

GLEC

Global and Local Environment Co-creation Institute, Ibaraki University

Established in 2020



Ibaraki University has established the Global and Local Environment Co-creation Institute (GLEC), integrating the Center for Water Environment Studies (CWES: established in 1956 as Hinuma Hydrobiological Station) and the Institute for Global Change Adaptation Science (ICAS: established in 2006). GLEC advances comprehensive research on the global and local environment covering a range of field sciences, and predictive and policy sciences to construct a center of excellence for research and education related to the environment. It strengthens research, education, and social cooperation related to sustainable co-creation to resolve environmental issues.

Research

GLEC aims to establish a **unique center of excellence for co-creative research and education on the environment through community-based efforts**, and provides a platform through which diverse researchers gather and cooperate, transcending and encompassing the frameworks of humanities and sciences. The idea is that co-creative research will bring about a new and unique co-evolution of research and education. Our visions and ideas include the following:

1 Unique center of excellence for co-creative research and education to find comprehensive solutions to environmental, social, and policy issues

We propose visions for and solutions to the concept of a sustainable society against global and local changes in the environment. In pursuit of that objective, we publish and disseminate the valuable fruits of academic activity through field-based surveys and research in multiple fields, along with the construction of socio-environmental profiles integrating the data obtained. Therefore, we created a center of excellence for research and education to accomplish these objectives.

2 Developing science through inheriting achievements at our university and multilayered integration of academic fields

We integrate field sciences, predictive and policy sciences, and practical technological development to solve issues. After finding solutions to resolve local difficulties, we apply them to domestic and international issues. Thereby, we construct a multi-layered human networks combining our district, all of Japan, and the world.

3 Taking over old and new “challenges”

We conduct surveys changing the shape of the local and global environment using multiple methods of science and data recording, and hand them down to younger generations. In doing so, we introduce new approaches of rapidly developing research methods involving digital technologies such as artificial intelligence and data science.

GLEC is designed for “think-tank functions of the local environment based on science”, “cultivation of human resources,” and to realize a “hub of cooperation extending the experiences in Ibaraki throughout Japan and the world.”

■ Division of Climate Change

We conduct studies on changes and mechanisms of the global and local environments, evaluate their influences, and identify countermeasures against those influences through mitigation and adaptation. Furthermore, we engage in research by exploring means of establishing resilience of natural environments, humans, and society in confronting rapid climate change and natural disasters on global and local scales.



■ Division of Environment in Basin Areas

We conduct research investigating rivers, lakes, and basins and study phenomena and mechanisms of the environments, vegetation, and ecology. Additionally, we carry out surveys and analyses of the environment, vegetation, and ecologies in basins to identify underlying problems.



■ Division of Environmental Adaptation in Agriculture and Ecosystems

Our themes are sustainable land utilization, agriculture and cattle breeding, development of adaptive cultivation techniques, restoration of vegetation in ecological systems and conservation of circulating soil and water, all under conditions of climate change. We investigate the mechanisms of changes caused by varying environments such as climate variation in human settlement areas (e.g., farming villages) and their periphery (satoyama) and propose ways of adapting to them.



■ Division of Human and Socioeconomics

We find changes in human and social structures adapting to climate change and propose new mechanisms against such changes. We coordinate knowledge to adapt to varying environments and make proposals for politics. In addition to considerations for nature, we investigate the concept of a sustainable society, comprehensively solving the problems of the environment, society, and economics including those of safety assurance for human beings, regional activation, human rights, and history.



Education



Water Environmental Field Station

The research and education center is located by Kasumigaura, the second largest lake in Japan. The Ministry of Education, Culture, Sports, Science and Technology, Japan placed it as one of the joint educational sites in Japan for lake study to establish "A field education center for environmental science of the hydrosphere to advance multidirectional understanding of relations between lake environments, ecology and humans."

Available for your use for practice and research are lakes, such as Kasumigaura, rivers, agriculture areas, fisheries, tourism, geology, history, and disaster defense using local resources.

These activities include field training for undergraduate students, academic studies for dissertations, and theses for master's and doctorate degrees. The station is available for elementary, junior high, and high school students and for workshops held by private enterprises and citizens.

Check the webpage described below to learn more about the facilities and instruments available for field training and research work, when you can use them, and how to apply.

URL: <http://www.cwes.ibaraki.ac.jp>



We present "Introduction to Sustainability Science" as a core subject for undergraduate students. Lectures from all faculties include discussions on climate change and sustainability. Panel discussions are also conducted.

Extending the traditional education of sustainability science, we are constructing an educational system for sustainable development goals (SDGs).

Education of Sustainability Science

The Graduate Program on Sustainability Science (GPSS) at Ibaraki University offers common subjects shared by all four graduate schools. Several subjects such as Fieldwork in Sustainability (International, in Vietnam and others) and Fieldwork in Sustainability (Domestic, in Daigo town and others) are available.

Ibaraki University is a member of the joint education program of the Sustainability Science Consortium (SSC), along with the University of Tokyo, Osaka University, and United Nations University. Those who joined this program and who earned the predetermined number of credits are provided with a certificate of SSC completion.



