

**Development of Climate Change Impact and Vulnerability Assessment  
Integrated Model for the Korean Environmental Spatial Planning Strategy  
– Establishing the Initial Conceptual Structure –**

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The final purpose of this research is to establish integrated model which can assess climate change impact and vulnerability and support future environmental planning in Korea for a seven year duration. The purpose of this first year research is to build conceptual structure of integrated model which is focused on national climate change impact and vulnerability political issues; food security, conservation area settlement, social overhead capital and national land management, climate disaster safe management, supplying services, and vulnerable social group.

For this research, we analyzed conventional studies, compared physical and statistical models on related issues. Also we discussed on proper approaches to make the conceptual structure of integrated assessment model with international experts from various fields including forestry, health, water quantity and quality, ecosystem, agriculture, and marine.

The initial conceptual structure is built according to nexus type with three tiers. As the main input data, a scenario coupled RCP with SSP will be selected for more probable and exact predictions. The structure consists of two main streams: land use and social safety. These two parts support six political issues (Tier I). These six issues have sub issues respectively: cultivation area feasibility study in food security; forest, water resource, farmland, ecosystem in conservation area settlement; land use change in social overhead capital and national land management; landslide and inundation in climate disaster safe management; water supply and carbon accumulation in supplying services; and thermal islands in vulnerable social group (Tier II). The input and output data to run models were selected and then connected to each other according to nexus approach in detail for three issues: conservation areas, climate disaster safe management and supplying services (Tier III).

With more analysis on empirical and theoretical evidence through additional literature reviews and interdisciplinary discussion, the structure of the model could be enhanced and contribute to building an effective integrated model for various stakeholders and institutions