Integrated Research on Climate Change Scenarios to Increase Public Awareness and Contribute to the Policy Process

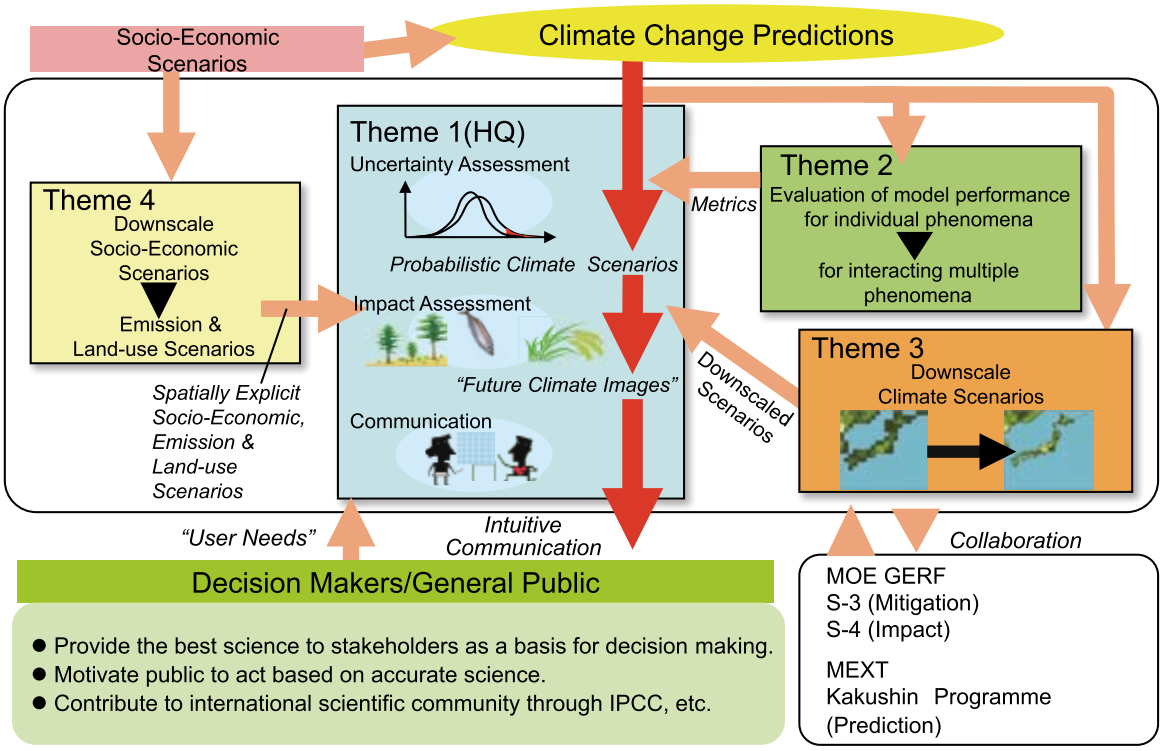
(Period I : FY2007-2009)

(Period II : FY2010-2011)

Project Leader : **Akimasa SUMI,** The University of Tokyo <S-5>

The University of Tokyo, National Institute for Environmental Studies, Japan Agency for Marine-Earth Science and Technology, Hokkaido University, National Institute for Agro-Environmental Sciences, Nomura Research Institute, Ltd., Kanagawa University, Toho University, Meteorological Research Institute, University of Tsukuba, Nagoya University, National Research Institute for Earth Science and Disaster Prevention, Kyoto University, Tokyo Institute of Technology

In this research project, present-day simulations and future projections by domestic and international climate models are comprehensively analyzed to assign indices quantifying uncertainties embedded in future projections. In addition, we use regional climate models to generate spatially-specific projections for Japan and its environs. We are also working on downscaling socioeconomic scenarios and the projections of land-use change. Through these efforts, we aim to construct comprehensive climate change scenarios that give detailed information about the impact of climate change on our society, and to find methodologies that will ensure that these scenarios can be presented in a manner that can be received intuitively by the public.



