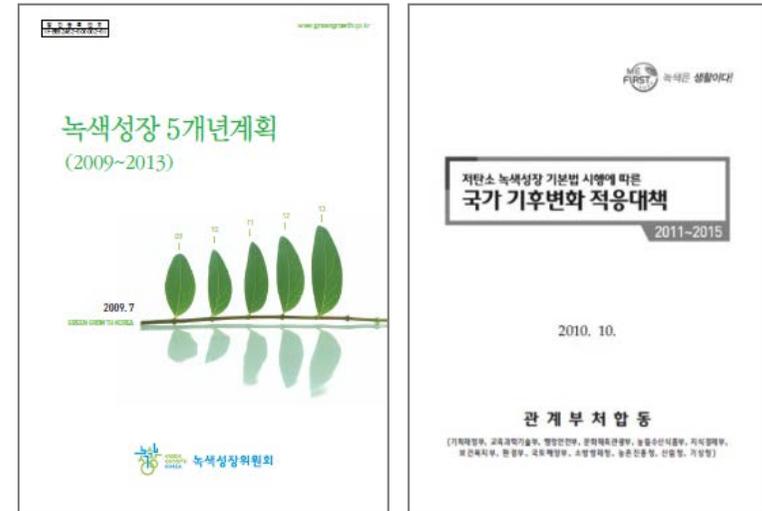
A practical and proactive plan in order to help local governments improve their resiliency to climate change impact

- **Objectives of LAP is....**
 - ✓ **Strategies for adapting in** changing climate for local governments with considering **their own situation**
 - ✓ Actions for **practical implementation**
 - ✓ **Chains for linking national adaptation** strategies with local level
 - ✓ Process for **building adaptation capacity**
 - ✓ Measures for **developing adaptation awareness** and **involving various stakeholders**

II. Framework for CCA in Korea

1. Adaptation Policy

- “Framework Act on Low Carbon, Green Growth” and enforcement ordinance enters into effect on April 14, 2010
- Plans that directly related to CCA are Green Growth Five-year Action Plan, Basic Plan for Coping with Climate Change, National Climate CCA Master Plan



Climate Change Adaptation Policy Framework in Korea (KEI, 2010)

II. Framework for CCA in Korea

2. Facilitating factors for LAP

- **Introduce Top-down Approach** to cope with Climate Change
 - Korea composed a **National government adaptation committee(NAS)** with 13 ministries to implement the National Adaptation Strategy
 - **Ministry of Environment(MOE)** is in charge of the NAS and supporting local governments
- **Build up Ground for Adaptation** : Policy and Budget
 - In August, 2010, Korea has established the “**National Climate Change Adaptation Master Plan(NCCAMP)**” by “**Framework Act on Low Carbon, Green Growth**” and set up the committee to implement the NCCAMP successfully
 - In 2011, MOE allocated about 4billion(US\$) in supporting local government adaptation plan
- **Establish a National Task Force Center** for Adaptation
 - MOE launched a national task force for climate change adaptation , **Korea Adaptation Center for Climate Change(KACCC)** in 1st **July 2009** at **KEI**
 - MOE and KACCC are working closely to support successful local adaptation plan

II. Framework for CCA in Korea *3. Preparing for LAP in national level*

Central government launched supporting programs for LAP with KACCC in 2010

- Systematic and various supporting programs that helps local governments to enhance their adaptation knowledge and build adaptation capacity
- Supporting programs are divided into 3 categories and now is in 2nd phase

