

Framework for Nation-wide Educational Program of Climate Change and Greenhouse gases in Japan



Masayuki Kondo

- The IDEC Institute, Center for Peaceful and Sustainable Futures
- The sustainability division, Seto Inland Sea Carbon Neutral Research Center
- Network for Education and Research on Peace and Sustainability
- Graduate School of Innovation and Practice for Smart Society
 - Graduate School of Humanities and Social Sciences
- School of Integrated Arts and Sciences, Department of Integrated Global Studies

HIROSHIMA University



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UNIVERSITY**

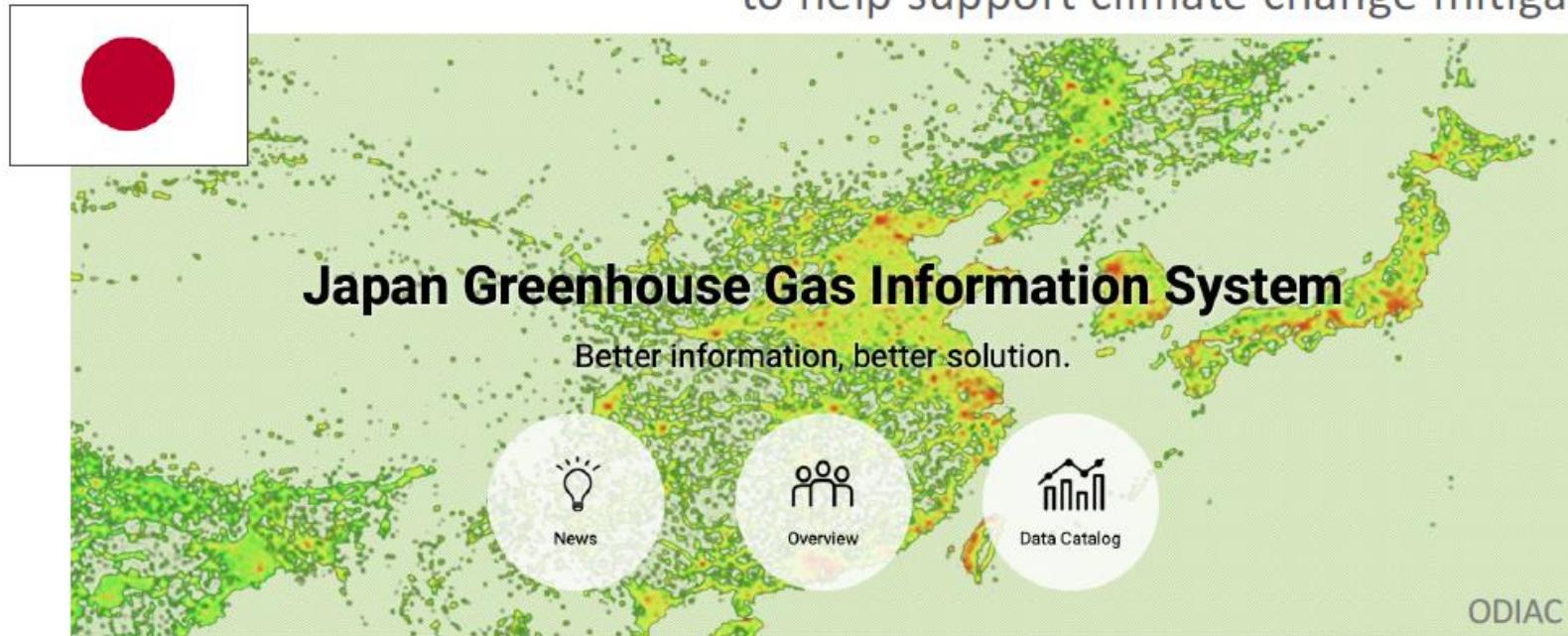


LeXtra
League of geophysical
research eXcellences
for tropical asia



The Japan GHG Center initiative

to help support climate change mitigation policies



- “One stop” information hub for scientists, policymakers and business leaders, for strong messaging on urgency of climate change mitigation
- Multi-agencies/institutes’ efforts for the “all-Japan, one-team” national initiative to better serve for the global society
- We will advance integrated assessments of GHG emissions/fluxes for Global Stocktake, WMO’s GGGW, UNEP’s IMEO, and business