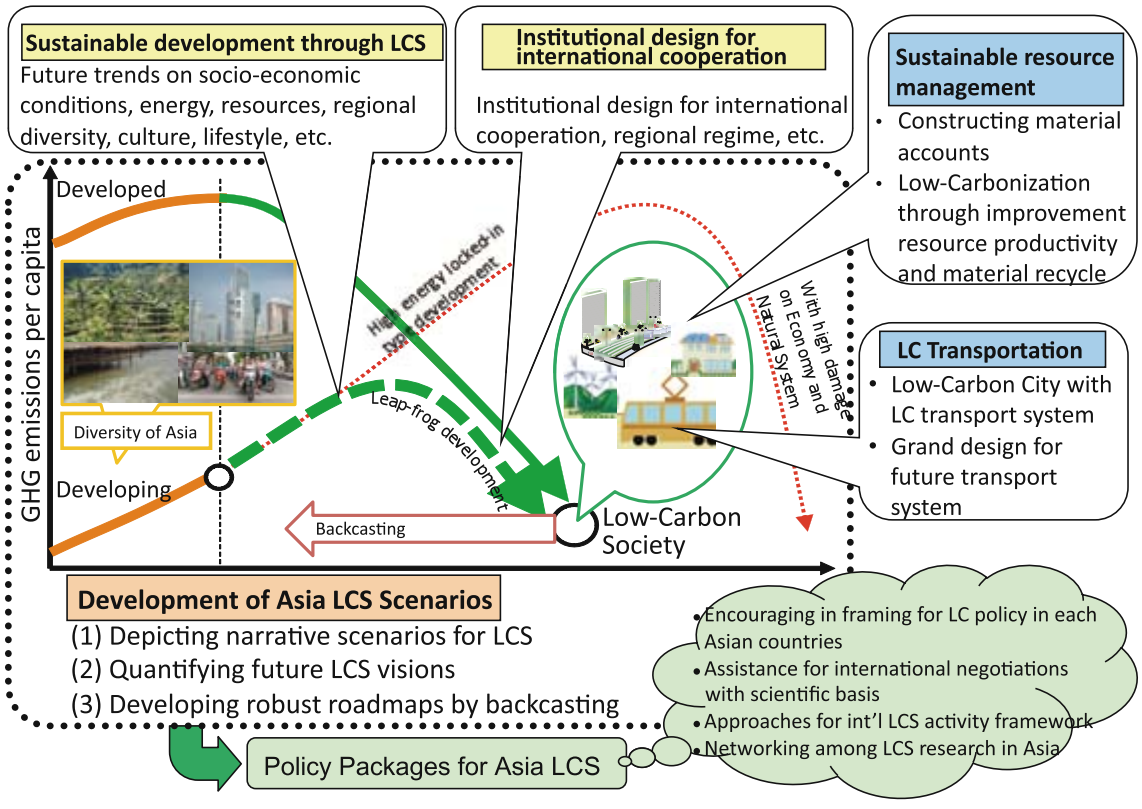
Research Project on Establishing of Methodology to Evaluate Middle to Long Term Environmental Policy Options toward Asian Low-Carbon Society (Low-Carbon Asia Research Project)

(Period I : FY2009-2011)
(Period II : FY2012-2013)

Project Leader : **Mikiko KAINUMA,** National Institute for Environmental Studies (NIES) <S-6>

NIES, Kyoto University, Mizuho Information & Research Institute, Inc., The Institute of Energy Economics, Japan, The Institute for Global Environmental Strategies, Hiroshima University, Tokyo Institute of Technology, International University of Japan, The University of Tokyo, Nagoya University, Nihon University, Yokohama National University

In order to achieve Asian Low-Carbon Societies (LCSs), we focus on some domestic and international factors which control the possibility to realize LCS by applying the modeling tools to the whole of Asia and various regions in Asia. We will design positive Asian LCSs in each country with a back-casting methodology, and also roadmaps toward the societies that cooperated with the policy options for other important problems in the Asian region in the 21st first half of the century.



Transboundary Pollution in the Atmosphere, Oceans and Inland Environments such as International Rivers

Synthetic Research on Elucidation of Regional Air Pollution in East Asia and Promotion of Atmospheric Environment Management Considering Co-benefit with Global Warming Measures

(Period I : FY2009-2011)
(Period II : FY2012-2013)

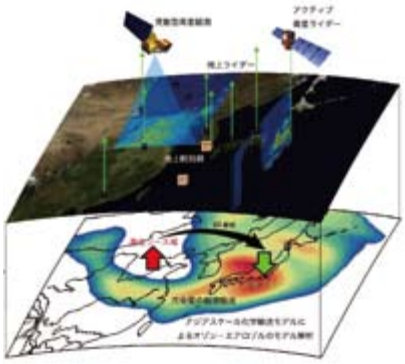
Project Leader : **Hajime AKIMOTO,** Acid Deposition and Oxidant Research Center/
Japan Environmental Sanitation Center (ADORC) <S-7>

ADORC, Japan Agency for Marine-Earth Science and Technology, National Institute for Environmental Studies, Nagoya University, Kanazawa University, Institute for Global Environmental Strategies, Tokyo Institute of Technology, Tohoku University

Emissions of air pollutants such as Nitrogen Oxide (NOx) and Volatile Organic Compounds (VOCs) as well as greenhouse gases such as carbon dioxide have rapidly been increasing in East Asia, which contribute significantly to transboundary transport of ozone and aerosol to Japan, hemispherical scale background air pollution, and global scale increase of greenhouse gases.

In this project, contributions of East Asian regional air pollution and hemispherical transport to ozone and aerosol pollution in Japan are quantified. Based on the scientific knowledge, reduction scenario of East Asian regional air pollutants will be developed considering co-benefit between mitigation of trans-boundary air pollution and global warming, and a pathway to international agreement will be discussed.

Analysis of transboundary air pollution and effect of warming material reduction synthesizing ground/satellite observations and chemical transport models



Clarify the cause of the increase of exceedance of oxidant warning levels

Propose exploiting means of EANET, etc., for atmospheric environment management in East Asia

Propose co-benefit approach between the regional air pollution and global warming measures

The first step to solve the problem is international sharing of scientific knowledge on regional air pollution

Theme1:
Elucidation of ozone and aerosol pollution synthesizing numerical model and observation

Grasp of the actual conditions of emissions is necessary for the air pollutants reduction scenario

Theme2:
Improvement of emission inventories of air pollutants and presentation of air pollutants reduction scienario

Theme3:
Research on international framework toward promotion of air pollution measures and co-benefit approach

International framework of transboundary air pollution measures are studied considering simultaneous control of global warming