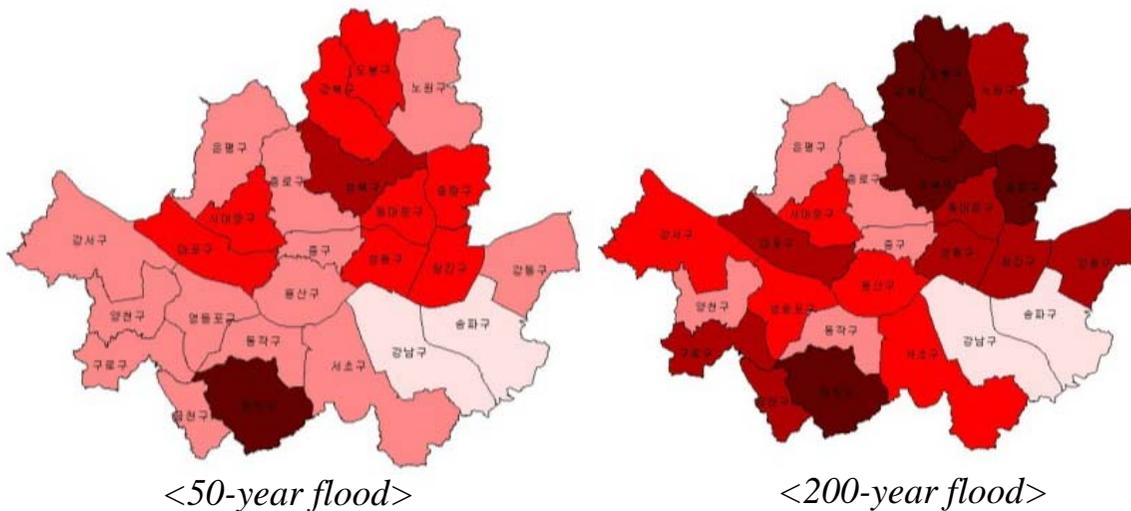
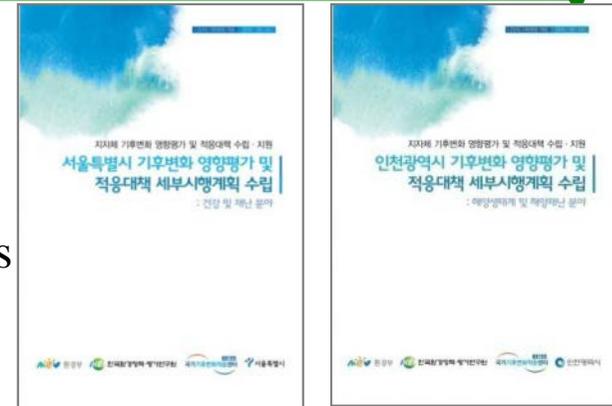
	Guiding & Consulting	Informing	Communicating
	To help local governments prepare for climate change by recommending easy-to understand preparedness based on resources, tools, examples and communication		
Phase 1 (2010)	<ul style="list-style-type: none"> • LAP Guideline • LAP Pilot studies 	<ul style="list-style-type: none"> • Inventory of adaptation policy options (national) 	<ul style="list-style-type: none"> • Workshops, seminars • Online community : website
Phase 2 (2011)	<ul style="list-style-type: none"> • LAP Consultation • Impact and risk assessment manual for adaptation 	<ul style="list-style-type: none"> • Climate change projection • Risk assessment • Updating inventory (local and other nations) 	<ul style="list-style-type: none"> • Workshops, seminars, expert forum • Online community : website

Supporting programs for LAP by National government

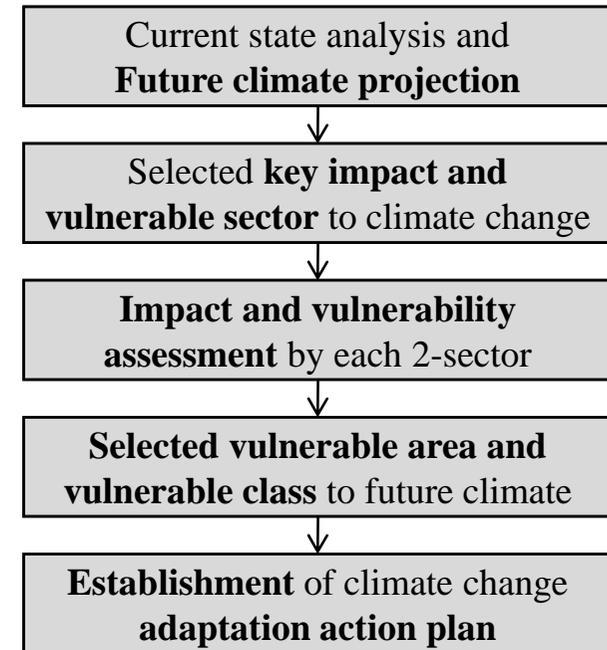
II. Framework for CCA in Korea 3. Preparing for LAP in national level