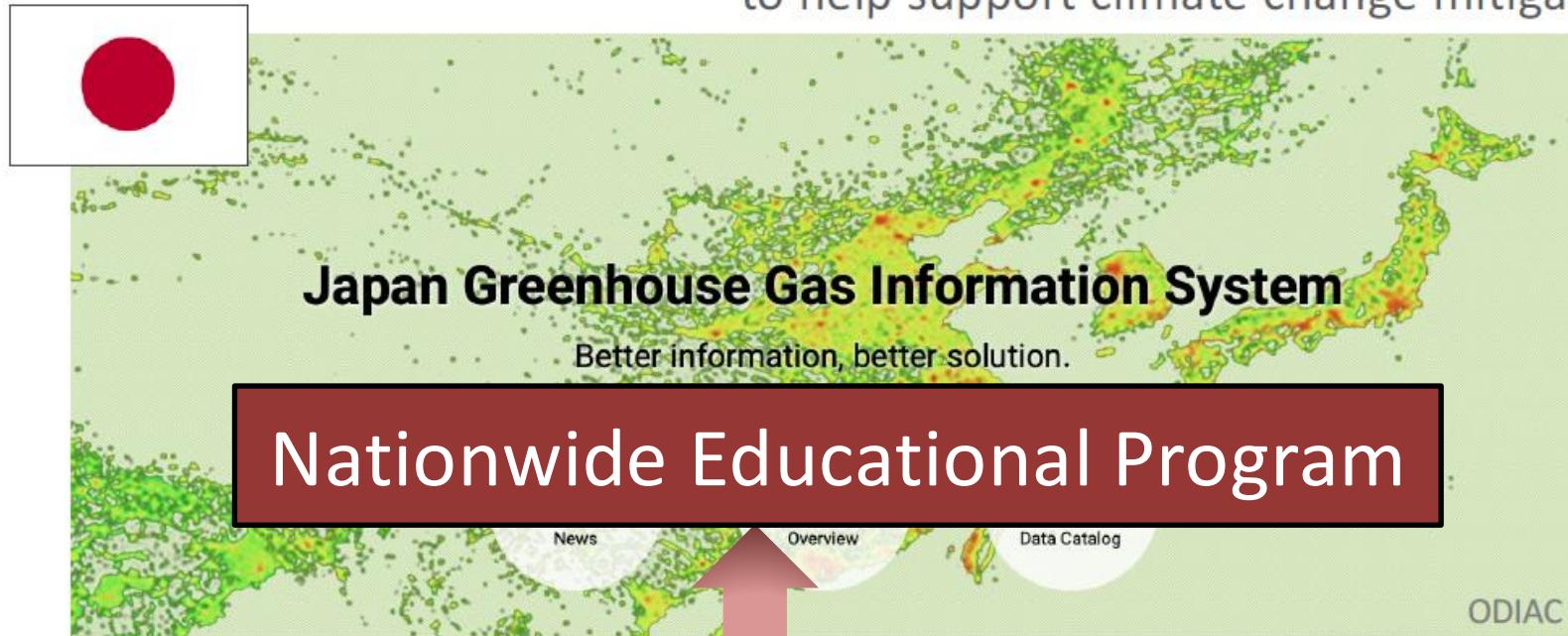


Ministry of the Environment
Government of Japan



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Research/Educational Resources in Japan

*Showing only the representative educational and research institutions among many.

- Eddy flux measurement
- Ecosystem modelling
- Crop yield simulations, etc.



- Eddy flux measurement
- Ecosystem modelling
- Inverse modelling
- Earth system modelling
- Environmental remote sensing
- Atmospheric & ocean GHG measurement, etc.



Educational hub

- GHG budget assessment
- Blue carbon measurement
- Carbon neutral experiment, etc.



- Atmospheric GHG measurement, etc.



CHIBA UNIVERSITY

- Environmental remote sensing, etc.



- Eddy flux measurement
- Ecosystem modelling
- Inverse modelling
- Earth system modelling, etc.

