

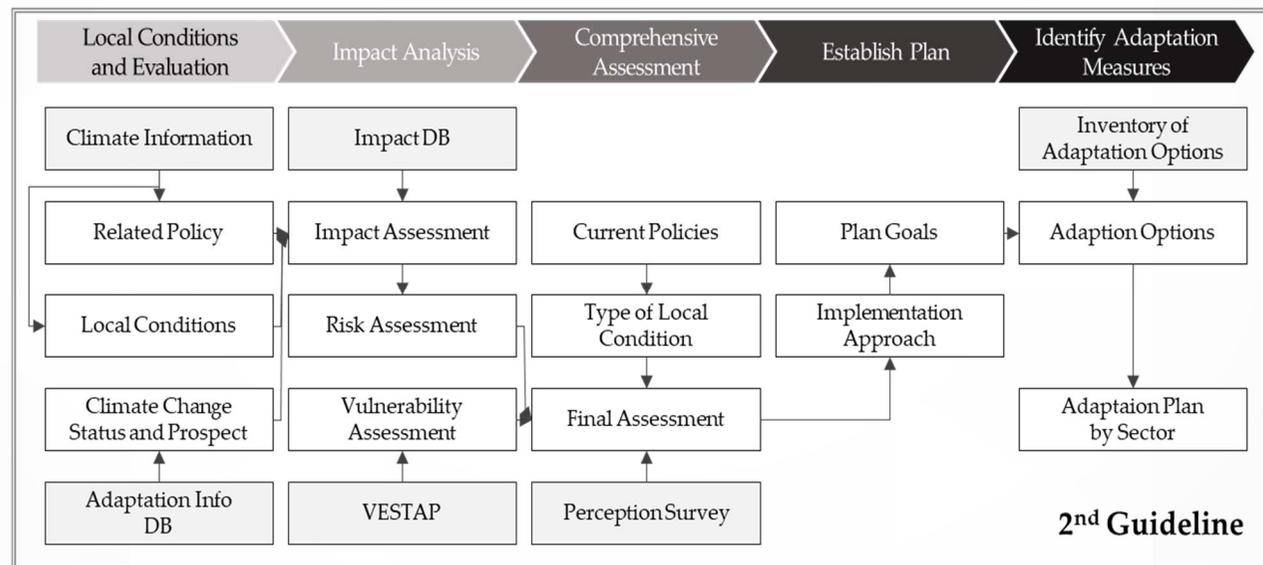
# Supporting customized decision making in prioritizing climate adaptation options for local governments in Korea

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## ▶ Korea's Adaptation Planning

- In accordance with Article 48 of the Framework Act on Low Carbon and Green Growth and Article 38 of the Enforcement Decree of the Act, Korea is in its 3<sup>rd</sup> round of establishing national and provincial level 'Climate Adaptation Implementation Plan'
- The overall execution abilities of establishing adaptation plans have been advanced with formalized planning procedure and increased support tools



**Plan Components included in Korea's 2nd Local Adaptation Plan Guidelines**

- Feedback systems for adaptation policy assessment are being developed including annual implementation assessments of provincial and national level adaptation plans

## ➤ Korea's Adaptation Planning

- Local governments express difficulty in providing sufficient adaptation measures due to:
  - 1) poor implementation evaluation system
  - 2) lack of customized local data
  - 3) weak legal and financial support
  - 4) lack in community for information sharing and cooperation between cities/provinces
  - 5) inefficiency in managing the plan due to the similarity with other plans
- Despite an ambitious and holistic mandate, there is still a lack in support for planning, implementation and M&E
- For example, the indeterminate use of different analysis methods led to a disconnect in selecting adaptation options for implementation

