Development of impact and adaptation assessment model to support adaptation decision-making

- Overview of project -

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Overview of project

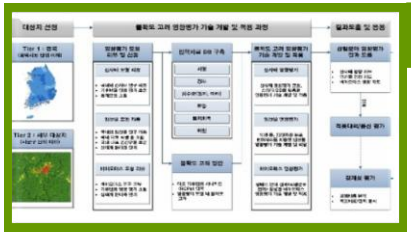
- Objectives:

(1) to assess the effectiveness and efficiency of adaptation measures by sector

(2) to support the national and local adaptation planning considering uncertainty of projection

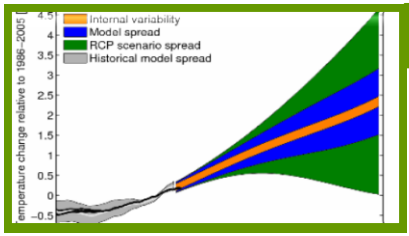
- Period & Budget: 2014.5 – 2017.4 (650 million won/year)
- Project Manager: D.K. LEE (SNU)
- Considerations
  - ✓ Target regions: National, provincial and county-level scale,
  - ✓ Target periods: 2030s, 2050s, 2100s
  - ✓ Target sectors: Forest, Health, Disaster, Agriculture, Ecosystem, Water Resources

Overview of project: Characteristics



1. Scientific approach to assess sector's impacts

- Bottom-up approach to consider local characteristics of adaptation
- Quantitative assessment of effectiveness of adaptation options



2. Probabilistic approach to assess uncertainty of future projection

- Assessing uncertainties from the impact and cost estimation
- Using simplified impact model representing the results of complicated models

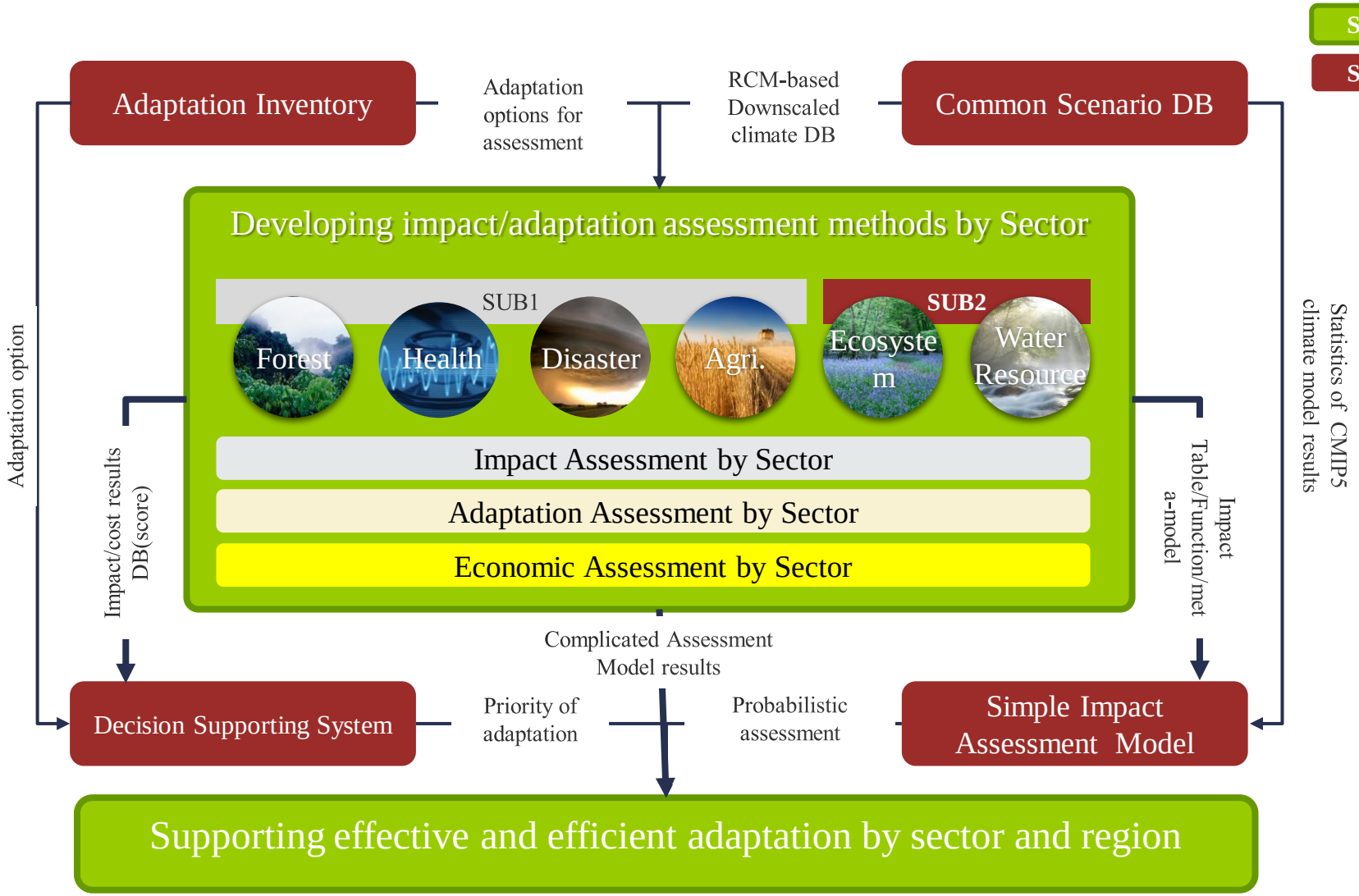
3. Economic approach to assess the feasibility of adaptation options