Two-pilot projects(2010), showing what is LAP

- Example of adaptation planning in local level
 - Seoul metropolitan city Adaptation Plan - Health and Hazards
 - Incheon metropolis – Coastal and Sea
- To develop a adaptation planning guideline for local governments



50-yrs & 200-yrs Flood Vulnerability Map in Seoul



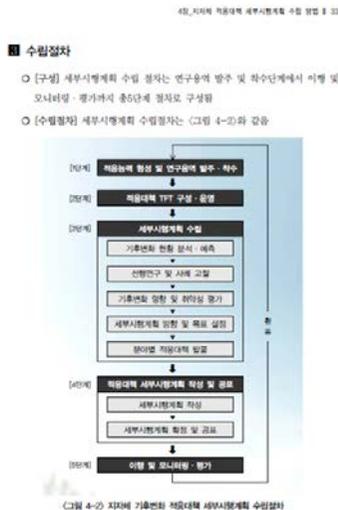
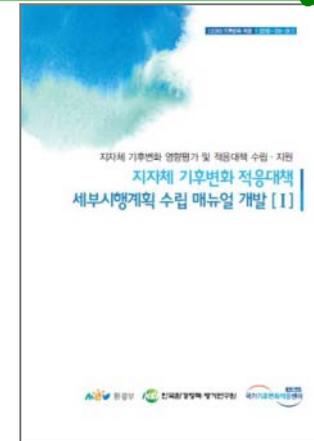
Process of Adaptation Planning 8

II. Framework for CCA in Korea

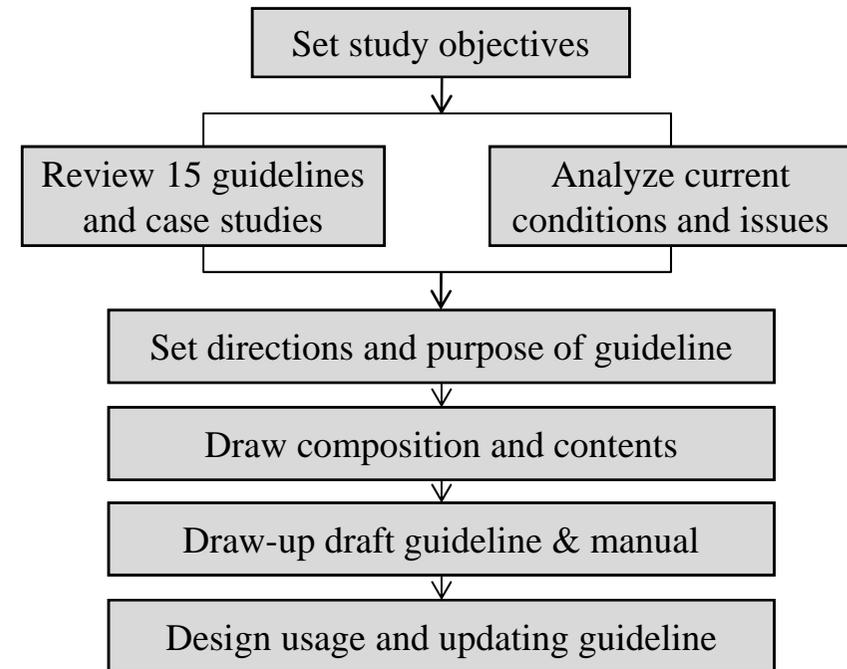
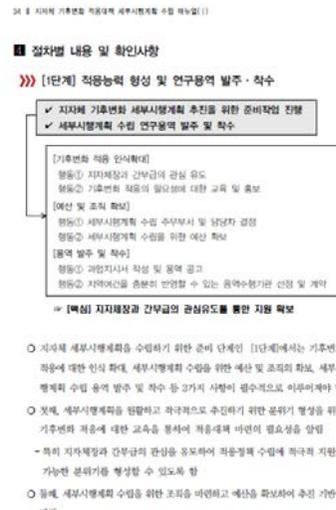
3. Preparing for LAP in national level