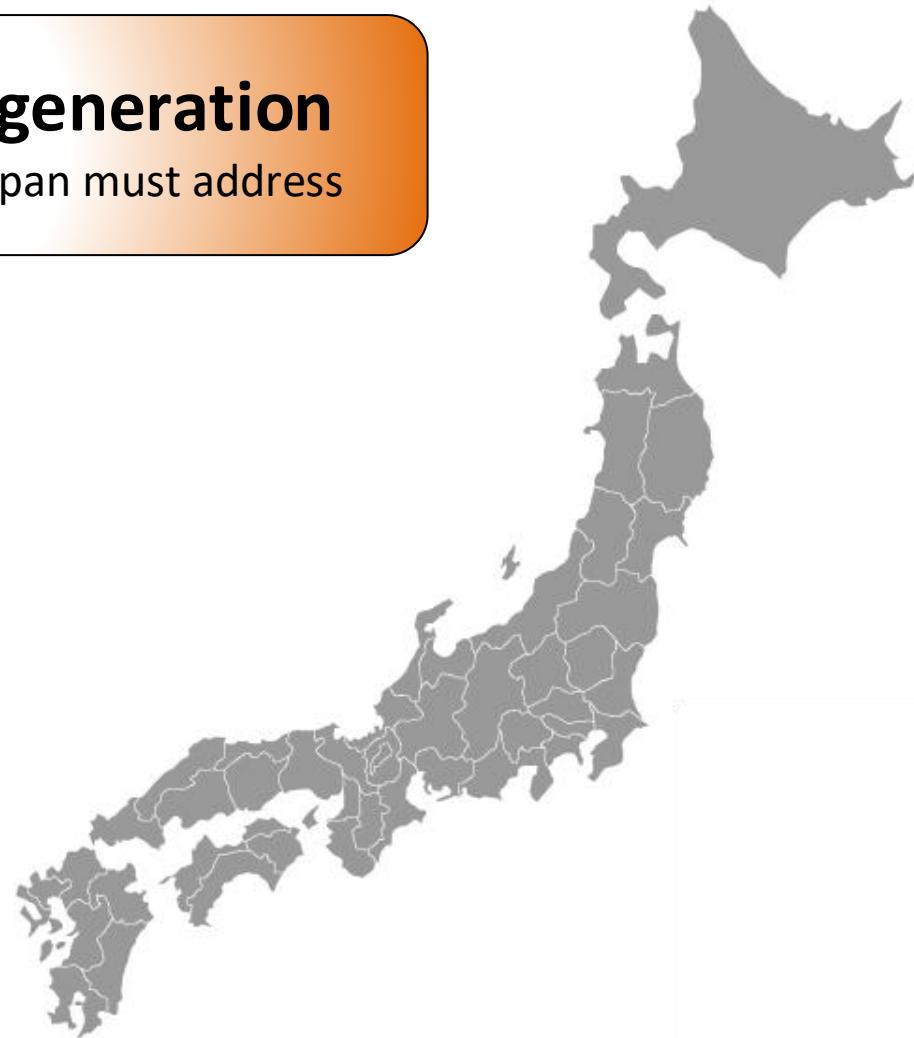


- Climate science
- Chemical transport modeling, etc.

Research/Educational Resources in Japan

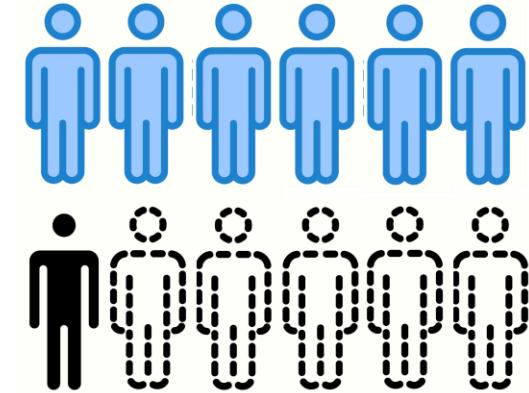
Nurturing the next generation

an immediate challenge that Japan must address



Over 40
years old

Under 40
years old



Research/Educational Resources in Japan

Nurturing the next generation

an immediate challenge that Japan must address

Integrated foundational education of related fields

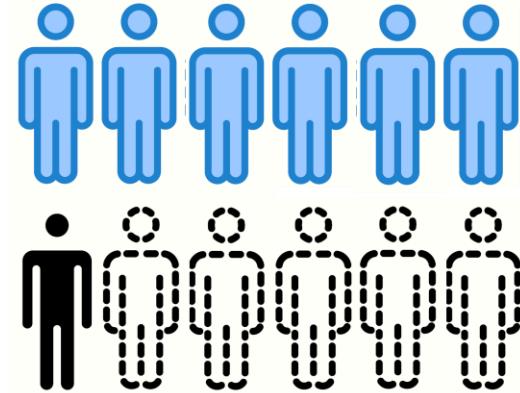


Reconstructing the foundational education

integrating GHG educational foundations

Over 40 years old

Under 40 years old



Research/Educational Resources in Japan

Nurturing the next generation

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Integrated foundational education of related fields