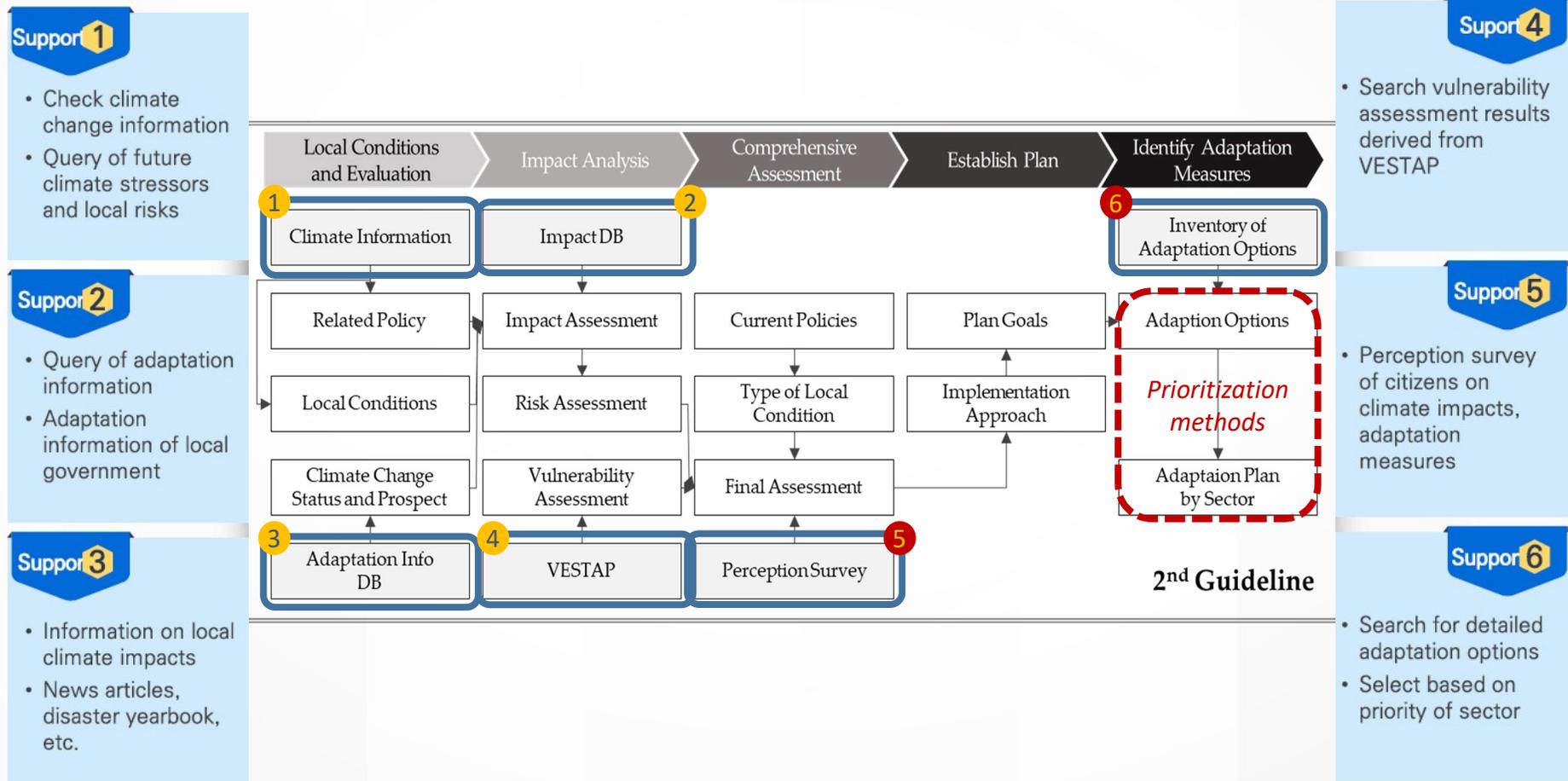
Table 10.1 Comprehensive Analysis Method for Selecting Priority by Each Lower Level Local Governments (Hyun, Jung Hee, et al. 2019).

Local Government	Vulnerability Assessment	Citizen Perception Survey	Civil Servant Perception Survey	Past Impact Assessment	Expert's Assessment	Other
Gwanak-gu (Seoul)	80%		20%			
Dalseong-gun (Daegu)	50%	30%	20%			
Namdong-gu (Incheon)	√*	√	√	√		
Dong-gu (Daegu)	√				√	√
Seo-gu (Daejeon)	√			√	√	√
Dong-gu (Ulsan)	√	√	√	√	√	
Pocheon-si (Gyeonggi-do)	20%	30%	30%	20%		
Taebaek-si (Gangwon-do)	√	√	√	√	√	√
Hwacheon-gun (Gangwon-do)	√	√	√	√	√	
Cheongju-si (Chungcheongbuk-do)	√	√	√	√		
Goesan-gun (Chungcheongbuk-do)	20%	25%	25%	10%		20%
Asan-si (Chungcheongnam-do)	√	√	√			
Yesan-gun (Chungcheongnam-do)	20%	30%	30%	20%		
Gwangyang-si (Jeollabuk-do)	20%	30%	30%	20%		
Hwasun-gun (Jeollanam-do)	√	√	√	√		
Pohang-si (Gyeongsangbuk-do)	√	√	√	√	√	√
Yeongyang-gun (Gyeongsangbuk-do)	√	√			√	√
Gimhae-si (Gyeongsangnam-do)	√	√	√			
Sancheong-gun (Gyeongsangnam-do)	√			√		

\* If there is a number, it is the weighted value of evaluation item. √ was used as an evaluation item but the weighted value was not given.

