

**KYOTO
UNIVERSITY
IPCC
WEEKS
2019**



FINAL REPORT

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*"What initiatives have we taken for a sustainable society?"**

*"Thank you very much for the very meaningful opportunity".**

大変有意義な機会を、ありがとうございました。発言の機会もいただき、感謝申し上げます。*

*Taken from the comments of young researchers.

ABOUT IPCC WEEKS 2019

This year Kyoto City hosted one of the most important events in the world to talk about climate change and the future of our society. From May 8 to 12, the 49th General Assembly of the Intergovernmental Panel on Climate Change (IPCC) has taken place at the National Kyoto International Conference Center (ICC). IPCC was established in 1988 by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO), as an intergovernmental body tasked with providing comprehensive reports on human-induced climate change, covering the potential impacts of the phenomenon as well as possible strategies for adapting to and mitigating them. Its 49th meeting brought together scientists and government officials from around 500 international organizations and more than 100 countries, to discuss efforts related to the Paris Agreement, which aims to achieve zero greenhouse gas emissions in the second half of this century. The main topic was the methodology used by each country to estimate its greenhouse-gas emissions and removals, a topic that proved to be of considerable interest to scientists, government officials, industry representatives, journalists and citizens from all over the world.

Taking this opportunity, the International Strategy Office (iSO-KU) and the Kyoto University Research Administration Office (KURA) organized Kyoto University IPCC Weeks 2019. This event was designed to present and promote all IPCC side events conducted by our faculty members, researchers, staff and students, providing the space to share our educational research activities and research results on climate change widely to society.

On 11 May 2019, a roundtable on sustainability was held at ICC Kyoto's Annex Hall's with the title: "Dialogue with President Juichi Yamagiwa: How we, as young researchers, want to achieve sustainable development". In this event, fourteen early-career scholars from several academic backgrounds sat down with President Yamagiwa to discuss their research and share their ideas for contributing to a sustainable future. This event was part of the series of activities that took place from April 13 to June 27 with the common objective of introducing Kyoto University's environmental initiatives to the local community.

As a result, IPCC Weeks 2019 was considered by most of participants as an opportunity to share their research and contributions from Kyoto University to tackle climate change countermeasures and their views about building a sustainable society. This event provided the space for young researchers to interact with representatives of different sectors of civil society, receive some feedback from key note speakers currently involved in research and policy making, and to hear about research in climate change from different perspectives.

GREETING FROM KYOTO UNIVERSITY

“Kyoto University states its mission to sustain and develop its historical commitment to academic freedom and to pursue harmonious coexistence within the human and ecological community on this planet”.

Source: Kyoto University Mission statement.

Since its founding over 100 years ago, Kyoto University pursues excellence in higher education and academic research looking toward tackling complex global problems and contributing to a peaceful co-existence. Witness of climate change, global warming and other current global challenges that affect the world as we know it, it is essential taking actions to promote a positive change in our society toward a sustainable future.

For this reason, Kyoto University assumes its role enhancing the development of scientific, technical and socio-economic knowledge with consideration of climate change risk, environmental and socio-economic impact and adaptation of counterpart measurements. In this context, Kyoto University IPCC Weeks 2019 is an opportunity to share the findings of the advancements and contributions generated in our University to the world.

This is the Final Report of the activities of Kyoto University IPCC Weeks 2019, open to the public from April 13 to June 27 in Kyoto. This report aims to provide a summary of the knowledge and reflections generously shared from our students, young researchers, faculty and staff members as initiatives to contribute toward the sustainable future of humanity.

Yasuyuki Kono

Vice-President for International Strategy
Director of the International Strategy Office (ISO-KU)
Professor at the Research Department of Environmental
Coexistence - Center for Southeast Asian Studies (CSEAS)
Kyoto University



ACKNOWLEDGEMENTS

Kyoto University would like to take this opportunity to express its profound gratitude to the institutions and individuals who supported the Kyoto University IPCC Weeks 2019 filled with energy, great motivation and with a generous spirit.

In special, Kyoto University expresses its gratitude to the Municipal Government of Kyoto for its support in the organization of this event, and in the promotion of dialogue between its early-career researchers and the symposium audience.

Thanks to the institutions that make possible Kyoto University IPCC Weeks 2019:

City of Kyoto, Environmental Policy Bureau, Global Warming Countermeasures Office

(京都市環境政策局地球温暖化対策室) ;

Ministry of the Environment, Global Environment Bureau,

General Affairs Division Research and Research Office

(環境省地球環境局総務課研究調査室) ;

Ministry of Foreign Affairs, International Cooperation Bureau, Climate Change Division

(外務省国際協力局気候変動課) ;

Ministry of Agriculture, Forestry and Fisheries, Environmental Policy Office

(農林水産省環境政策室) ;

Ministry of Education, Culture, Sports, Science and Technology,

“Integrated Climate Model Advanced Research Program”

(文部科学省「統合的気候モデル高度化研究プログラム」); and

Japan Society of Civil Engineers, Committee on Hydrosience and Hydraulic Engineering,

Subcommittee on Global Climate Change Adaptation Research,

(土木学会水工学委員会グローバル気候変動適応研究推進小委員会) .

Japan - ASEAN Science, Technology and Innovation Platform (JASTIP)

A special appreciation for our roundtable speakers: Mr. Takeshi Shimotsuma (Supervising Director of Global Environment and Energy Policy from the Global Environment Policy Bureau at City of Kyoto) ; and Associate Professor Masashi Taketani (Institute of Economic Research, Kyoto University).

As well, Kyoto University wants to express its profound appreciation to the contribution of all organizers of the events that make possible Kyoto University IPCC Weeks 2019.

Graduate School of Agriculture (農学研究科)

Graduate School of Asian and African Area Studies (アジア・アフリカ地域研究研究科)

Graduate School of Global Environment Studies (地球環境学堂)

Research Institute for Advanced Economics, Institute of Economic Research

(経済研究所・先端政策分析研究センター)

Disaster Prevention Research Institute (防災研究所)

Center for Southeast Asian Studies (東南アジア地域研究研究所)

Field Science Education Research Center (フィールド科学教育研究センター)

École de Kyodai (エコ〜ど京大)

Finally, a recognition to the dedication of the participants and we look forward the next opportunity to collaborate together.

PROGRAM FOR KYOTO UNIVERSITY IPCC WEEKS 2019

The Program for Kyoto University IPCC Weeks 2019 included one central activity and a series of side events all open to the public. Following, a list of the activities.