Guideline for developing LAP

- By updating 2009 guideline with experience of 2 pilot studies, local authorities can establish more realistic and efficient adaptation plan
- Guidebook begins with introduction(ch1), LAP related concepts and definitions (ch2&3), LAP process and methods(ch4), each sector planning methods(ch5)



2010 LAP guideline



Developing LAP Guideline 2010

II. Framework for CCA in Korea 3. Preparing for LAP in national level

Sharing adaptation knowledge and communicating with stakeholders

- Hold meetings, workshops, seminars to share knowledge, know-how with experts, national/local governors and citizens
 - Share knowledge from who already experienced LAP
 - Find issues in preparing and planning LAP by communicating with local governments with national
- Bring out adaptation issues by publishing news letters



2011 WS for LAP

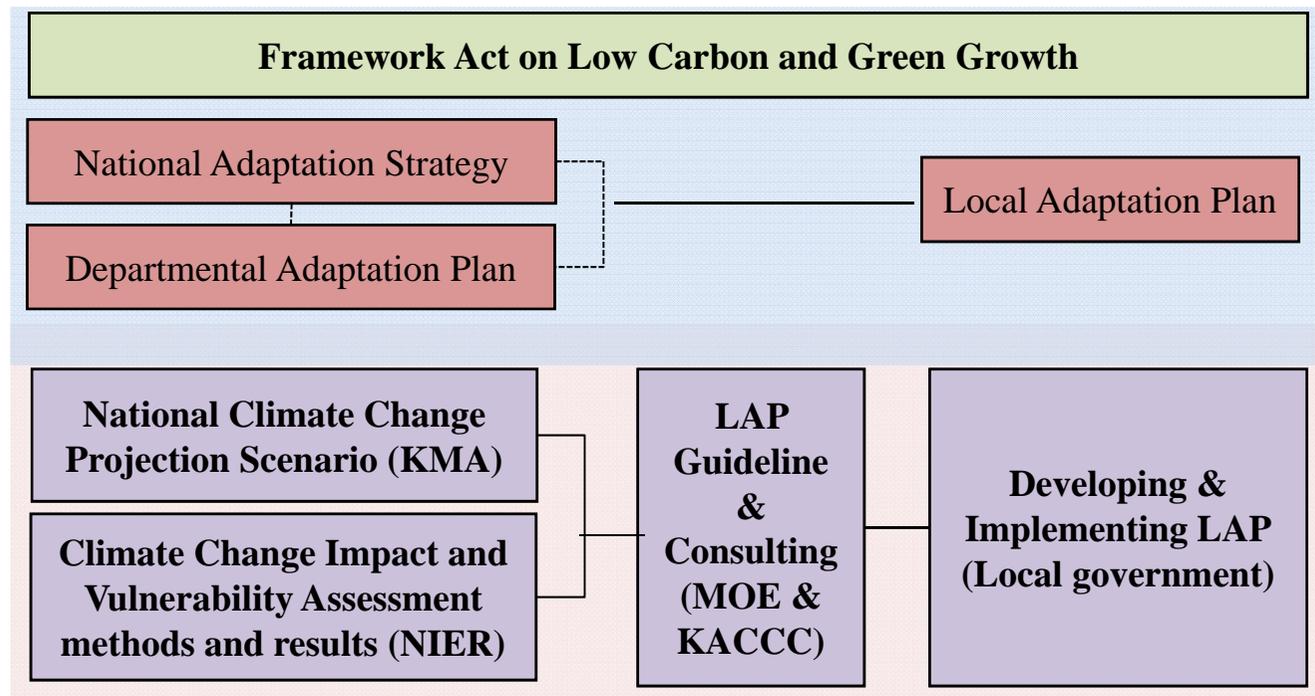
News letters for the publics

III. Developing Local Adaptation Plan

1. Overall approach

National government draw picture of how to manage LAP

- Local government promoted LAP with national government(MOE) and related organizations
- Korea Meteorological Administration(KMA), National Institute of Environmental Research(NIER), Korea Adaptation Center for Climate Change(KACCC)