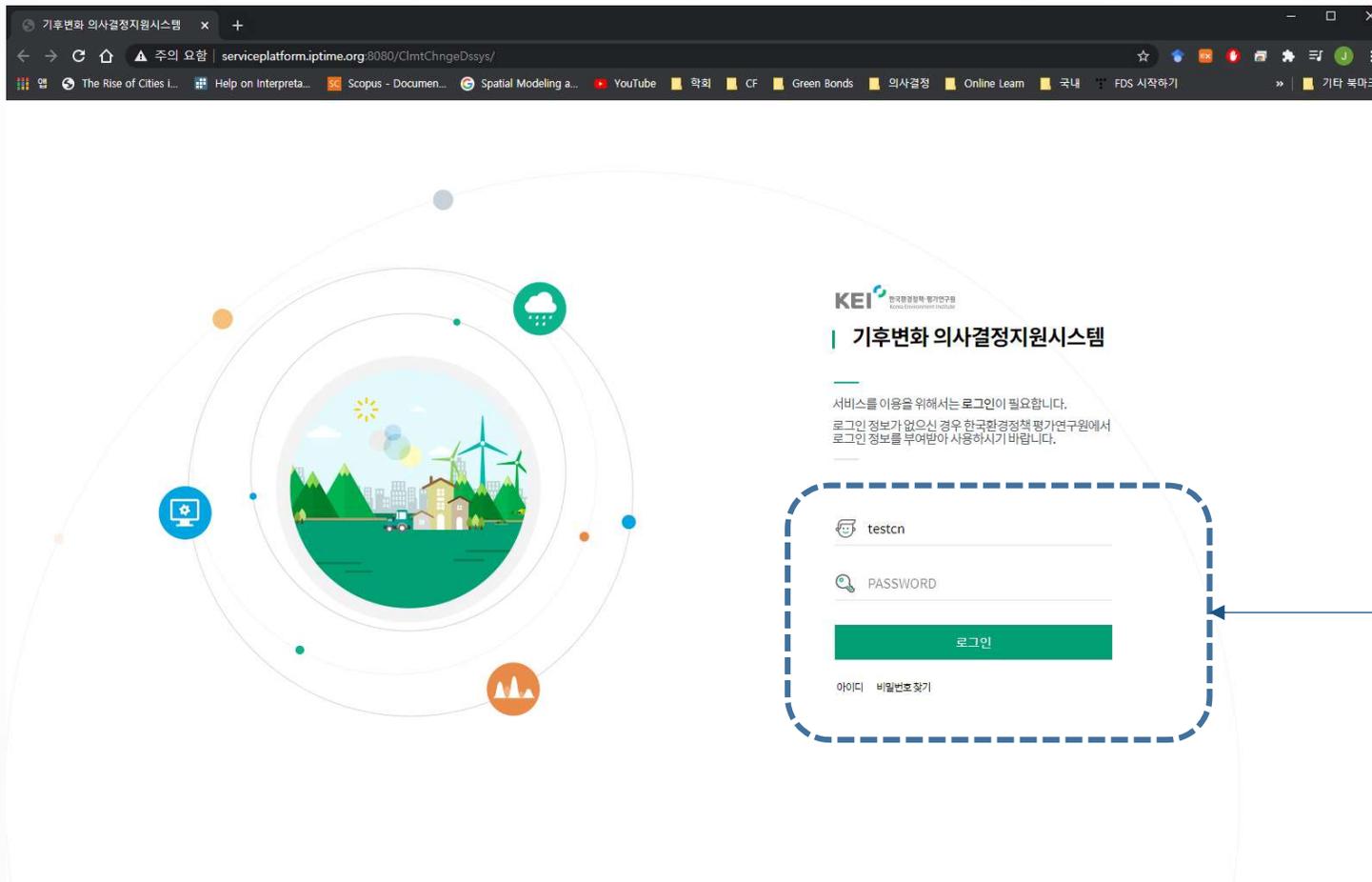
# Decision Support System for Adaptation Planning

- In the final year of a 3 year project on "Integrated Decision Making Support Tool for Selecting Climate Change Adaptation Policies" funded by the Ministry of Environment we have consolidated data sources and assessment tools and developed our own tools