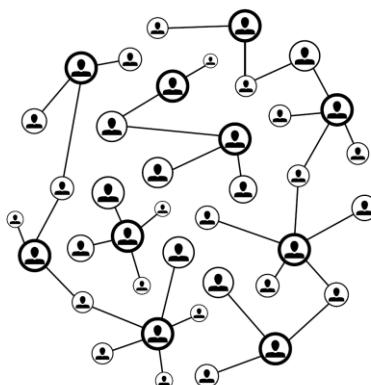


Nationwide education

nationwide expansion of GHG education

Reconstructing the foundational education

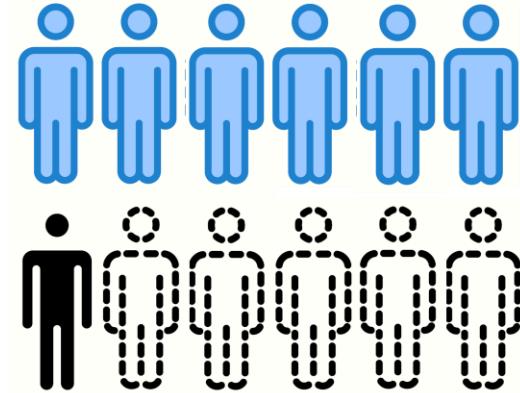
integrating GHG educational foundations



Nationwide educational network of research institutes/universities

Over 40 years old

Under 40 years old



Nationwide Integrated Education Program



High School Education

Outreach lectures, high school seminars, university & faculty introductions

Career path first stage
(University and faculty matching)

Nationwide Integrated Education Program



High School Education

Outreach lectures, high school seminars, university & faculty introductions



Career path first stage
(University and faculty matching)



Undergraduate Education

Outreach lectures, seminars, university & faculty introductions



Career Path Stage 2
(Graduate School and Faculty Matching)



Nationwide Integrated Education Program



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Career Path Stage 2
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Graduate Education

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Career Path Stage 3
(Employment Matching)



Academic Positions

Research Positions



Nurturing the Next Generation of
Researchers

Japan Science and Technology Agency (JST) STELLA program at Hiroshima University

> 250 students

Selection

~30 students

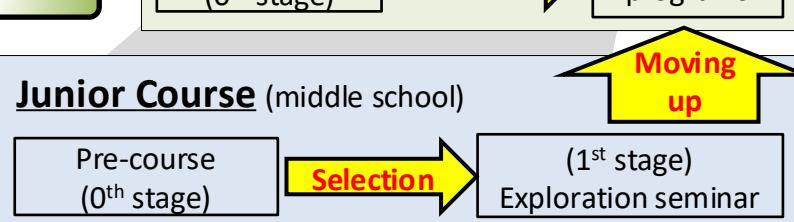
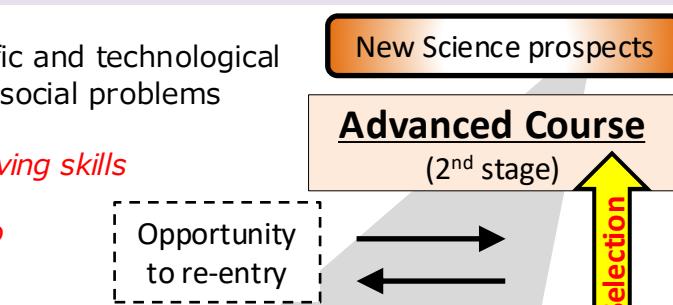
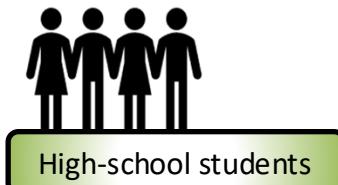


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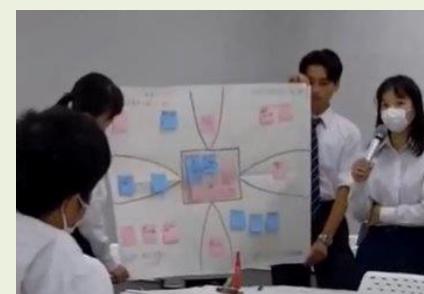
【Stella Program Overview】