LAP system in Korea and related organizations

III. Developing Local Adaptation Plan *2. Principles in developing LAP*

There are 5 principles in developing LAP

- **Integration of Policy**

- Adaptation is based on various sectors therefore locals should consider the linkage between related sectors
- Adaptation policy is not a new one so locals should firstly find-out what adaptation policy they have nowadays

- **Double-sidedness of Climate Change**

- Impacts of climate change has both negative and positive sides

- **Participation of Stakeholders**

- Adaptation is related to various sectors stakeholders therefore communicating with stakeholders while developing LAP directly connected to successful implementation of LAP

- **Focusing on Local Issues**

- **Feedback mechanism of Adaptation Planning**

- Locals should aware uncertainty of climate change therefore monitoring and assessment must be take account into adaptation plan

LAP Guidebook suggests 5 step LAP development procedure and operates feedback system that lowers uncertainty of climate change

- Step 1 : Prepare the Ground and Order Research Project
 - Attract mayors interest
 - Find the best institute who knows the regional issues well
- Step 2 : Build Task Force Team for LAP
 - Consist of officials and stakeholders act as an advisory group
- Step 3 : Develop LAP
 - Analyze climate change from past to present and Predict future climate change
 - Review previous studies and gather related information
 - Assess impact and vulnerability of the region
 - Set the strategic direction and goals
 - Plan adaptation options
- Step 4 : Publish and Notify LAP
 - Set draft LAP
 - Public hearing and communicating with stakeholders
- Step 5 : Implement LAP with Monitoring and Assessment

LAP diagnosis current status and predict future situation and contains appropriate solutions for locals to adapt in changing climate

- Identify planning areas relevant to climate change
- Scientific overview of climate change and its impacts
- Survey recognition and overall conditions for adaptation
- Scope the climate change impacts to local major sectors
- A climate change vulnerability assessment
- Overall strategic direction and sector goals
- Potential adaptation actions and prioritize actions by sector

IV. Consulting Programs for LAP *1. Objectives and principles*

KACCC launched advisory group to support developing LAP and promote local authorities to build their adaptation capacity

- While advisory groups progress consulting they should keep in mind that...
 - ✓ Consider LAP purpose
 - ✓ Consider local's own situation
 - ✓ Consider subjects are professional or not, and accurate or not
 - ✓ Consider the connectivity of each adaptation sector
 - ✓ Consider the linkage between LAP with national adaptation strategy
 - ✓ Consider feasibility of LAP

IV. Consulting Programs for LAP 2. Organization

40 specialists in each 10 sector, a wide range of adaptation sector, are in advisory group

- Specialists in various adaptation sector are participated in LAP Advisory group
- Advisory group specialists are in academic, business area in each 10 sector
 - Sector divides into health, disaster, agriculture, forestry, marine and fisheries, water, ecology, climate, industry and energy, education and public relations, as same as national adaptation strategy sector specific
- Advisory group consults local authorities and planning organizations by
 - ✓ Holding teleconference, workshops, written paper and direct visiting
 - ✓ Cooperating with related internal, international, intergovernmental organizations and NGOs
 - ✓ Publishing guidelines and supply related information



Consulting steps are closely linked with LAP procedure

- Step 1 : Prepare the Ground
 - Organize advisory group and set-up objectives, direction, systems etc.
- Step 2 : Guiding overall adaptation planning procedure and methods
 - Related concepts and definitions
 - Overall LAP procedures and systems
- Step 3 : Carry out sector specific / step-by step advise
 - Climate analysis and prediction
 - Impact and vulnerability assessment
 - adaptation options
- Step 4 : Synthesize monitoring results and assess LAP
- Overall Step : Monitoring

V. Next Steps for Adapting in Changing Climate

- Local authorities are still in progress of developing their own adaptation plan
 - Vulnerability assessment results provided in September, 2011
 - Every 16 locals host interim report in October and November
- 1st adaptation plan in local level will be finished in February, 2012 and after this local governments are going to start implementing adaption programs
- Consultation on developing LAP would be changed into supporting local authorities to implement their adaptation programs
- KACCC supporting program is in phase 3 when 2012
 - Update guidebook with using LAP results
 - Operate online information sharing system(adaptation policy inventory tool kit)
 - Monitoring progress of LAP and assessing LAP

Thank you for your attention