- Estimating the cost of risk and adaptation, and benefit of adaptation
- Developing sector-based assessment method (ex. Benefit transfer method)

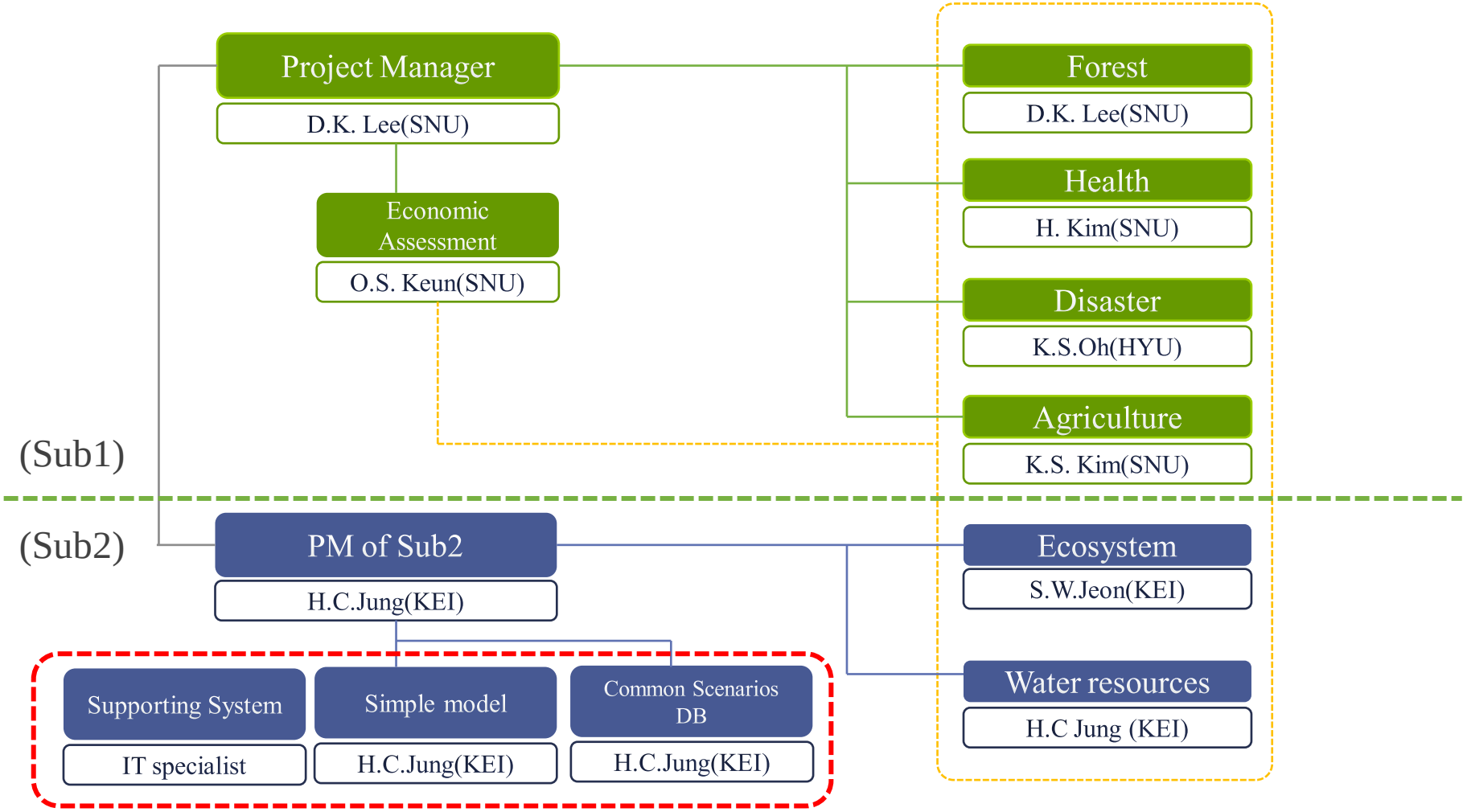
4. Integrated approach to support local adaptation decision-making

