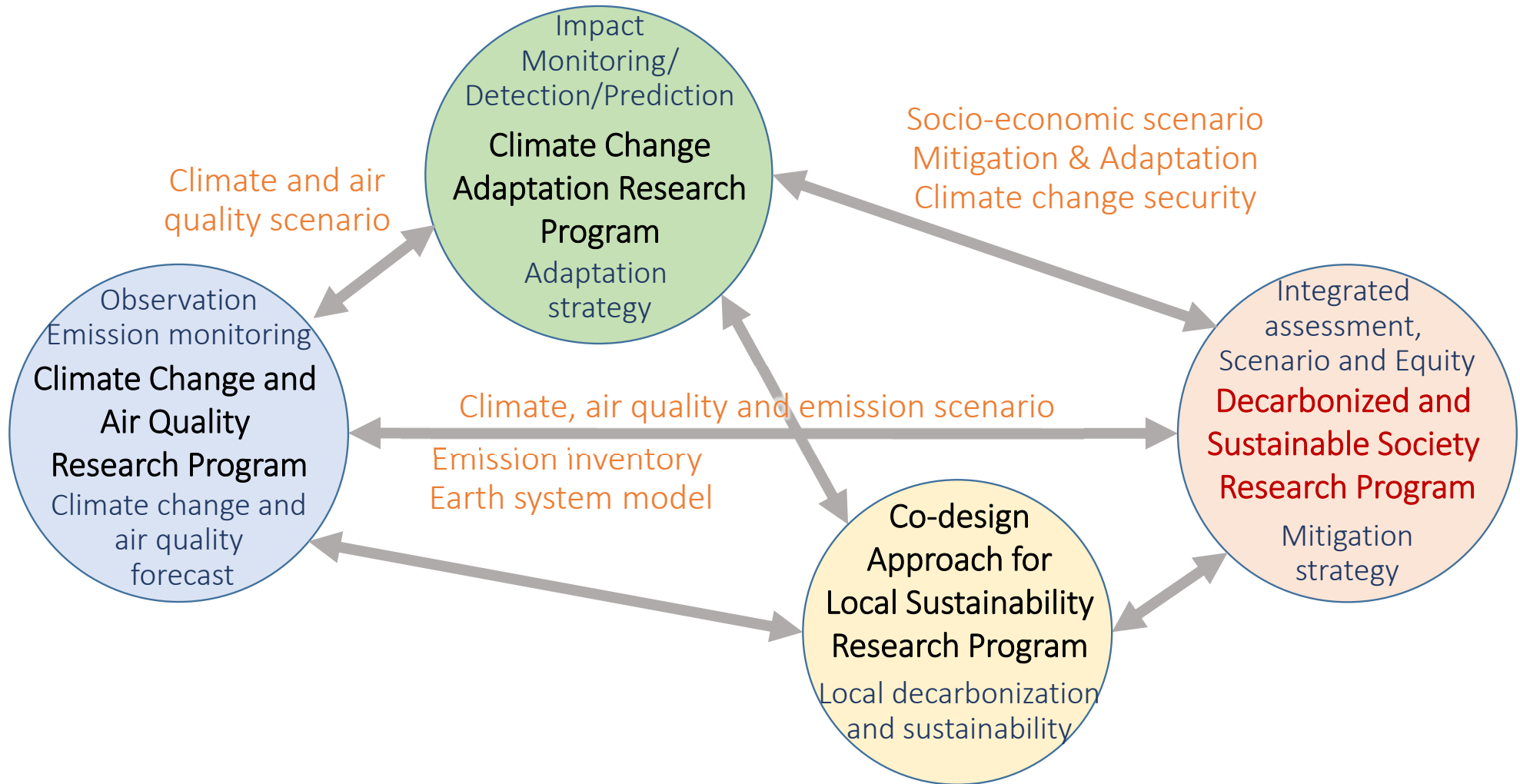




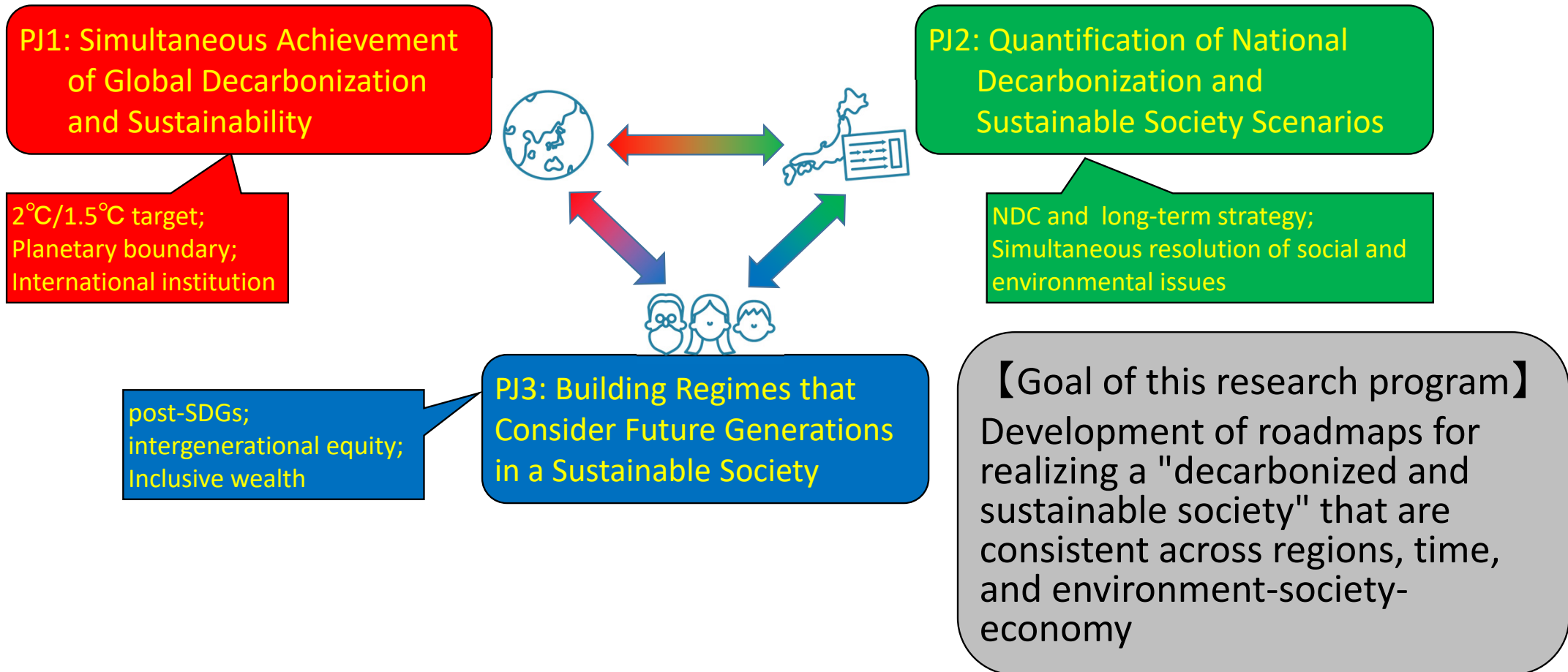
"Climate Crisis Research Initiative" for climate change research at NIES (National Institute for Environmental Studies)





Decarbonized and Sustainable Society Research Program at NIES

Research Program for Development of Decarbonized and Sustainable Society at the Global and National Levels