3.1 MAIN EVENT

Title: “Dialogue with President Juichi Yamagiwa: How we, as young researchers, want to achieve sustainable development”

Date and time: May 11, 2019 (Saturday) from 16:00–18:00

Venue: Kyoto International Conference Center Annex Hall

3.2 SIDE EVENTS

1. “How should engineers and researchers defeat serious water disasters by Climate Change: Let’s think about adaptation to heavy water disasters”.

April 13, Saturday 13:00-17:30; Kihada Hall Kyoto University Uji campus

2. “Japanese-style Garden vs. Natural Forest: Fake Nature?”.

April 21, Sunday 13:30-16:00 (Nanzenji) ; April 26, Friday 18:30-20:30 (Mumokuteki Hall) ; May 11, Saturday 10:00-May 12, Sunday 15:30 (Ashiu Forest Research Station)

3. “École de Kyodai Summer Campaign: Let’s enjoy each event and change your life style!”.

May 7, Tuesday - May 31, Friday (weekdays 11:00-17:00 only); “Cafe Renais” Kyoto University Yoshida campus

4. “Prospects and pitfalls of transboundary climate change responses. What are the challenges and opportunities for integrated approaches to climate change?”.

May 7, Tuesday 16:00-18:00; Inamori Memorial Hall (Large Meeting Room), 3rd Floor, Inamori Foundation Memorial Building, Kyoto University

5. “Area Studies and Sustainable Development Goals. Viewing SDGs from Asian and African perspectives”.

May 8, Wednesday 13:30 -18:00; Inamori Memorial Hall (Large Meeting Room) , 3rd Floor, Inamori Foundation Memorial Building, Kyoto University

6. “Let’s find a balanced utilization of resources for our sustainable future. The case of Myanmar”.

May 10, Friday 10:00-17:00; Kyoto University Research Administration Office 1F Seminar room 1

7. “Global Landscapes Forum Kyoto 2019: Climate, Landscapes and Lifestyles -It is not too late”.

May 13, Monday 9:00-18:00; Kyoto International Conference Center

8. “International Symposium on Agricultural Technology Responding to Climate Change “Global-scale Climate Change and Rural-fishing villages”.

May 13, Monday - May 15, Wednesday; Biwako Hall Center for the Performing Arts Theatre.

9. Seminar for International Climate Change Career & Networking.

May 13, Monday 15:30-18:00; Research Bldg No 2, Kyoto University Yoshida campus

10. “Seminar for International Climate Change Career & Networking”.

May 14, Tuesday 18:00-19:00; International Science Innovation Building, Kyoto University Yoshida campus

11. “Workshop on Climate Change and Energy. Touch the cutting edge of policy research on climate change and energy”.

May 17, Friday, 10:30-12:00; Kyoto University, Clock Tower Centennial Hall 2F

12. “Industrial Day 2019. Exchange Meeting among Academia, Industry and Government: Strengthening Resilience to climate change”.

May 24, Friday 13:30-17:10; Campus Plaza Kyoto

13. “Symposium on Climate Change Impacts and Adaptation in the study of Hydro-Meteorological Hazards and Water Resources. What is the “Paradigm Shift” ? We won’t regret it!”.

May 24, Friday 13:30-17:10; Youth Education National Olympics Memorial Youth Center

14. “International Workshop on Visions of a Low-carbon and Resilient Society. Let’s explore frontiers of mitigation and adaptation”.

June 27, Thursday 13:30-14:30; International Conference Hall, Clock Tower Centennial Hall

15. Kyoto University Sustainable Symposium. The sustainability of natural resources and energy”.

June 27, Thursday from 10:00; International Conference Hall, Clock Tower Centennial Hall

SUMMARY OF IPCC ROUNDTABLE DISCUSSION WITH PRESIDENT YAMAGIWA

The roundtable discussion of young researchers with President Yamagiwa was held on May 11, 2019 at the ICC Kyoto's Annex Hall with the title: "Dialogue with President Juichi Yamagiwa: How we, as young researchers, want to achieve sustainable development".

This activity opened the dialogue among young researchers from several disciplines to share their perspectives about sustainable future. Fourteen early-career scholars from several academic backgrounds discussed with President Yamagiwa their research and share their ideas for contributing to a sustainable future.

The discussion was enriched by the comments of our guest keynote speakers Mr. Takeshi Shimotsuma (Supervising Director of Global Environment and Energy Policy from the Global Environment Policy Bureau at City of Kyoto), and Associate Professor Masashi Taketani specialist in environmental economy and policy (Kyoto University's Institute of Economic Research KIER).

From the perspective of iSO-KU and KURA as organizers of the Roundtable Discussion, we wanted to hear about the experience of young researchers and for this purpose we run a survey after the event. Most of young researchers participated because they have interest to hear from others what is happening from different disciplines. The opinion of President Yamagiwa was high interest for the participants. They feel highly engaged with their research topics and keen to contribute from their perspective for sustainable development. Although, most of the young researchers concur that one of the most impactful comment was "What initiatives have we taken for a sustainable society?".

Some young researchers said that they feel inspired and motivated to share and discuss their research with peers from other disciplines and enrich themselves from their opinions. They also appreciate the opportunity to hear about climate change and sustainable development from other perspectives.



Discussion with President Yamagiwa



Audience of IPCC roundtable with Young Researchers

SUMMARY OF YOUNG RESEARCHERS' PRESENTATIONS

PRESENTATION 1:

“Hydrogen production with Solar and Biomass: An option for future energy sustainability”.

Presenter: Shutaro Takeda

Affiliation: Graduate School of Advanced Integrated Studies in Human Survivability

Summary:

This presentation is about the future society of making hydrogen from the forest and the sun.

The forest is the root of human civilization. Since Homo Erectus discovered fire 500,000 years ago, it can be said that the energy use by burning of the biomass resource of this forest has supported the development of the kind of social civilization of the human being.

However, for 500,000 years since then, humanity has not fundamentally changed the Policy of using forests. But is that good? If a plant that gasifies biomass resources obtained from forests by the heat of sunlight and generates hydrogen and recovers carbon dioxide is realized, it will be able to live in harmony with nature, a source of life and a carbon sink, isn't it possible to build a sustainable urban civilization? Make hydrogen from the forest and the sun.

According to my estimation, if energy is generated in this plant, it is possible to achieve a negative emission of -0.868 kg / kWh as IPCC standard carbon dioxide emission in the life cycle. The presenter suggested that this can be a new policy of using the forest suitable for 21st century human civilization.