- Developing the web-based platform to find the effective and efficient adaptation in the local government (ex. ClimSave, AIM-Policy etc.)

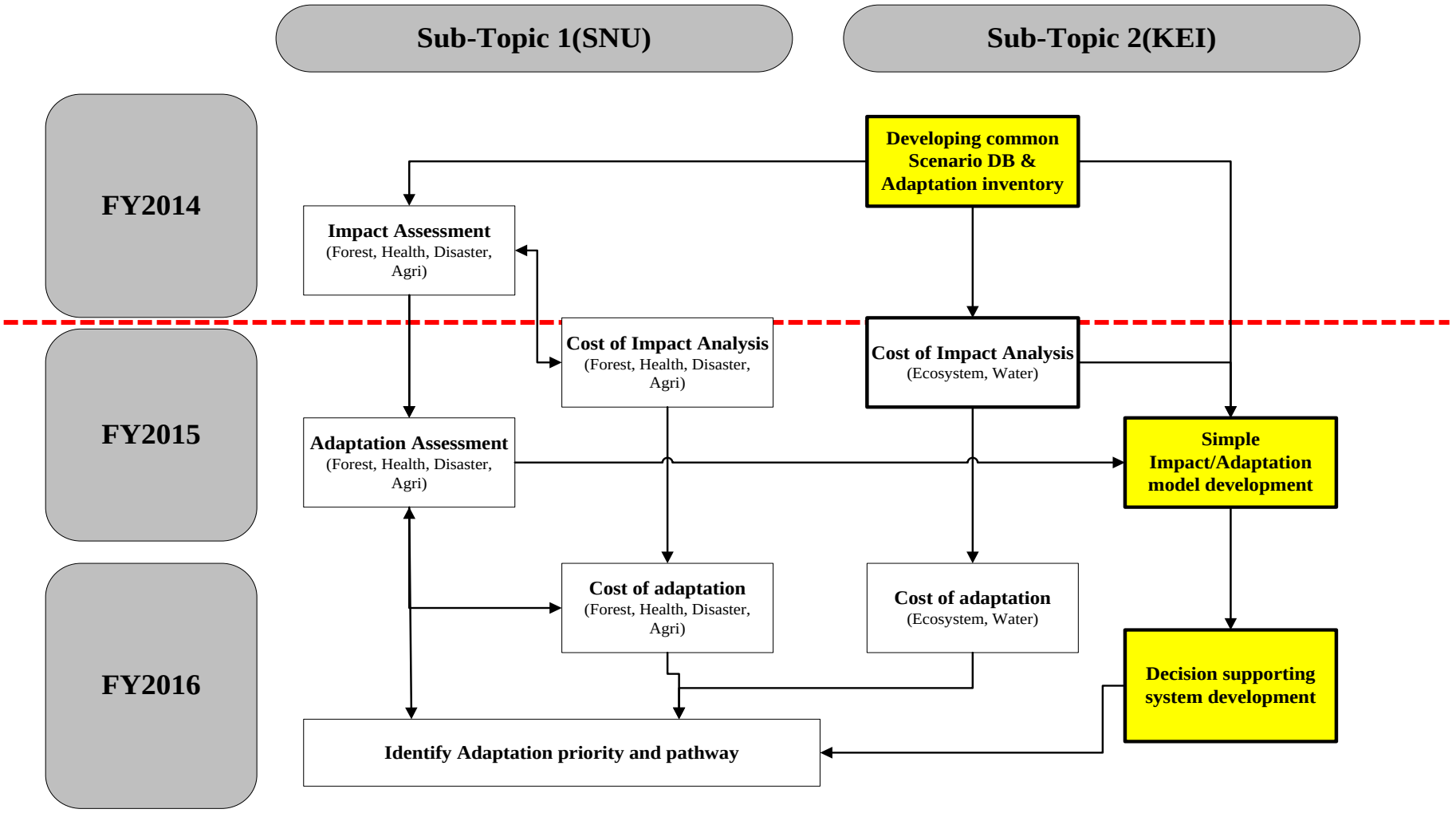
Approach to project (1): Framework



Approach to project (2): Participants' activities



Contents and Schedule



Components of decision supporting system

Contents and Schedule

	Research contents	
FY2014	Building common scenario DB for impact/adaptation assessment	Sub2
	Building adaptation inventory by sector	Sub1,Sub2
	Developing impact assessment model and method by sector	Sub1,Sub2
	Assessing the potential impact of climate change by sector/region	Sub1,Sub2
FY2015	Developing probabilistic impact assessment method using simple model	Sub2
	Assessing the risks of climate change by sector/region	Sub1,Sub2
	Assessing the cost of impact by sector/region	Sub1,Sub2
	Assessing the effectiveness of adaptation option by sector/region	Sub1,Sub2
FY2016	Assessing the cost -benefit of adaptation option by sector/region	Sub1,Sub2
	Assessing the priority of adaptation option by sector	Sub1
	Developing decision supporting system for local adaptation	Sub2
	Developing the adaptation strategies and plans	Sub1

Components of decision supporting system

Contents and Schedule(3): Decision supporting system

Common Climate DB (2014~)

- Downscaled 4 RCP scenarios based on 4 different types of RCM(1km, daily) for sectors
- CMIP5 GCM results(4 RCP, monthly) for probabilistic impact model, AIM-Policy etc.

Probabilistic impact assessment(2015~)

- Simple impact model based on the results from complicated model with/without adaptation
  - impact generation performance : impact function, impact table, meta-model(ANN)
  - consider the feedback effects between sectors
- MCDC simulation to estimate the probability of impact events based on meta-model

Decision supporting system (2014~)

- Web-based platform to display and share the in- and out-puts from sectoral assessment (’14~)
- Review the existing platform: ex. ClimSave, AIM-Policy etc.

Thank you for attention

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