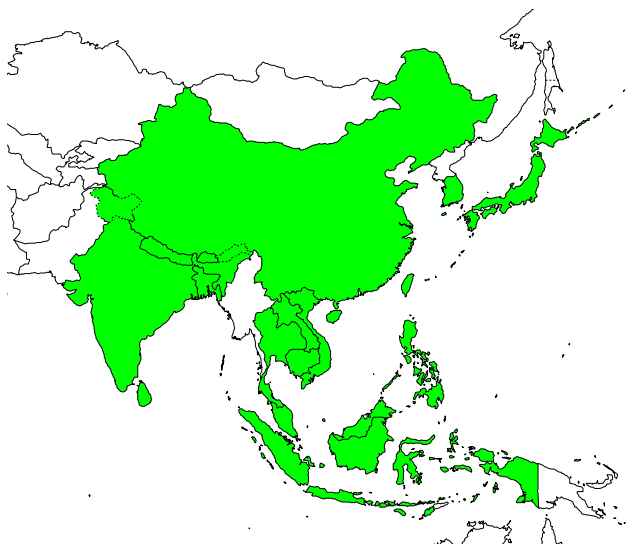


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To download the slides, please scan this QR code. →
<https://www-iam.nies.go.jp/aim/pdf/cop28.pdf>



International Network of AIM (Asia-Pacific Integrated Model)



The 29th AIM International Workshop in 2023 (Hybrid)