The slide features a central diagram showing a process where biomass (バイオマス) and solar energy (太陽光) are used to produce hydrogen (水素). The diagram includes labels for CO2 emissions and a note about achieving a negative emission of -0.868 kg/kWh. The slide also includes the presenter's name, affiliation, and keywords: #Water Society, #Carbon Negative, #Biomass, #Hydrogen, #Biomass, #Carbon, #Sustainability.

PRESENTATION 2:

“Sustainable development of marine renewable energies considering the impact of climate change”.

Presenter: Bahareh Kamranzad

Affiliation: Hakubi Center for Advanced Research

Summary:

Excessive usage of fossil fuels has caused green-house gas emission, decreasing the reserves of carbon and geopolitics wrangling over the control of oil and gas reserves causing conflicts in last decades in areas with vast resources. Thus, an alternative solution is the development of renewable energies.

Currently, 71% of earth's surface is covered by water and oceans hold more than 96% of all earth's water. Plus, two thirds of the all population lives within 100 km of a coastline. In this scenario, marine renewable energies can be a good solution to provide part of the energy demand. However, these resources are affected by climate change so it is important to investigate about its impact for the future. In July 2018, Government of Japan approved a new basic energy plan committed to increase the role of renewable energy resources from 15% (2016) to 22-24% (2030) . Still, 56% will be provided by fossil fuels (and 20-22% from nuclear).

More than 70% of the energy supply investment in the world is government-driven (while 30% is market- driven), so our energy destiny rests with governments. In this circumstance, our mission is to perform research on the available resources, reducing the uncertainties, and

disseminate the results, especially for government-related sectors and decision-makers to notify the available and potential green and clean sources of energy and advantages and profits for a future sustainable development.

The slide features a diagram of a marine renewable energy system. It shows offshore wind turbines, wave energy converters, and a cable-to-shore system connected to an operations control center on land. The diagram also includes labels for offshore substations and gas. The slide includes the presenter's name, affiliation, and keywords: #Renewable energy, #wave energy, #sustainability, #climate change, #future projections, #coastal areas.

PRESENTATION 3:

“Greenhouse Gas Mitigation towards low-carbon society”.

Presenter: Myo Min Win

Affiliation: Graduate School of Engineering-Environment Preservation Research Center

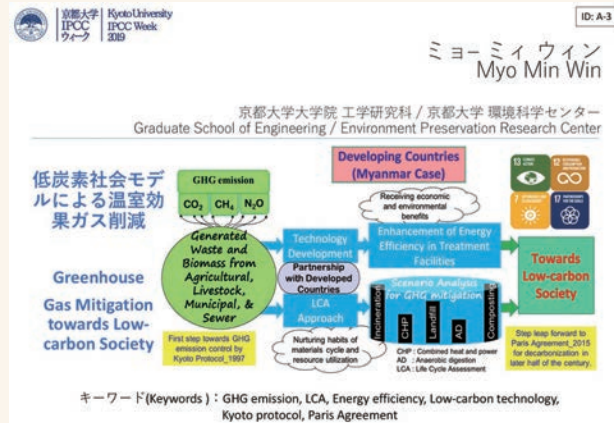
Summary:

This research is about the reduction of GHG emissions from generated waste and biomasses and present the case of Myanmar as an example. This study focuses on the waste management sector and the GHGs emissions in Myanmar, a country experiencing skyrocketed economic development.

There are several sources which generates waste and biomasses such as from agriculture, livestock, municipal, and sewage and each emits significant amount of GHGs due to open burning, improper treatment and unsanitary disposal behaviors, etc. This research proposes that it is possible to make use of these resources effectively by generating electric power from waste and biomass resources.

There are two approaches for the management of generated waste. One approach is the Life Cycle Assessment (LCA) for generated waste and biomasses by utilizing different waste treatment technologies such as incineration, CHP, landfill, AD and composting. The second approach focuses on specific technology development on gasification of the generated waste and biomasses to enhance energy efficiency by gas engine electric power generation as an alternative GHG emission countermeasure. In this scenario, it is possible to propose appropriate options to mitigate GHG emissions. It is the intention of this research to share knowledge and technology

know-how in my homeland Myanmar as a contribution towards a low-carbon society.



PRESENTATION 4:

“Sustainable transitions in developing countries: Cases from India”.

Presenter: Abhishek Kodovayur Venkitaraman

Affiliation: Graduate School of Global Environmental Studies

Summary:

Sustainability transitions are long-term, multi-dimensional, and fundamental transformation processes which establish socio-technical systems for production and consumption. In developing countries, there are barriers toward sustainable transitions such as major institutional and political barriers to transition and upscaling. Regimes in developing countries like India have a higher degree of instability, informality and internal tensions.

This presentation focuses in three cases of sustainable transitions in Delhi. First case is Delhi Metro Rail, which opened its first corridor in 2002. Today, the network consists of 8 regular routes running 343 kilometers and serving 250 stations. As per the Environmental Portal of India, Delhi Metro shifted from private to public transport among residents to reduce emissions. Second case is the shift toward production of renewable energy. Today, India is one of the largest producers of energy from renewable sources (World Bank ranked 4 in renewable capacity growth). At present, Delhi Metro Rail Corporation uses 60 % solar energy. It plans to run all its operations on solar energy by 2021. Third case is the shift from petrol and diesel to Compressed Natural Gas (CNG) in all public transport as mandated by the Delhi Government from 2002. Similar to Kyoto city which is using biodiesel since 1997. It contributes to the reduction of Carbon Dioxide by 2600

tons per year.

In conclusion, sustainable transitions take a long time in developing countries like India. As a citizen of a developing nation, I believe that global efforts shall be aligned in action research toward sustainable development.



PRESENTATION 5:

“How can we contribute to solve future water scarcity”.

Presenter: Daiya Shiojiri

Affiliation: Graduate School of Engineering

Summary:

This research aims to clarify the complexity of the water circulation system by analyzing the water cycle on a global scale. This analysis aims to find out how much water is available in the world and where, and whether it would be enough for a sustainable future. Currently, groundwater keeps decreasing. There are shortages in China, India, and the United States. As these three countries account for one-third of the world's grain production, groundwater depletion may become a fatal problem.