Aim: To cultivate scientific and technological talent capable of solving social problems

- *Developing problem-solving skills*
- *Developing the ability to collaborate together*

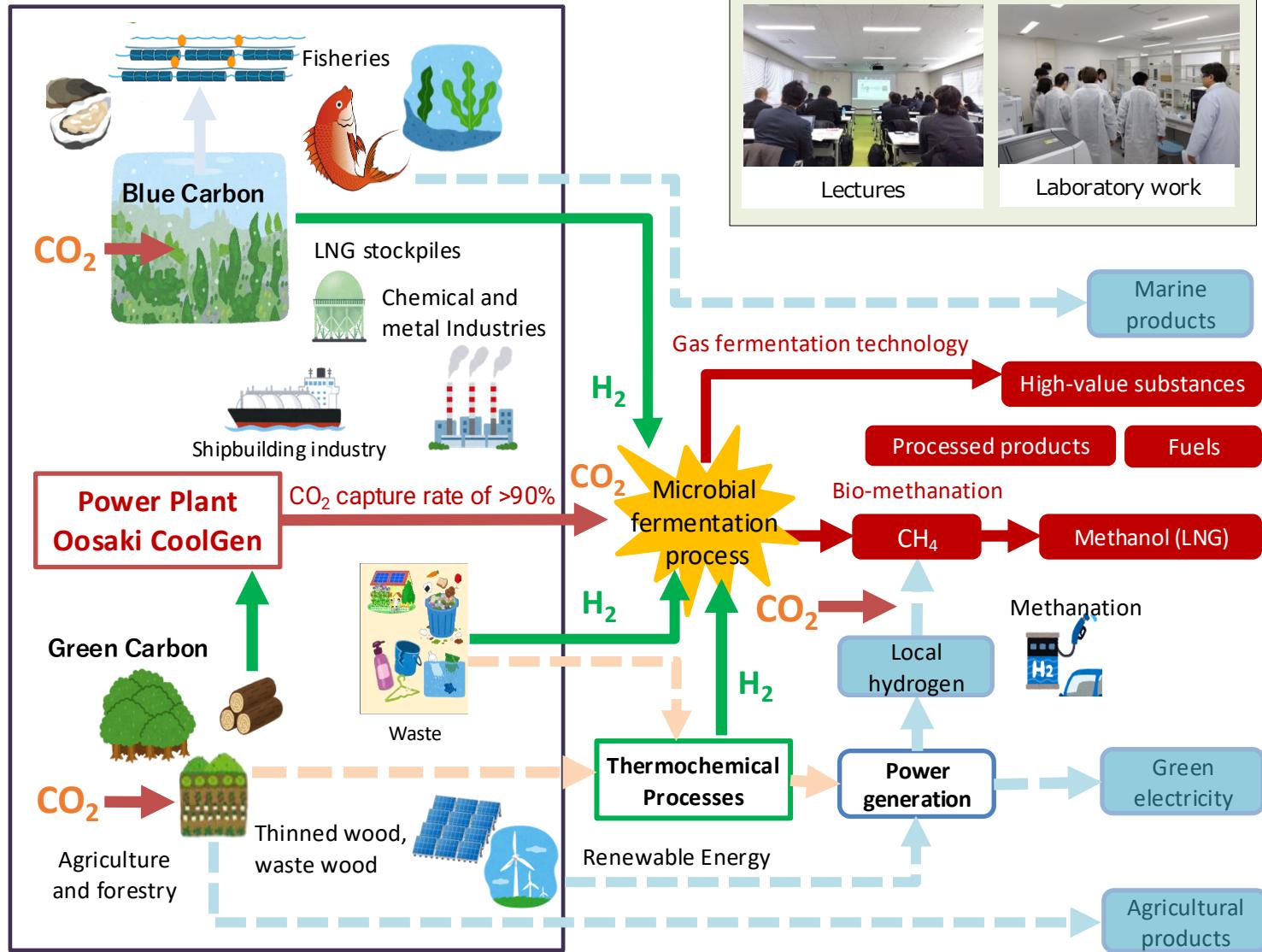
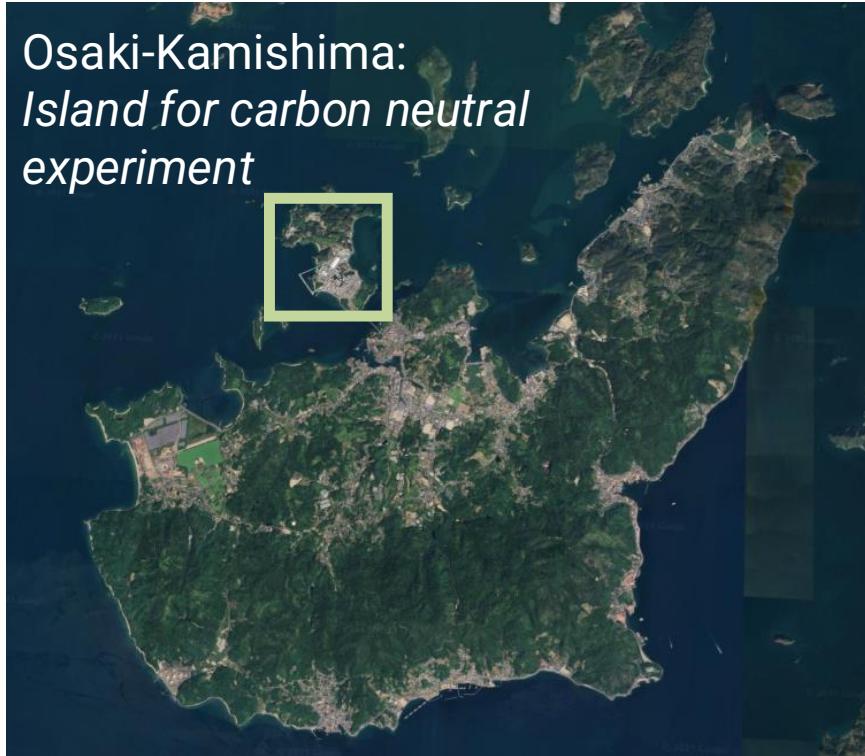