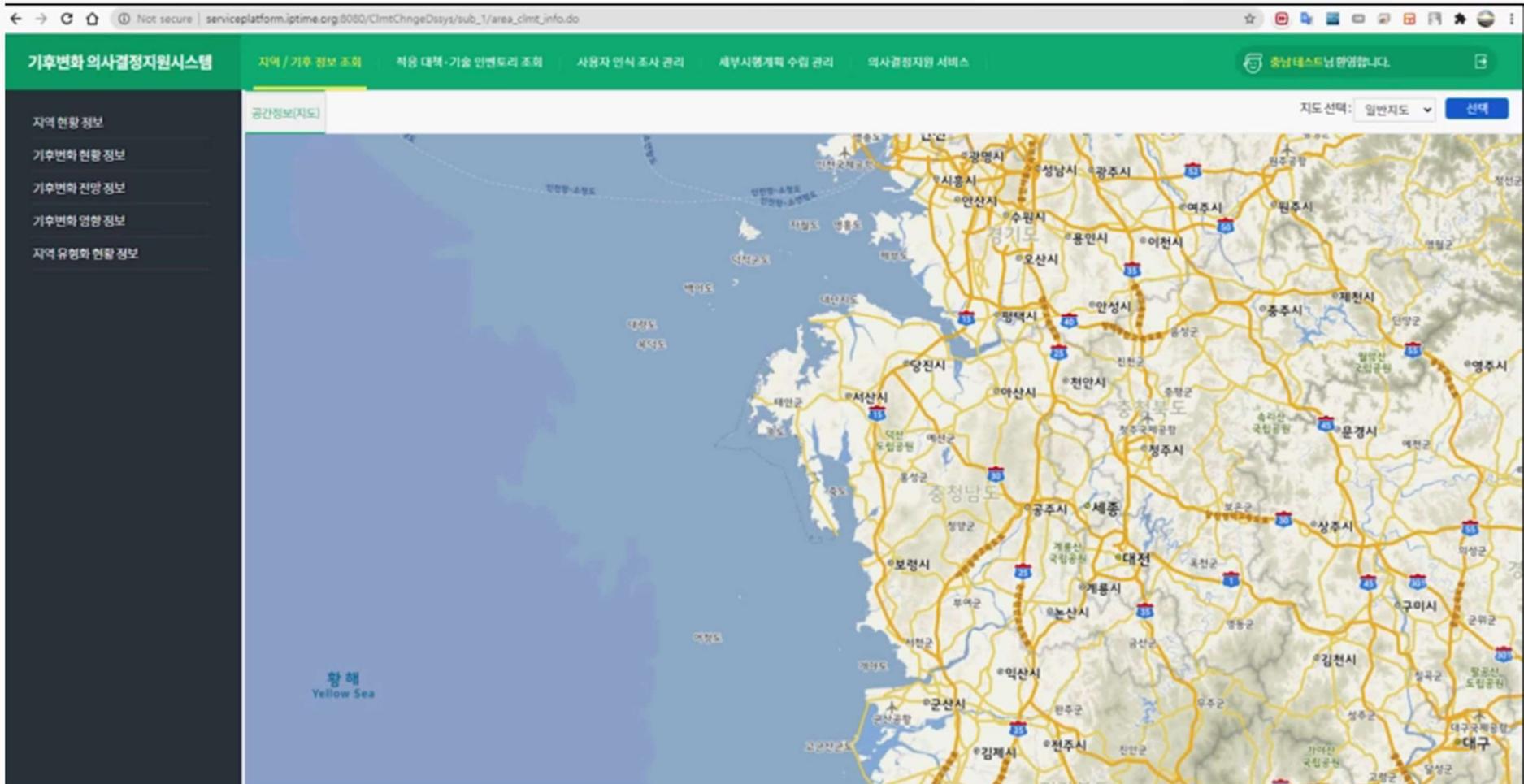
## 1. Online Platform Homepage

- Target audience: local government public officials, commissioned researchers, etc.
- Future management and dissemination: Korea Adaptation Center for Climate Change (KACCC)



Log-in by Users  
(planners) and  
manager (KACCC)

## 2. Local Information & Climate DB



# 3. Selecting and Prioritizing Adaptation Options – Tier 1, 2

## ❖ Method of Prioritizing Adaptation Options using MCDA

The screenshot shows a web portal titled "기후변화 의사결정지원시스템" (Climate Change Decision Support System). The main content area is titled "의사결정지원 소개" (Introduction to Decision Support). The text describes the process of selecting and prioritizing adaptation options using MCDA, involving data collection, analysis, and evaluation of various options against specific criteria. It also mentions the importance of considering local conditions and the role of the support system in providing decision-making tools.