An analysis of the past world's water shortages show that they are caused by excess intake from groundwater. Once it takes place, land subsidence will occur and it will never return to its original condition. As a result, it has been reported that the ground sunk by more than 1 m per year. It is expected that current world's population (7.7) becomes 9.8 billion by 2050, and historically the world's water consumption has increased twice as fast as population. Thus, it is expected that if population doubles, need for water quadruples.

In Japan the rate of food self-sufficiency is about 40%. Although, a large amount of water is required for food production, domestic water is about 10% of total intake, and agricultural water is about 70%. For example, 1.8 tons of water are required to produce 1 kg of corn used to feed cattle, which needs 20,000 tons of water. Thus, this research

is about placing sensors on rice fields and sugar cane fields to observe groundwater and meteorological data and monitor water circulation. With this data, it is possible to develop tools to diagnose the effects of rain, intake and groundwater, etc. in an integrated manner to contribute to design measures against the serious water shortage in the future.

The slide features the following content:

- Header:** Kyoto University IPCC Week 2019, ID: A-5, 塩尻 大也 (Daiya Shiojiri), 京都大学大学院 工学研究科 (Graduate School of Engineering).
- Main Title:** 将来の水不足問題 解決へ どう貢献できるか (How can we contribute to solve future water scarcity?).
- Visuals:** A central image shows a field with various sensors labeled: 日射計 (Solar radiation meter), 雨量計 (Rain gauge), 土壌水分センサー (Soil moisture sensor), 地下水位計 (Groundwater level meter), and 温度・湿度計 (Temperature and humidity meter).
- Keywords:** #水不足, #水循環, #水需要, #陸面過程 (Keywords: #Water shortage, #Water cycle, #Water demand, #Land surface process).

PRESENTATION 6:

“Future impacts of Climate Change on typhoons over Japan”.

Presenter: Sridhara Nayak

Affiliation: Disaster Prevention Research Institute

Summary:

This presentation is about the dangerous typhoon Jebi (typhoon #21, 2018) considered as the strongest typhoon to strike Japan since 1993. Typhoon Jebi made its landfall last year over western Japan and caused a lot of damage estimated in about 3.4 USD

This typhoon brought life-threatening high winds and heavy rainfalls to the landfall areas.

This research found that this typhoon has been possibly impacted by climate change compared to the previous typhoon that made landfall in past years over same region.

This research also highlights that similar typhoons may occur in future due to warming climate which is increasing, making the effects of the typhoon stronger and a severe meaning a threat to human life and properties.

In conclusion, it is required to adapt to the situation, and build potentially more resilient societies to face the typhoon related disasters. It is important to help people to actively participate in the disaster risk reduction activities and make policies to improve the household resilience toward the danger of natural disasters.

The slide features the following content:

- Header:** Kyoto University IPCC Week 2019, ID: A-6, スリダラ ナヤック (Sridhara NAYAK), 京都大学 防災研究所 (Disaster Prevention Research Institute).
- Main Title:** 日本に上陸する台風に対する気候変動の将来影響 (Future Impacts of Climate Change on Typhoons over Japan).
- Visuals:**
 - A vertical bar chart shows typhoon damage in Japan from 1934 to 2018: 1934 (\$300M), 1961 (\$500M), 1987 (\$366M), 2018 (\$3.4B).
 - Maps compare Typhoon Nancy (1961 #18), Typhoon Jebi (2018 #21), and Typhoon Nancy in future climate (with increased T, SST, Sea P).
 - Maps show 12-hour accumulated precipitation and maximum wind (6-hour of landfall) with increases of >33% and >25% respectively.
 - A note mentions: "Damage due to strong winds from Typhoon Jebi (Photo: AFP) (© ISS) (www.chonshu-horizon.com)".
- Keywords:** #台風, #気候変動, #日本, #将来影響 (Keywords: #Typhoon, #Climate Change, #Japan, #Future Impact).
- Additional Info:** Dynamic and Thermodynamic analysis e.g. Translation speed, Available Energy etc.

PRESENTATION 7:

“Climate targets and developing countries: discussing the Indian context”.

Presenter: Sonam Sahu

Affiliation: Graduate School of Global Environmental Studies

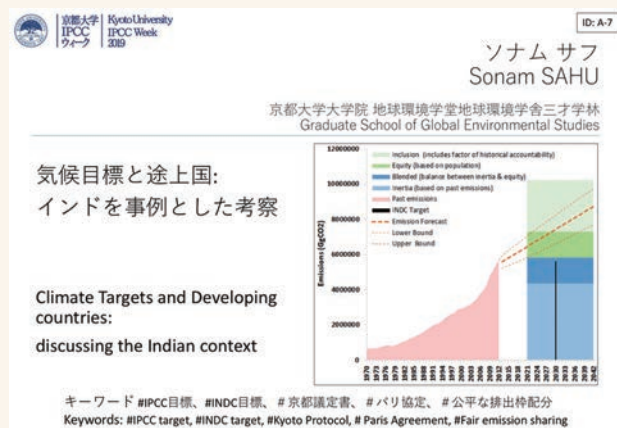
Summary:

This research aims to estimate the measure of reduction required in India to meet the climate targets. The national climate target is defined in India's Intended Nationally Determined Contribution (INDC) while global target is defined by the Paris Agreement. According to the national target, India aims a 33 to 35% reduction in GHG intensity by the year 2030. India's economy is expected to grow 7% between 2005 and 2030 projecting the emissions in 2030 to be 5.6 x M Gg.

The IPCC targets are more complex. For limiting temperature rise to 2 degrees, there is a limited emission budget which is expected to be strategically distributed among countries. There are several patterns of sharing principles for an honest distribution. In this research, four sharing principles are used: Inertia, based on the past emissions of countries; Equity, based on population per country; Blended, which is a balance of inertia and equity; and Inclusion which is a factor of historical accountability of countries.

India's emission forecast was compared with the climate targets and it can be observed that its emissions are forecasted to be higher than the INDC target as well as inertia, equity and blended distributions. Only the Inclusion distribution gives advantage to India. Furthermore,

Blended distribution target and INDC target are very close. This study is important because there is a strong need to improve mitigation and adaptation policies in India.



PRESENTATION 8:

“Total sea level rise impact on endangered languages”.

Presenter: Audrius Sabunas

Affiliation: Graduate School of Global Engineering-Disaster Research Prevention Institute

Summary:

This research is about the link between sea level rise and the extinction of languages in the Pacific Region. It focuses on Oceania comprised by Micronesia, Melanesia and Polynesia. A significant proportion of islands in this region are susceptible to rising sea levels due to low-lying coastal areas, especially coral atolls. The total sea level rise happens mostly due to sea level rise, as well as storm surge and wave run-up.

