

Implications of 4+°C in Japan

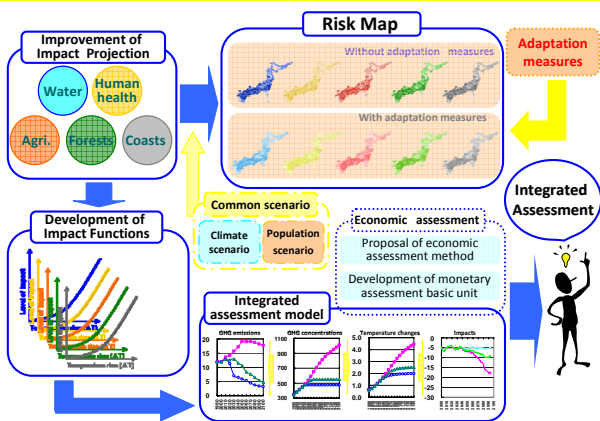
-- Quantitative analysis of sectoral impacts of climate change in Japan using an integrated assessment model, AIM/Impact[Policy] --

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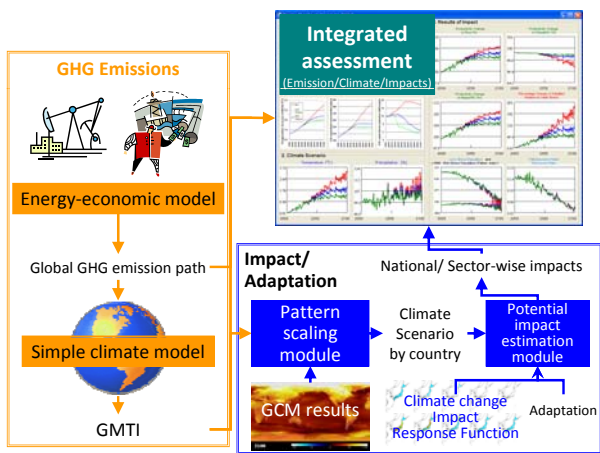
1. Project for Comprehensive Projection of Climate Change Impacts

Targeting the Asian region including Japan, the objectives of this research project are to obtain a quantitative overview of the impacts of climate change, to determine the dangerous level of global warming impacts based on this quantitative overview, and moreover, to estimate the impacts that will appear with various emission stabilization paths.



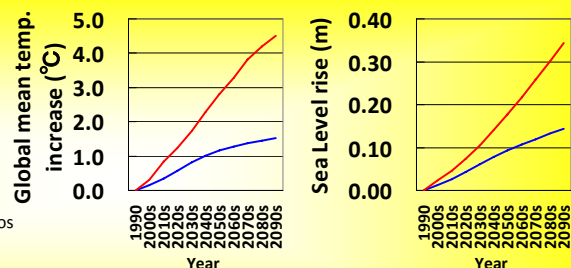
2. Integrated Assessment Model "AIM/Impact[Policy]"

The purpose of model development is to assess GHG emission paths, GHG concentrations, temperature increases, and impacts by field until 2100 with 1990. Using AIM/Impact[Policy], impacts in a time series can be calculated for climate stabilization levels, emission reduction targets, etc. established as policy targets.