Subject Group

Subject Name

Basic Subjects

Frontier of Sustainability Science
(*Remote English lecture combining SSC universities)
Global Environmental Systems I, II
Sustainable Social Systems I, II
Human Systems I, II

Core Subjects

Fieldwork in Sustainability
(International, in Vietnam and other places)
Fieldwork in Sustainability
(Domestic, in Daigo town and other places)
Seminar in Developing Facilitation Capacity I, II

Specialized Subjects

Offered by individual departments

* SSC: Sustainability Science Consortium

Vietnam-Japan University: Master's Program in Climate Change and Development

Vietnam-Japan University (VJU) was opened in September 2016. Ibaraki University is the managing institute for the Master's Program in Climate Change and Development (MCCD) to develop human resources that will take an active role in international academic circles, possessing and applying a high level of knowledge of climate change. Faculty and other staff members of Ibaraki University provide lectures and thesis instruction for VJU students in Hanoi or through online facilities.

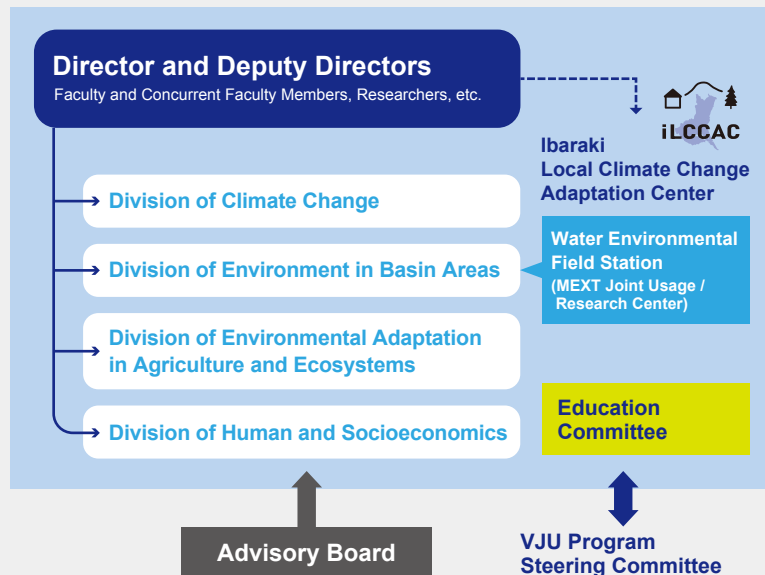
URL: <https://vju.ac.vn/en>



Organization

GLEC is a cross-faculty organization advancing co-creation of global and local environments. Researchers from all faculties and centers gather there.

In addition to faculties in the former Center for Water Environment Studies (CWES) and the Institute for Global Change Adaptation Science (ICAS), faculty and staff who are assigned additional posts promote research and education there.



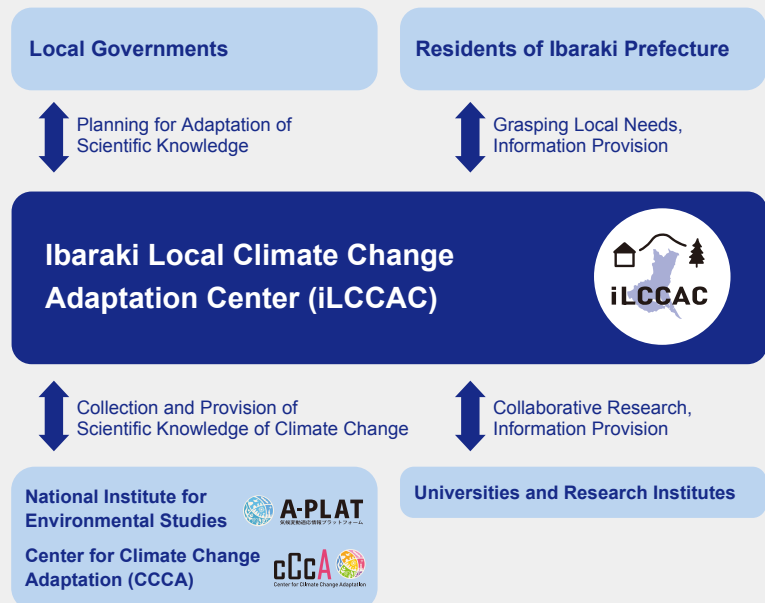
Ibaraki Local Climate Change Adaptation Center

After enforcement of the Climate Change Adaptation Act in 2018, the Ibaraki Local Climate Change Adaptation Center (iLCCAC) was established in 2019. It is the fifth in Japan and the first among universities.

The iLCCAC was established at Ibaraki University on April 1, 2019 as "A site to collect, organize, analyze information of climate change and adaptation and provide technical suggestions" (Act No.13 in Climate Change Adaptation Act) to cope with global warming and climate change.

Cooperating with related organizations in Ibaraki Prefecture, iLCCAC will project impacts of climate change, evaluate adaptation policy, collect local information, support adaptation planning, and cultivate human resources.

URL: <https://www.ilccac.ibaraki.ac.jp>



Access

GLEC has some offices in Ibaraki University.



Mito Campus

2-1-1 Bunkyo, Mito,
310-8512



Mito

Ekinan Satellite 2F
Sangyokaikan, 2-2-35
Sakuragawa, Mito,
310-0801



Water Environmental Field Station

1375 Ohu, Itako,
311-2402



Hitachi Campus

4-12-1 Nakanarusa-
wa-cho, Hitachi,
316-8511



Ami Campus

3-21-1 Chuo,
Ami-machi, Inashiki-gun,
300-0393



GLEC

Global and Local Environment Co-creation Institute, Ibaraki University
E-mail | glec-office@ml.ibaraki.ac.jp HP | <https://www.glec.ibaraki.ac.jp/en/>