Oceania is known for its cultural diversity and is home to 6 million people and at least 90 endangered languages. The aforementioned region is perhaps the most vulnerable to the rising sea levels. In this situation, there is a causal link between climate change and language extinction. As the coastal areas get inundated and the frequency increases due to climate change, then, their land gets submerged and affects the economy also forcing displacement of population. This in turn threatens local cultures and languages.

So far, this research found that in Fiji, most of forced relocations occur in the low-lying coasts with high population density where main businesses are situated. As the time lapses, the number of the displaced people in Fiji is expected to increase. Additionally, it is likely that total sea level rise will have an impact on all Micronesian sub-region languages, as well as many other in the Oceanian region. This research estimates that climate change may speed up the disappearance of about 40 languages.



PRESENTATION 9:

“Our challenges for biodiversity conservation”.

Presenter: Shogoro Fujiki (CEO for Biome Inc. From 2017)

Affiliation: Graduate School of Agriculture

Summary:

This presentation is about environmental issues, especially the decline in biodiversity and engaged in the development of biodiversity quantification technology using satellite images. Mr. Fujiki thinks that working on environmental protection as a venture company involves such a preconception and risk but the risk is too small compared to the risk that humanity is carrying right now.

As a CEO for Biome Inc., Mr. Fujiki presents the challenge of the company as establishing biodiversity conservation as a business by turning the biological distribution information around the world into big data. Biome Inc. builds the infrastructure to enable stakeholders to carry out biodiversity conservation. With 8 employees highly motivated, they develop a smartphone application named “Biome” which is similar to a popular game and let people interact and have fun as promoting environmental conservation.

Mr. Fujiki said: “My message today is that environmental conservation may be sublime and too beautiful but isn't the essence of environmental problems in greed? [...] If you do not include the environmental protection paradigm there, it may not be possible to move forward with conservation. Mankind has no future, if preserving the environment does not contribute with a society that only makes money. That is why private companies have to work toward environmental protection for

the future. [...] What are we going to do when all we try had failed?”. This question invites to the reflection if our society is ready to carry the risk, and if it is ready to work in a united manner to create the mainstream of the era.

京都大学 Kyoto University
IPCC Week 2019

藤木 庄五郎
Shogoro Fujiki
株式会社バイオーム
京都大学大学院 農学研究科OB
Biome, Inc.

生物多様性保全に向けた
京大発ベンチャーの
取り組み

Our challenge for
biodiversity conservation

キーワード: #生物多様性, #ベンチャー, #ビッグデータ, #人工知能, #生態学, #スマホアプリ
Keywords: #Biodiversity, #Startup, #Big data, #Platform, #AI, #Ecology, #Smartphone application

PRESENTATION 10:

“Empowering Japanese Language Learners through Education for Sustainable Development (ESD)”.

Presenter: Joshua John Jodoin / Affiliation: Graduate School of Global Environmental Studies

Summary:

Mr. Jodoin is passionate about how to empower Japanese university students with environmental values, beliefs, and norms as well as offer them the language skills to take their understandings beyond Japan. He considers that living in our relative comfort in the developed world, has come at a price on our environment and feels an obligation to work towards mitigating the footprint as 7.6 billion people rely on our efforts. In his presentation, Mr. Jodoin proposed two ideas. First idea is about making an impact on climate change. He proposes that if anyone is concerned about the next generation then they should start a conversation: “Dialogue with others, especially your community leaders and politicians, about climate change and put this issue on the agenda. Because it is then, when enough pressure builds, that we see effective policy and societal transformations [...] As an educator, I see it as my duty to have these discussions with students and colleagues as well as promote more disciplines in higher education to build climate change into their curriculum, what we in ESD call mainstreaming. [...] So, talk to people, talk to everyone, and talk about it until you see the necessary changes in your community”.

His second idea is about Japan as a reference for the rest of the world as a holder of research institutions, sophisticated technologies, cultural insights into nature and its effort to teach English as a foreign language

towards global integration. In conclusion, Mr. Jodoin considers language, multidisciplinary dialogue and cultural education as ways to bridge the divide in a globalizing world and find the solutions to problems such as climate change.

京都大学 Kyoto University
IPCC Week 2019

ジョシュワ ジョン ジョーダン
Joshua John Jodoin
京都大学大学院 地球環境学堂地球環境学舎三才学林
Graduate School of Global Environmental Studies

ESDによる英語学習者への
エンパワメント

Empowering Japanese
Language Learners through
Education for Sustainable
Development (ESD)

キーワード: #English For Sustainable Development(ESD) #English as a Foreign Language (EFL) #Sustainable Development (SD) #Higher Education Institutions (HEIs)

PRESENTATION 11:

“Kyoto University as a supportive community role model”.

Presenter: Ayame Ishida

Affiliation: Graduate School of Advanced Integrated Studies in Human Survivability

Summary:

The research topic is about Kyoto University as a supportive community role model.

Ms. Ishida proposes that while many researchers from Kyoto University have received noble prizes and other honorable statuses, Kyoto University can do better in making positive action toward social problems. As a leading University, Kyoto University has a responsibility to be a role model for other Universities.

Ms. Ishida believes that the universities and other educational institutions can take a bigger role in making positive actions. For example, they could promote more events on campus to be aware of waste that our community produces. The researcher considers that constant reminder could lead to engraving the value to the community members.

Ms. Ishida considers that additionally, the university could emphasize its support to community services. For example, students could use a number of hours in community services for credits to promote social involvement in the community such as in local schools, elderly homes, nature conservation, etc. This kind of activities could help Kyoto.

Ms. Ishida message is: “University community members to think in a bigger scale as well. The values gained from these experiences could help researchers”. On her presentation, she proposes that researchers

could be more aware of the demands and problems in the society that need to be researched or solved.

The slide features the Kyoto University logo and 'IPCC Week 2019' branding. The presenter's name '石田 菫 ISHIDA Ayame' and affiliation '京都大学大学院 総合生存学館 Graduate School of Advanced Integrated Studies in Human Survivability' are listed. The main title is '京都大学をコミュニティ支援のロールモデル大学に' (Making Kyoto University a Role Model University for Community Support). A central diagram shows 'Kyoto University' at the center, surrounded by five interconnected circles: 'Other Universities', 'Citizens', 'Sustainable', 'Companies', and 'Government'. The subtitle is 'Kyoto University as a Supportive Community Role Model'. Keywords include #community, #education, #environmentalproblems, #globalwarming, #sustainablecommunity, #sciencecommunication, #spreadingawareness, and #solvingtogether.