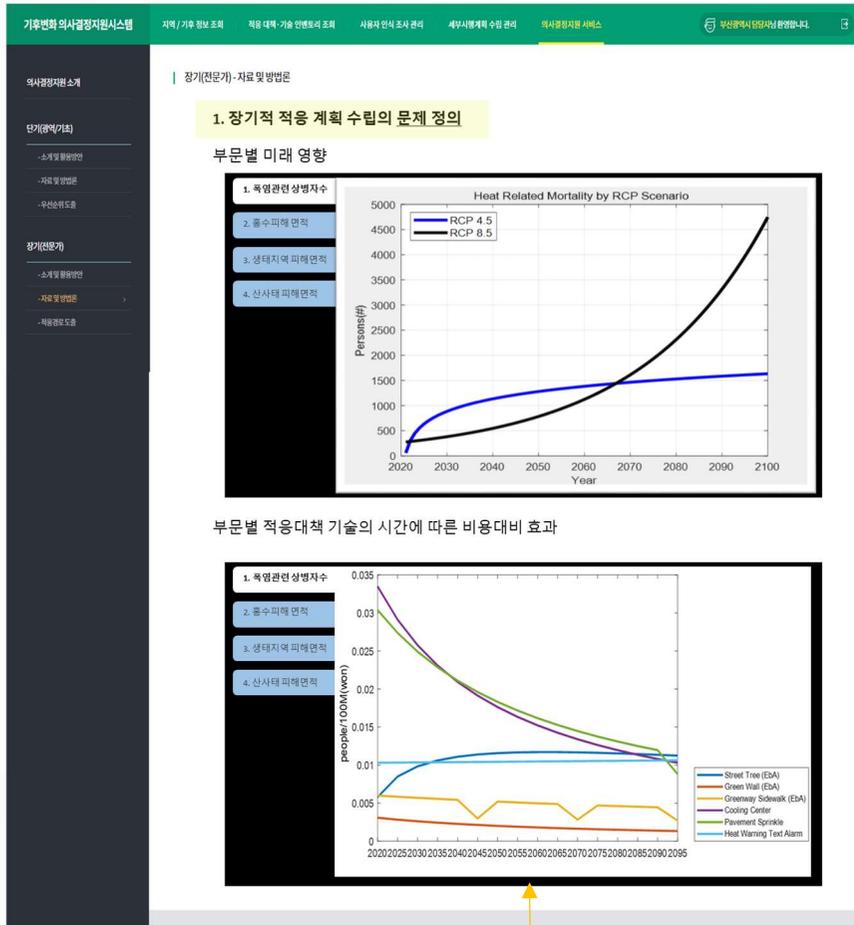
The flowchart illustrates the process of decision support, starting with "1차 계획 평가" (1st Plan Evaluation) and "지역현황 및 적용여건 분석" (Local Situation and Application Condition Analysis). The analysis leads to "관련정책 동향" (Policy Trends), "지역현황 특성" (Local Situation Characteristics), and "기후변화현황 전망" (Climate Change Outlook). These factors influence "기후변화 영향분석" (Climate Change Impact Analysis) and "기후변화 취약성 및 리스크 평가" (Climate Change Vulnerability and Risk Assessment). The final steps are "핵심추진정책(사업)" (Key Policy/Project) and "인식조사 (주요 취약계층)" (Survey of Key Vulnerable Groups), both leading to "종합분석 및 정책 진단" (Comprehensive Analysis and Policy Diagnosis).

# 4. Selecting and Prioritizing Adaptation Options – Tier 3

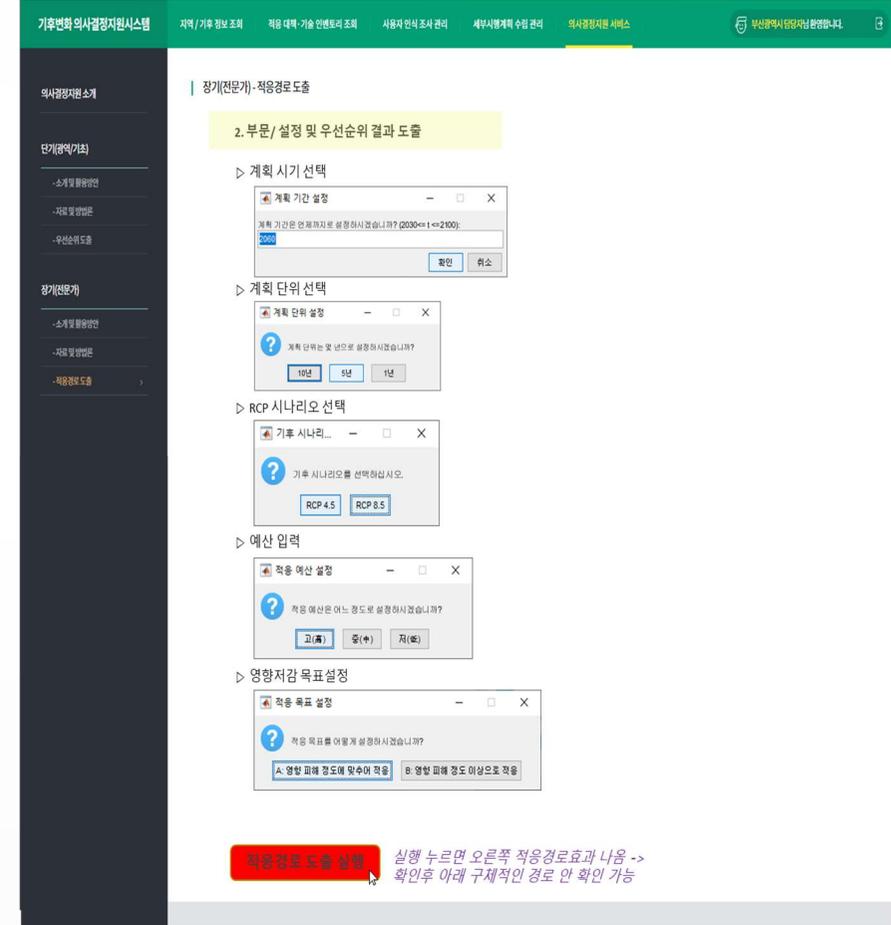
❖ Long-term adaptation planning using a pathways approach