【Activities at Hiroshima University】



The carbon neutrality experiment of Hiroshima University

Osaki-Kamishima: *Island for carbon neutral experiment*



“All-Japan” academic course will be launched at Hiroshima University in FY2026

The forefront of climate change research

Lesson 1: What are global environmental issues?

Lesson 2: Atmospheric radiation characteristics

Lesson 3: How global warming works

Lesson 4: Changes in the Earth's atmospheric composition

Lesson 5: Atmospheric composition and terrestrial ecosystems/oceans

Lesson 6: Greenhouse gas circulation

Lesson 7: Observing atmospheric composition: Ground-based, aircraft-based, and ship-based observations

Lesson 8: Observing atmospheric composition: Satellite-based observations

Lesson 9: Emission inventory

Lesson 10: Numerical model overview

Lesson 11: Numerical model details

Lesson 12: Current and future status of global warming

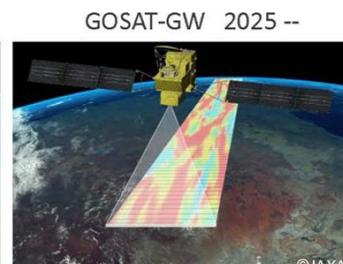
Lesson 13: Climate change policy: mitigation and adaptation

Lesson 14: Efforts toward decarbonization

Lesson 15: Climate change, international cooperation, and the SDGs



Planning to make a full use of the GOSAT series for education



Greenhouse gases
GOSAT
PROJECT
Observing SATELLITE

GOSAT-2
PROJECT
AT THE NATIONAL INSTITUTE FOR ENVIRONMENTAL STUDIES

GOSAT-GW
NIES
Project



Welcoming participation of students and early-career researchers!!



Co-hosted with the Science Council of Japan

7th iLEAPS Open Science Conference 2027

Bridging Land Ecosystems and Climate: Advancing Solutions for a Sustainable Future

1 March - 5 March 2027 | Hiroshima JAPAN



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海洋研究開発機構
JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY



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KYOTO UNIVERSITY



名古屋大学
NAGOYA UNIVERSITY



国立環境研究所
National Institute for Environmental Studies



北海道大学
HOKKAIDO UNIVERSITY



UTokyo
CHIBA UNIVERSITY
Akita Prefectural University

県立広島大学
Prefectural University of Hiroshima



futurearth
Research. Innovation. Sustainability.



一般社団法人
日本生態学会
The Ecological Society of Japan



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