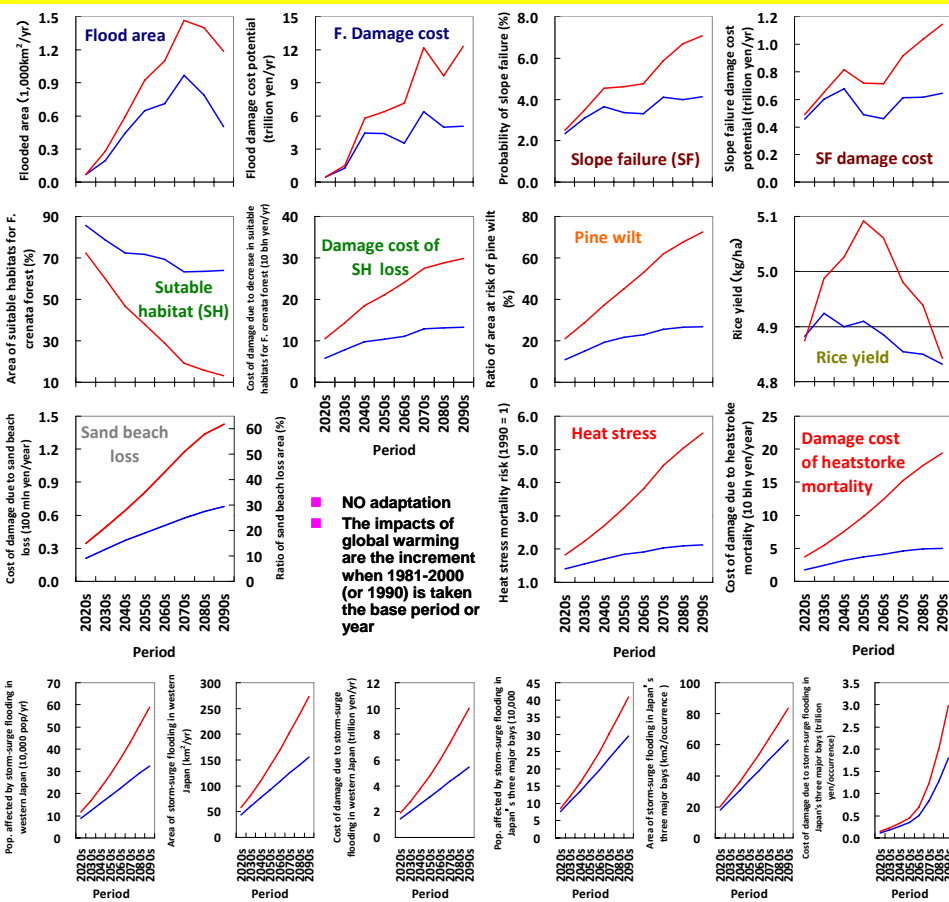


4. 4+°C and 2°C Scenarios

4+°C scenario: MIROC3.2-hires
 High-resolution atmosphere-ocean coupled GCM with a horizontal resolution of 1.125° (about 100 km) developed by a joint research team of the University of Tokyo for CCSR, NIES, and JAMSTEC
450s: 450ppmv cap on total GHG concentrations
 GCM used for preparation of climate scenarios by region from global mean temperature changes (pattern scaling): MIROC3.2-hires

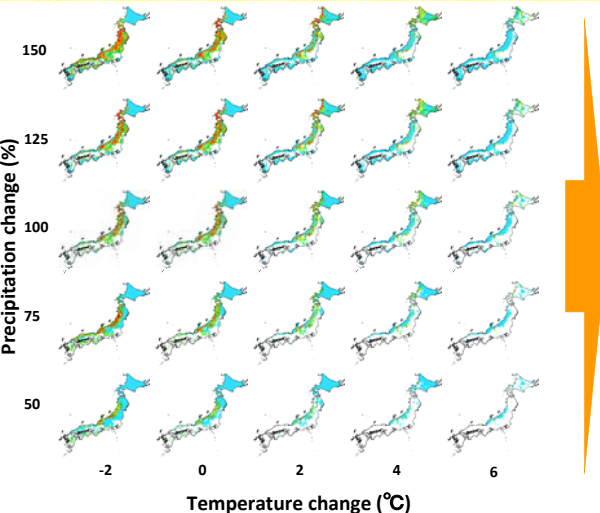


In Japan, greater impacts of global warming are expected in the future in a broad range of fields related to people's lives under . If a significant reduction in global greenhouse gas (GHG) emissions is achieved, the damage to Japan is also expected to be reduced to a considerable extent. However, even when the GHG concentration is stabilized at 450 ppm, the occurrence of a certain amount of damage is unavoidable



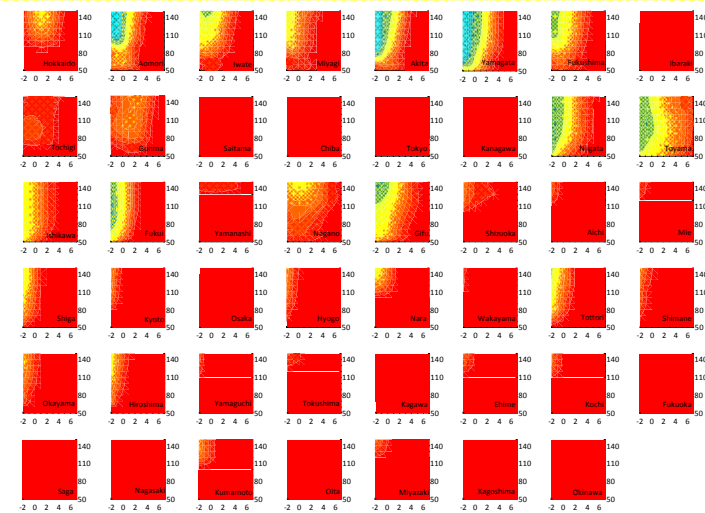
3. Impact Response Functions

Impact functions are aggregates (databases) resulting when the detailed model is used to perform many repeated simulations while primary factors such as temperature and precipitation amount are varied as in a sensitivity analysis, and the output averaged according to region.



Storm-surge flooding in western Japan

Storm-surge flooding in Japan's three major bays



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