- Future Impacts and Selected Adaptation options of 3 sectors under RCP 4.5/8.5 for Seoul and Busan

- Input of decision maker's preference



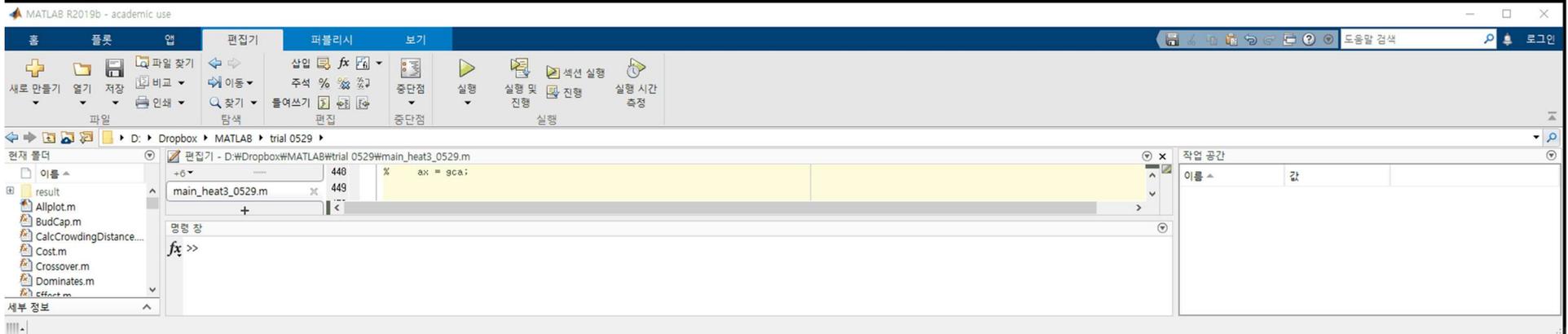
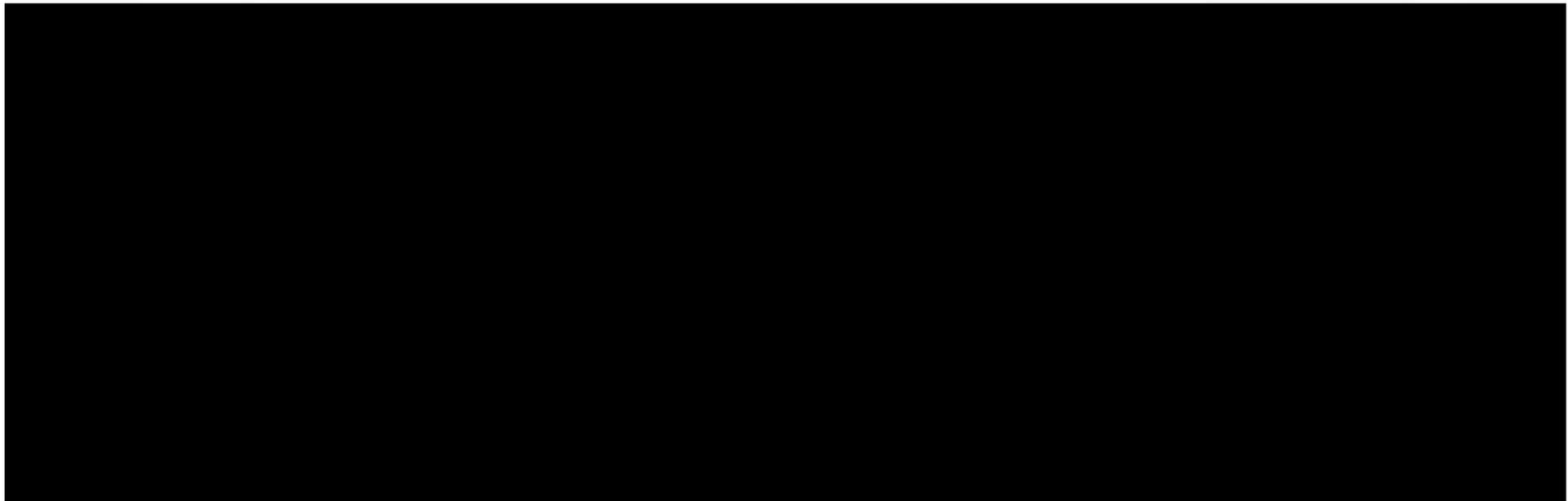
BCR of selected options



