Abstract

[Project Information]

Project Title : Comprehensive Research on Projection of Climate Change Impacts and Evaluation of Adaptation

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[Abstract]

Climate change impacts have become increasingly evident worldwide. The need to strengthen climate change countermeasures has emerged as a crucially important issue both in Japan and internationally. In response, Japan enacted the Climate Change Adaptation Act in 2018. Under this act, climate change impact assessments are to be conducted approximately every five years, with subsequent revisions to the National Adaptation Plan. In preparation for the Third Climate Change Impact Assessment Report scheduled for 2025, the Ministry of the Environment identified a need for up-to-date scientific knowledge related to climate change impact projections. Furthermore, to accelerate the implementation of adaptation measures by local governments and the private sector, needs have intensified for more detailed, high-resolution impact projection data. To meet these requirements related to climate policy, the S-18 Strategic Research Project was launched in 2020. The project is structured with 5 main themes and 19 sub-themes. Theme 1 includes the role of a coordinating unit, responsible for developing the overarching research framework and shared climate and socioeconomic scenarios that served as the foundation for all project activities. Themes 2–4 emphasize impact projections and adaptation assessments for specific sectors, aligning with the seven priority areas outlined in Japan's National Adaptation Plan. Theme 2 specifically addresses agriculture, forestry, and fisheries. Theme 3 addresses natural disasters, coastal zones, and water

resources. Theme 4 examines people's daily lives and urban infrastructure. Theme 5 provides for economic evaluations of climate change effects and social science research into adaptation policies. Over the course of five years, the S-18 Project has provided important contributions as the following four major pillars:

1) The project produced state-of-the-art findings related to climate change impacts and adaptation effectiveness across Japan. Particularly, the project produced results under conditions unified throughout all of the themes.

2) The project generated high-resolution (1 km mesh) spatial distribution data for widely diverse effects, enhancing the granularity and applicability of impact projections.

3) A unified research framework was developed to support consistent evaluation across sectors as described above. Furthermore, methodologies for impact projection tailored to individual fields were developed.

4) Based on the project's findings, concrete policy recommendations were formulated to inform and strengthen Japan's future climate change adaptation strategies.

[References]

Mimura N, Takewaka S. (eds) （2025） Climate Change Impacts and Adaptation Strategies in Japan - Integrated Research toward Climate Resilient Society, Springer, 359p. https://doi.org/10.1007/978-981-96-2436-2

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