PRESENTATION 12:

“Health issues related to climate change and disasters”.

Presenter: Yoshitaka Nishikawa

Affiliation: Graduate School of Medicine

Summary:

This presentation is about direct and indirect consequences of climate change and disasters in health issues. Mr. Nishikawa is a physician in Kyoto and working in Fukushima Prefecture and works as a graduate student in the laboratory of health informatics.

About the direct effects of weather change, it includes rising temperatures, storms, droughts, heat waves and heavy snow. If it is too hot, it can cause dehydration, abnormal rain and snow that leads directly to injury. It can also lead to weather relevant disasters such as drought and tsunami. In this situation, physical and also mental effects are expected.

About the indirect effects, the rise in temperature and spread of tropical areas increases the risk for dengue and other transmissible diseases. In 2014, there were people infected with dengue fever in Japan. Also, ultraviolet light increases the risk of malignant melanoma, which is a type of skin cancer. There is also risk of malnutrition if the crops are poor.

Other indirect effects are related to the evacuation risks as it divides communities and families creating social isolation, and high risk for the elders. In February 2014, Japan had a record heavy snowfall. The roads were closed and in the affected areas of Fukushima Prefecture, medical facilities were closed due to evacuation. Hemodialysis patients who need to go to the hospital 2-3 times a week had to go over the mountain and spend about 4 hours by ambulance and with the cooperation of people

in the area to go to the medical facilities as the weather affects the access to medical care. Furthermore, climate change tends to reduce jobs in rural areas as the weather is less predictable. Then, people may migrate. Migration can cause unemployment exposing people to health risk. Also, as immigrants increase, their health is also a public health challenge.

The slide features the Kyoto University logo and 'IPCC Week 2019' branding. The presenter's name '西川佳孝 Yoshitaka Nishikawa' and affiliation '京都大学大学院 医学研究科 Graduate School of Medicine' are listed. The main title is '気候変動・災害と健康影響' (Health Issues Related to Climate Change and Disasters). A central diagram shows 'Health issues related to climate change and disasters' at the center, surrounded by six interconnected boxes: '気温の変化 Temperature change', '気象災害 Weather related disasters', '気候関連疾患 Climate sensitive diseases', '食料安全保障と栄養不足 Food security & undernutrition', '医療アクセス Health Care Access', and '労働衛生 Occupational Health'. The subtitle is 'Health issues related to climate change and disasters'. Keywords include #climatechange, #health, #healthcare, and #disaster.

PRESENTATION 13:

“Let’s be aware of the impact of climate change in developing countries: retreat of glaciers in Kryrgyzstan”.

Presenter: Chihiro Hiraoka

Affiliation: Graduate School of Engineering

Summary:

The topic of this research is about analysis of melting glaciers in Kyrgyz Republic using a model that reproduces the water cycle. Glaciers are a very valuable source of water for Central Asia with low precipitation where most of water use depends on the glacial melting. This melting water allows people to live the summer season when it doesn't rain and it evaporates soon after it falls. The glacier for Central Asia is quite similar to the Biwa lake spring water for Kyoto citizens.

This research is about glaciers in the Tianshan Mountains, which are receding 8 meters each year under the influence of global warming. In Central Asia, the glaciers function as water resources and as beautiful tourism resources. The Kyrgyz people keep their traditional lifestyle in harmony with nature, so, their lifestyle is not the cause of global warming today.

Ms. Hiraoka aims to make understandable that people in countries that are not responsible for global warming are currently receiving the damage directly and quotes as follows: “Kyrgyz is a developing country that is not familiar with Kyoto citizens, but there are many problems with climate change that cannot be overlooked. However, because it is a developing country, it cannot set the time to solve it, and its ability

to transmit its current status is scarce. Thus, my research aims to raise awareness in developed countries to know the unreasonable present requirements that developing countries are suffering from climate change”.

京都大学 Kyoto University
IPCC Week 2019

ID: B-4

平岡 ちひろ
Chihiro HIRAOKA
京都大学大学院 工学研究科
Graduate School of Engineering

途上国にこそ、気候変動の深刻な被害がある
- キルギスの氷河後退 -

天山山脈
標高4107m

Let's be aware of the impact of climate change in developing countries
- Retreat of glaciers in Kyrgyzstan -

キーワード：#水不足, #中央アジア, #キルギス共和国, #氷河, #後退, #8m
Keywords: #WaterShortage, #CentralAsia, #Kyrgyzstan, #Glacier, #retreat, #8m

PRESENTATION 14:

“Let’s discuss discomfort points toward SDGs”.

Presenter: Yuta Ando

Affiliation: Graduate School of Engineering- École de Kyodai

Summary:

This presentation is about a perspective to analyze climate change and how some researchers are not content with the scope of SDG's as climate change is one of the easy-to-understand and serious environmental problems: “Nowadays, environmental problems are intricately linked to many social problems, and as represented by SDGs, many people pay attention to the word “sustainability”, and everyone seems to be working to solve it”.

Mr. Ando has been involved in environmental and sustainability initiatives at Kyoto University since he was an undergraduate student at École de Kyodai (エコ〜ど京大). His presentation proposes that University research is increasingly being evaluated in terms of sustainability and SDGs but basic research that do not aim for offering a direct problem solution may not be as valued in the context of SDGs. Mr. Ando has been studying bio-engineering using stem cells in a doctoral program. He keeps hearing that that the concept of sustainability and SDGs seems to be across all fields, but he considers that it is in fact unfair to evaluate it as standard and classify university research in this manner.

Mr. Ando affirms that researchers in Kyoto University may find themselves “uncomfortable” regarding to SDGs. This “discomfort” seems to be attributed to the fact that SDGs label social issues with 17 goals, but

people have different ways of understanding and interpreting SDGs. His presentation invites to the reflection about: what is the meaning of sustainability and how long do we want it to last. He proposes to discuss such sustainability issues and SDGs in the light of “contributing to the harmonious coexistence of the earth and society” written in the philosophy of Kyoto University.