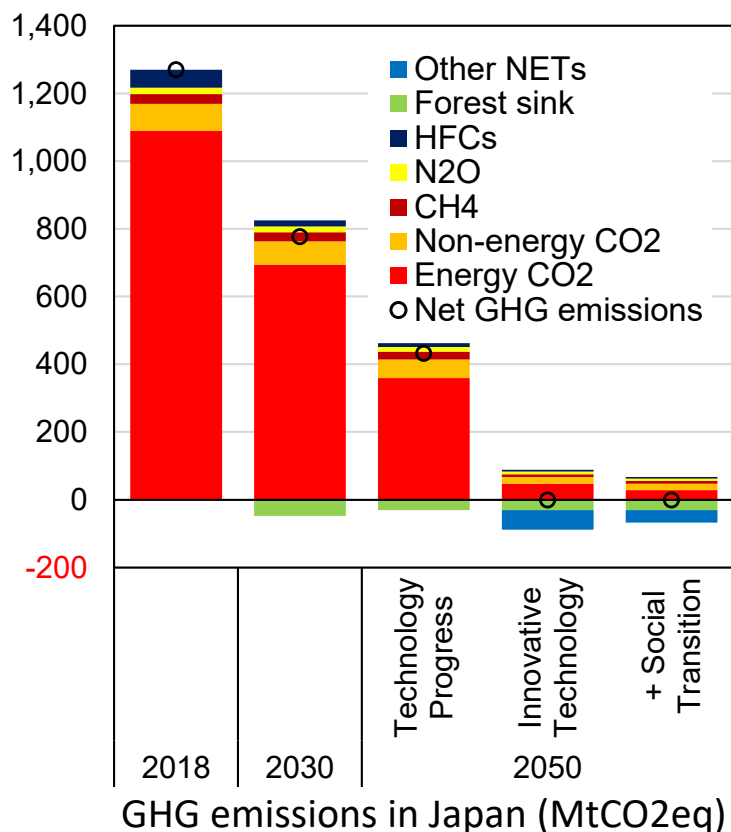


Website of AIM

- Asian countries will update their mitigation target and roadmap to achieve the 2/1.5 degree target reflecting their issues to be solved and the resources to be endowed.
- Model can be a collaboration tool between science and decision making process. From the long-term viewpoint, each country will need the capacities to develop model and scenarios by itself.
- AIM (Asia-Pacific Integrated Model) has supported Asian countries to develop the integrated assessment model and their long-term low carbon scenarios.
- <https://www-iam.nies.go.jp/aim/index.html>



Assessment of net zero GHG emissions in Japan in 2050 based on AIM



- Under the NDC extension ("Technological Progress" scenario), net-zero GHG emissions cannot be achieved by 2050 in Japan.
- In the "Innovative Technology" scenario, net-zero GHG emissions are achieved by 2050 through the diffusion of innovative decarbonization technologies such as energy conservation, renewable energy, and electrification. In the "+ Social Transition" scenario, net-zero GHG emissions will be achieved through both the diffusion of decarbonization technologies and progress in digitalization, circular economy, etc.
- Fossil fuels currently account for more than 80% of total primary energy supply, but in a net-zero GHG society in 2050, renewable energy will account for about 70%, and energy self-sufficiency will increase significantly from 11% (in 2018) to 66% (in 2050). In a net zero GHG society, total final energy demand in 2050 will be almost halved compared to that in 2018.
- Since synthetic fuels account for a large share of energy-related CO₂ emissions in 2050, and a certain amount of emissions are inevitable even with decarbonization in 2050, negative emission technologies will be needed to reduce GHG emissions to virtually zero.
- Under the "Innovative Technology" scenario, the cumulative additional investment from 2021 to 2050 would be about 300 trillion JPY. On the other hand, in the "+ Social Transition" scenario, it will be about 250 trillion yen, since the required service demand can be reduced.

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Role of AIM to support climate policies in Asian countries

Communication and feedbacks to real world using simulation results of AIM



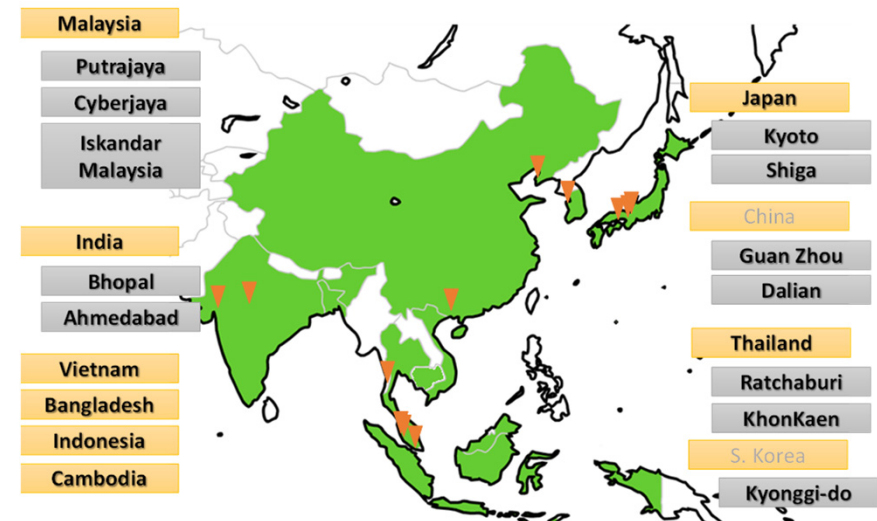
Third National Communication of Thailand
<https://unfccc.int/documents/181765>



