

**Abstract****[Project Information]**

Project Title : Projection of Climate Change Impacts on Quality of Life (QoL) of People and Their Associated Infrastructure and Local Industries and Evaluation of Adaptation Options

Project Number : JPMEERF20S11840

Project Period (FY) : 2020-2024

Principal Investigator : Kurisu Kiyo

(PI ORCID) : ORCID 0000-0001-5441-3669

Principal Institution : The University of Tokyo  
Bunkyo, Tokyo, JAPAN  
Tel: +81-3-5841-8975  
E-mail: kiyo@env.t.u-tokyo.ac.jp

Cooperated by : Nagoya University

Keywords : Regional life, Urban structures, Land use, Urban planning, Transportation

**[Abstract]**

To address global climate change, it is essential to simultaneously advance both 'mitigation', which reduces greenhouse gases themselves, and 'adaptation', which takes measures to lessen the damage caused by climate change. In the field of climate change impact assessment, emphasis has been placed on the impact on "cities", and mitigating the damage caused by climate change to urban residents while preserving their Quality of Life (QoL) is considered a significant issue.

The impacts of climate change on local areas will affect the quality of life of people living in those regions through various pathways. In this theme, we identified and modeled the elements that constitute the quality of life of local residents and which aspects of those elements will be influenced by climate change. Simultaneously, we focused on general local life (subtheme 1), urban structures (subtheme 2), land use and urban planning (subtheme 3), and transportation (subtheme 4). We assessed the impacts and risks of climate change on these areas and contemplated adaptation measures based on our findings.

**[References]**

Kurisu, K., K. Shirai, Y. Imai (2025) Climate Change and Quality of Life: What Affects the Happiness of Citizens?. In: Mimura, N., Takewaka, S. (eds) Climate Change Impacts and Adaptation Strategies in Japan. Springer, Singapore.  
[https://doi.org/10.1007/978-981-96-2436-2\\_17](https://doi.org/10.1007/978-981-96-2436-2_17)

Tanikawa, H., Yamashita, N., 2025, Urban Metabolism and Adaptation Options for Climate Change. In: Mimura, N., Takewaka, S. (eds) Climate Change Impacts and Adaptation Strategies in Japan. Springer, Singapore.

[https://doi.org/10.1007/978-981-96-2436-2\\_19](https://doi.org/10.1007/978-981-96-2436-2_19)

Sawa, D., Yamashita, N., Tanikawa, H., Daigo, I., Maruyama, I. (2025) CO<sub>2</sub> Uptake Estimation in Japan's Cement Lifecycle. Journal of Cleaner Production, 486, 144542.

<https://doi.org/10.1016/j.jclepro.2024.144542>

Yamasaki, J., Y. Wakazuki, S. Iizuka, T. Yoshida, R. Nitani, R. Manabe, A. Murayama (2024) Microclimate Simulation for Future Urban District under SSP/RCP: Reflecting changes in building stocks and temperature rises, Urban Climate, Vol.57, 102068.

<https://doi.org/10.1016/j.uclim.2024.102068>

Yamasaki, J., Murayama, A., 2025, Implementing Urban Design Workshops for Climate Change Adaptation at the District Scale. In: Mimura, N., Takewaka, S. (eds) Climate Change Impacts and Adaptation Strategies in Japan. Springer, Singapore.

[https://doi.org/10.1007/978-981-96-2436-2\\_18](https://doi.org/10.1007/978-981-96-2436-2_18)

Xu, F., Tajima, H., Kato, H., Khaleghi, M. (2024) A Method for Evaluating the Future Flood Risk for Railway Networks under Climate Change. Journal of the Eastern Asia Society for Transportation Studies, Published: June 20, 2024.

<https://doi.org/10.11175/easts.15.398>

Xu, F., Kato, H., 2025, Urban Transport in a Warming World: Adapting to Climate Challenges.

In: Nobuo Mimura and Shinya Takewaka (eds) Climate Change Impacts and Adaptation Strategies in Japan, Chapter 20, Springer, Singapore.

[https://doi.org/10.1007/978-981-96-2436-2\\_20](https://doi.org/10.1007/978-981-96-2436-2_20)

"Adapting to the Effects of Climate Change on Quality of Life", Coursera  
Massive Open Online Course, The University of Tokyo

<Short instruction with video>

<https://mooc.he.u-tokyo.ac.jp/ja/course/Adapting-to-the-Effects-of-Climate-Change-on-Quality-of-Life>

<Course page>

<https://www.coursera.org/learn/climate-change-adaptation>

This research was performed by the Environment Research and Technology Development Fund (JPMEERF20S11840) of the Environmental Restoration and Conservation Agency provided by Ministry of the Environment of Japan.