## 4. Selecting and Prioritizing Adaptation Options – Tier 3

❖ Long-term adaptation planning using a pathways approach

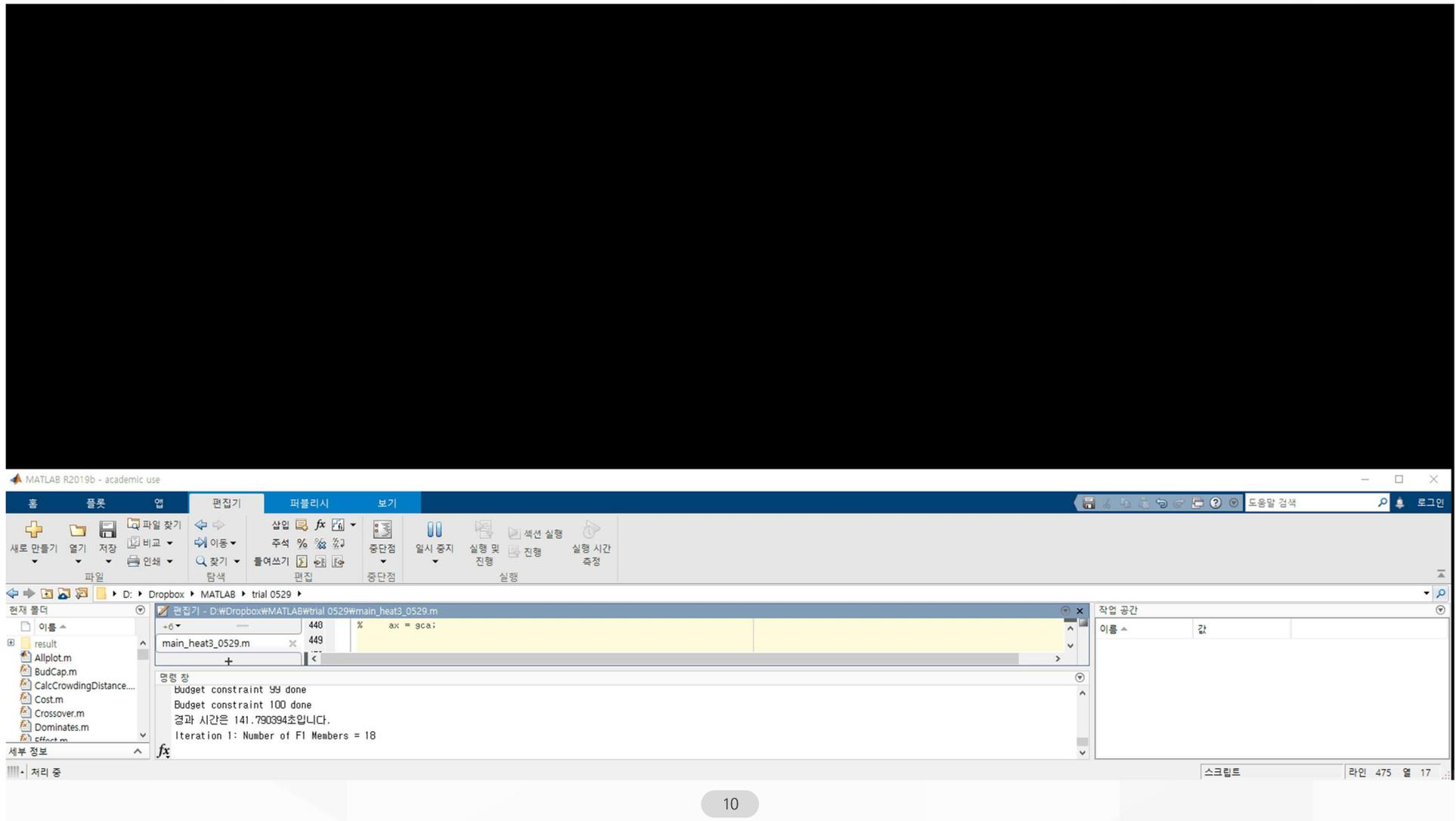
- Input of decision-maker's preference (RCP Scenario, Planning unit, Planning length, Budget level, etc.)