京都大学 Kyoto University
IPCC Week 2019

ID: B-5

安藤 悠太
Yuta ANDO
京都大学大学院 工学研究科 / エコ〜ど京大
Graduate School of Engineering / École de Kyodai

そもそも「持続可能性」とは何なのか?
What is "sustainability" at all?
持続可能な社会に向けた大学や研究の役割は?
How can academia achieve sustainable society?

SDGsに覚えてしまう
「違和感」を議論する

Let's Discuss
“Discomfort” Points
towards SDGs

キーワード：#SDGs, #持続可能性, #違和感, #京都大学
Keywords: #SDGs, #Sustainability, #Discomfort, #Kyoto University

SUMMARY OF IPCC WEEKS 2019 SIDE EVENTS

This is a brief overview of the side events as part of Kyoto University IPCC Weeks 2019.

1. "How should engineers and researchers defeat serious water disasters by Climate Change: Let's think about adaptation to heavy water disasters".

April 13, Saturday 13:00-17:30; Kihada Hall Kyoto University Uji campus

The workshop will provide an opportunity to discuss direction of research and innovation for adaptation to heavy water related disasters such as floods and storm surge due to Climate Change. Let's think how to get along with energy issues.

Organizer: The Committee on Hydrosience and Hydraulic Engineering, Subcommittee on GLOcal Climate change Adaptation Research (GLOCAR) , JSCE

Link: <http://committees.jsce.or.jp/hydraulic>

2. "Japanese-style Garden vs. Natural Forest: Fake Nature?"

April 21, Sunday 13:30-16:00 (Nanzenji) ; April 26, Friday 18:30-20:30 (Mumokuteki Hall) ; May 11, Saturday 10:00-May 12, Sunday 15:30 (Ashiu Forest Research Station)

Nature is common resources for all life. Let's think about the relationship between nature and us. With the students of Kyoto University, we will visit the Japanese-style gardens and natural forest, Ashiu Experimental Forest.

Organizer: Naoko Tokuchi. Field Science Education and Research Center, Kyoto University

Link: <http://fserc.kyoto-u.ac.jp>

3. "École dé Kyodai Summer Campaign: Let's enjoy each event and change your life style!".

May 7, Tuesday - May 31, Friday (weekdays 11:00-17:00 only) ; "Cafe Renais" Kyoto University Yoshida campus

This is an environment educational event ' Summer seminar'. There are some events, like open lab, Gion festival project or Clothes repair event with Patagonia. Let's enjoy each event and change your life style!

Organizer: École dé Kyodai

Link: <https://eco.kyoto-u.ac.jp>

4. "Prospects and pitfalls of transboundary climate change responses. What are the challenges and opportunities for integrated approaches to climate change?".

May 7, Tuesday 16:00-18:00; Inamori Memorial Hall (Large Meeting Room) , 3rd Floor, Inamori Foundation Memorial Building, Kyoto University

The workshop entails a lively discussion among climate change researchers and adaptation practitioners as they reflect on the challenges and possibilities for integrative responses to climate change across multiple scales.

Organizer: Kimberley Thomas, Center for Southeast Asian Studies, Kyoto University

Link: <http://www.kyoto.cseas.kyoto-u.ac.jp>

5. "Area Studies and Sustainable Development Goals. Viewing SDGs from Asian and African perspectives".

May 8, Wednesday 13:30 -18:00; Inamori Memorial Hall (Large Meeting Room) , 3rd Floor, Inamori Foundation Memorial Building, Kyoto University

The SDGs are important issues that the world currently needs to tackle. However, experience has shown that the thinking and beliefs of people in the modern world cannot be changed solely by technology or policies and therefore successfully implementing various SDGs remains a difficult challenge. Area studies, in which Kyoto University has a long history of conducting fieldwork in Asia and Africa, has investigated such issues that have proven to be extremely difficult to solve both technologically and politically. This symposium focuses on a wide range of studies that transcend the natural sciences and humanities/social sciences, including those area studies which directly contribute to the successful implementation of SDGs and also those area studies which question the validity of certain SDGs. In the SDGs encompassing the philosophy that "no one will be left behind." This symposium is expected to provide important insights into the important target regions of Asia and Africa.

Organizer: Takuro Furusawa. Graduate School of Asian and African Area Studies , Center for Southeast Asian Studies, Kyoto University
Link: <https://sites.google.com/view/asafas-sdgs2019>

6. "Let's find a balanced utilization of resources for our sustainable future. The case of Myanmar".

May 10, Friday 10:00-17:00; Kyoto University Research Administration Office 1F Seminar room1

Myanmar submitted climate change strategy and action plan (MCCSAP) ahead of Paris agreement addressing the climate change impacts and response to transform Myanmar into a climate resilient and carbon-efficient nation through a sustainable manner. It is interlinked and underlined by the 2030 SDGs. Mapping the SDGs and MCCSAP is an important process. This event addresses the current economic and social systems transform in Myanmar as decarbonized society pursuing for countermeasure against climate change and sustainability. Integrated approach to promoting the multiple dimensions of SDGs are highlighted, as well as the challenges and efforts in progress in the area of agriculture practice, waste sector, and resources consumption and production.

Organizer: Myo Min Win. Environment Preservation Research Center, Graduate School of Engineering, Kyoto University

7. "Global Landscapes Forum Kyoto 2019: Climate, Landscapes and Lifestyles -It is not too late".

May 13, Monday 9:00-18:00; Kyoto International Conference Center

The upcoming Global Landscapes Forum (GLF) Kyoto offers an opportunity to review the latest science, launch new initiatives and pitch innovative ideas for climate solutions across a myriad of landscapes, including mountains and drylands, peatlands, rangelands and pastures, forests and oceans. The 2019 GLF conference in Kyoto will be the first GLF held in East Asia. The forum will bring together the best minds from science, development agencies, government, indigenous peoples, civil society and project implementers to share on-the-ground solutions in Kyoto and online.

Organizer: Center for International Forestry Research, Faculty of Agriculture, Kyoto University

Link: <https://events.globallandscapesforum.org/kyoto-2019>

8. "International Symposium on Agricultural Technology Responding to Climate Change "Global-scale Climate Change and Rural-fishing villages".

May 13, Monday - May 15, Wednesday; Biwako Hall Center for the Performing Arts Theatre.

In recent years, it has been reported every year that disasters caused by abnormal weather such as drought and torrential rain occur around the world and cause enormous damage to food production. At the same time, agriculture is also a source of greenhouse gases, it is necessary not only adapting to climate change but also increase productivity as well as reduce greenhouse gases in order to achieve sustainable agricultural production. This is a common issue for humanity. To that end, we introduce and discuss about our possible contribution from representatives of domestic and foreign countries who are actually at the work site.