Long-term strategy of Thailand (Revised version)
https://unfccc.int/sites/default/files/resource/Thailand%20LT-LEDS%20%28Revised%20Version%29_08Nov2022.pdf



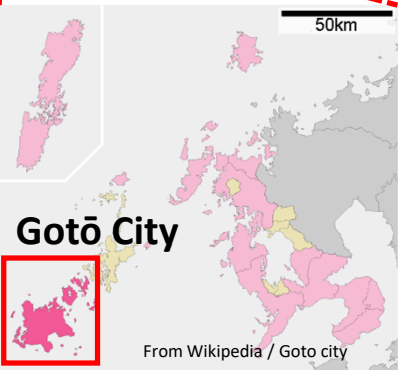
Long-term strategy of Indonesia
https://unfccc.int/sites/default/files/resource/Indonesia_LTS-LCCR_2021.pdf



Developed low carbon scenarios in Asia (<http://2050.nies.go.jp/>)

Towards a Sustainable and Decarbonized City: Research Activities for Sustainable Islands Gotō

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<https://www-iam.nies.go.jp/aim/pdf/cop28.pdf>



Reviewing Domestic Wastewater Treatment and Management Systems in Remote Islands

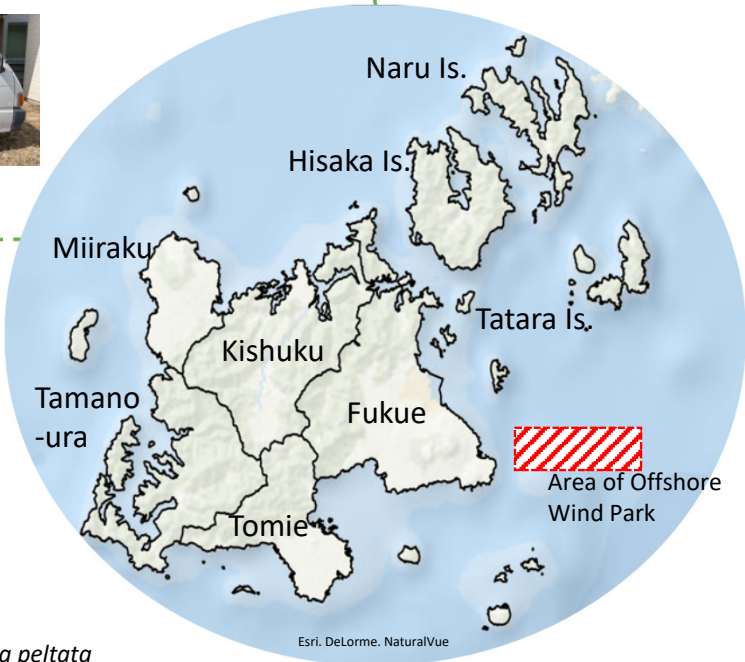


Revitalization of Fisheries and Saikai National Park

Ethnological study for fisherman
Field study of seaweed and coral

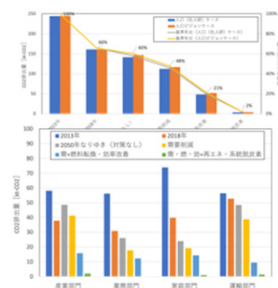


Turbinaria peltata
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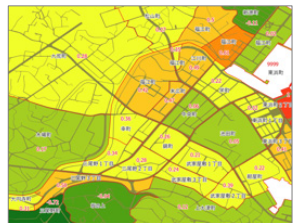


Design of Decarbonized Energy System under Depopulation

Feasibility study of decarbonization with PV and Offshore wind



Analysis of rate of vacant houses in city center under depopulation



[Overview of Gotō City in Nagasaki Pref. (Yr. 2022)]
Area: 420.12 km²
(11 inhabited and 52 uninhabited islands)
Population: 34,391 (14,002 of Age 65+)
Average yearly temperature: 17 °C