## 4. Selecting and Prioritizing Adaptation Options – Tier 3

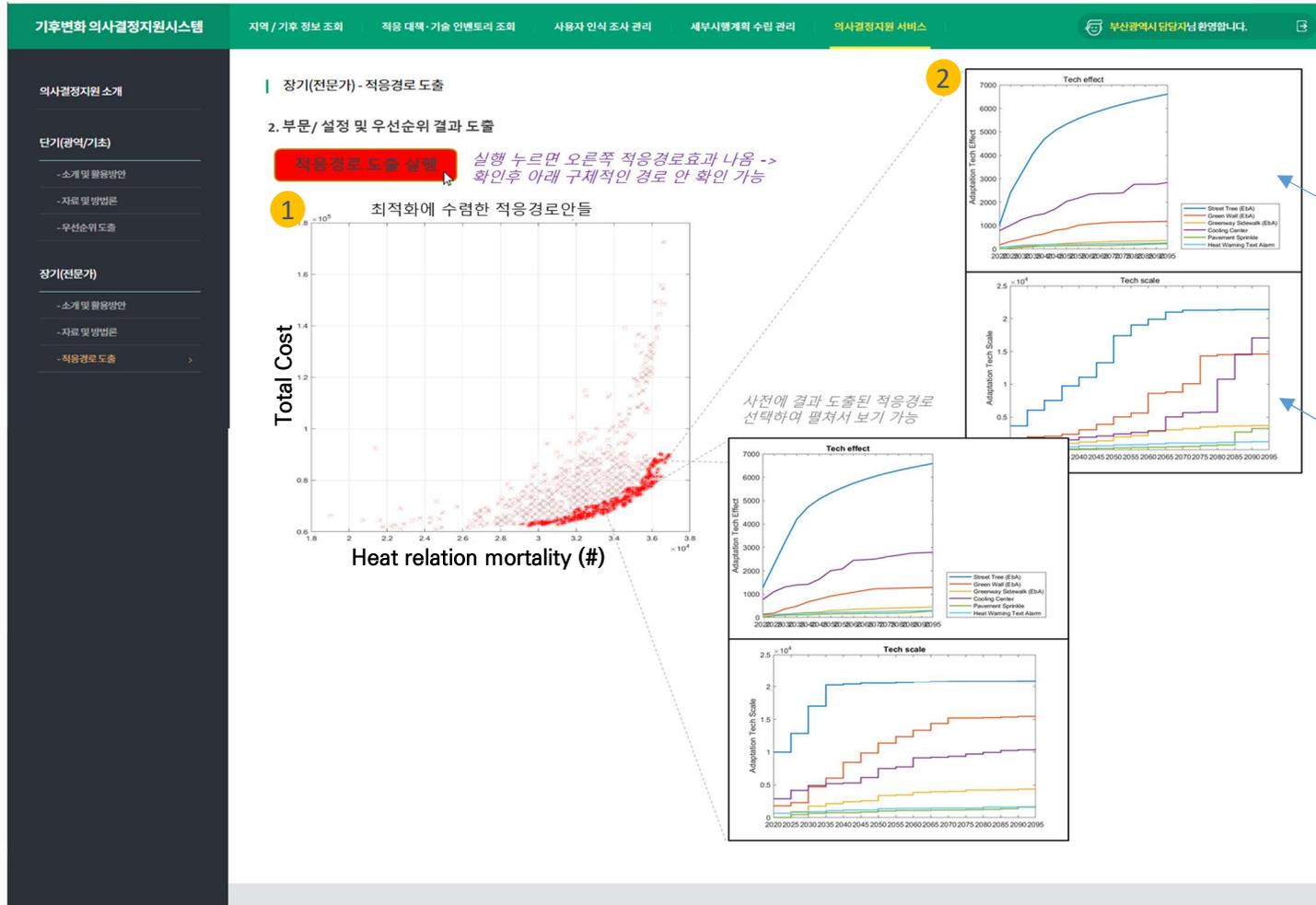
❖ Long-term adaptation planning using a pathways approach

- Optimization Process



# 4. Selecting and Prioritizing Adaptation Options – Tier 3

❖ Long-term adaptation planning using a pathways approach



Impact reduction by each adaptation option

Implementation scale of adaptation options across time

## 5. Other decision support tools

The screenshot shows a web browser window with the URL `serviceplatform.iptime.org:8080/ClmtChngeDssys/sub_4/nation_clmt_chnge_adapt_ctrpln.do`. The page title is "기후변화 의사결정지원시스템". The navigation bar contains several menu items: "지역 / 기후 정보 조회", "적응 대책·기술 인벤토리 조회", "사용자 인식 조사 관리", "세부시행계획 수립 관리", and "의사결정지원 서비스". A yellow dashed box highlights the "적응 대책·기술 인벤토리 조회" and "세부시행계획 수립 관리" items. Blue arrows point from these items to three text boxes: "Adaptation Options Inventory Search", "Citizen's Perception Survey Template", and "'Adaptation Implementation Plan' Document Formatting & Editing".

- ❖ Tools currently still in development
- ❖ System manuals including guidelines for each support tools will also be published

## ➤ Feedback on the Adaptation DSS

- A series of forums are being planned for to gather feedback on the decision support system from future users (local officials and experts)
- Aim of the forums is to confirm the necessity of the decision support system
- Feedback on the Decision Support System so far:
  - "reliable climate information" and "standardized assessment tools" to establish climate change adaptation plans should be developed in parallel
  - An automated document creation and submission through the support system is attractive function
  - local government forums for networking with other local government officials can improve the use of the support system and enhance local adaptation planning

Thank you