Organizer: Ministry of Agriculture, Forestry and Fisheries

Link: http://www.maff.go.jp/j/press/kanbo/kankyo/190222_8.html

9. Seminar for International Climate Change Career & Networking.

May 13, Monday 15:30-18:00; Research Bldg No 2, Kyoto university Yoshida campus

At this Seminar, the IPCC and organizations which are taking actions in addressing climate change will introduce their missions and activities. The participants will also have an opportunity to learn general recruitment system of international organizations. If you are interested in international climate change measures, working for those organizations and/or networking with them, please come and join us!

Organizer: Ministry of Foreign Affairs of Japan

Link: <https://www.mofa.go.jp/mofaj/files/000473185.pdf>

10. "Seminar for International Climate Change Career & Networking".

May 14, Tuesday 18:00-19:00; International Science Innovation Building, Kyoto university Yoshida campus

As part of its response to climate change, the government is currently formulating a proposed "era of growth strategy based upon the Paris climate agreement" (provisional name) . Citizens are being asked for their opinions on a wide basis, and as a part of this we will hold a discussion panel with the young people who will go on to be responsible for our future society.

Organizer: Ministry of the Environment Government of Japan

Link: <https://www.env.go.jp/press/106763.html>

11. "Workshop on Climate Change and Energy. Touch the cutting edge of policy research on climate change and energy."

May 17, Friday, 10:30-12:00; Kyoto University Clock Tower Centennial Hall 2F

This event invites researchers on policies on climate change and energy from both Japan and abroad, discuss and exchange views on the cutting edge of policy research.

Organizer: The Research Center for Advanced Policy Studies, Institute of Economic Research, Kyoto University

Link: <http://www.caps.kier.kyoto-u.ac.jp>

12. "Industrial Day 2019. Exchange Meeting among Academia, Industry and Government ~Strengthening Resilience to Climate Change~"

May 24, Friday 13:30-17:10; Campus Plaza Kyoto

In academia, there are a variety of study-phase technologies to achieve a climate resilient society. In order to promote practical research of the technologies, industry-academia-government collaborations are needed. Industrial Day 2019 ① will provide a networking opportunity for anyone who is interested.

Organizer: KyotoCity, Kyoto University Research Administration Office in Katsura Campus

Link: <https://www.rac.t.kyoto-u.ac.jp/ja/news/events/ind-day2019-1>

13. "Symposium on Climate Change Impacts and Adaptation in the study of Hydro-Meteorological Hazards and Water Resources. What is the "Paradigm Shift"? We won't regret it!".

May 24, Friday 13:30-17:10; Youth Education National Olympics Memorial Youth Center

Using Regional Climate Models and the Global Climate Model, it has been possible to assess the impact of Climate Change on water resources. Due to global climate change the natural hazards - floods, storm surge, storm waves and drought - are expected to rise. On this symposium, researchers and stakeholders who deal with the study of global warming and Climate Change effects gather to discuss ways to "Paradigm Shift" for adaptation to Climate Change.

Organizer: MEXT " Integrated Research Program for Advancing Climate Models" / MLIT

Link: <http://togo-d.jp/meetings/20190524.html>

14. "International Workshop on Visions of a Low-carbon and Resilient Society. Let's explore frontiers of mitigation and adaptation".

June 27, Thursday 13:30-14:30; International Conference Hall, Clock Tower Centennial Hall

The public, private, and voluntary sectors have carried out various policies and projects in mitigation and adaptation. Findings and proposals on these policies and projects in perspectives of engineering, agriculture, and social sciences are presented in poster sessions and flash presentation sessions.

Organizer: Graduate School of Global Environmental Studies, Kyoto University

Link: <https://www2.ges.kyoto-u.ac.jp>

15. Kyoto University Sustainable Symposium. The sustainability of natural resources and energy".

June 27, Thursday from 10:00; International Conference Hall, Clock Tower Centennial Hall

We have keynote speeches or panel discussions by key persons from Japan and abroad (Mr. Takejiro Sueyoshi, representative of WWF and Mr. Kiribati, former Nobel laureate candidate, president of advanced companies, and researchers at our university) . We also have a large-scale poster session by laboratories of Kyoto University and by young researchers. And we are planning events about SDGs, igniting discussions and practices inside and outside the campus.

Organizer: Graduate School of Global Environmental Studies, Kyoto University

Link: <https://eco.kyoto-u.ac.jp>

To all organizers and participants,
thank you for your effort and collaboration
toward a sustainable future for humanity.

CONCLUSION

Kyoto University IPCC Weeks 2019 was organized with the idea to gather together researchers and multidisciplinary perspectives about climate change and sustainable future. The main idea of these events was to share with the world the knowledge from University and offer the scenario for a dialogue from different disciplines among different actors from society. In this regard, every event was open for the public and people from different backgrounds and different disciplines had contributed with their opinions to make a better world.

The events of Kyoto University IPCC Weeks 2019 have in common that they all offer a perspective about different dimensions of the problematic related to climate change and sustainable development. In a deeper view, most of the topics discussed are related to the effect of human influence to global warming highlighting the inevitable effect in our lives. However, each topic requires practical action in a limited time frame. In this sense, University has a role on sharing knowledge and raise awareness in society in order to promote the reflection about current patterns of behavior that may be negatively influencing or attempting against the sustainability of our planet.

From the perspective of the young researchers, felt inspired and motivated to share and discuss their research with their peers and enrich themselves from their opinion. Most of them participated of the roundtable discussion motivated by their interest to hear about climate change and sustainable development from different disciplines. The opinion of President Yamagiwa was of high interest for the participants as they concur that one of the most impactful comment was "What initiatives have we taken for a sustainable society?" as a call for an individual reflection to promote social action. Needless to say, this event was not possible without the collaboration and active participation of the students, faculty members, administrative staff and the participation of a vivid audience that attended to the different events and freely shared their thoughts with the hope to make a better future for the next generations.

Finally, all the activities of Kyoto University IPCC Weeks 2019 aim to reaffirm the commitment of our institution with society to contribute as much as possible from the University to the world toward a sustainable future for all.

PICTURES OF THE EVENT



Kyoto International Conference Center Annex Hall, May 11, 2019
Booth of Kyoto University



Presentation of young researchers at the roundtable discussion



Keynote speaker Mr. Takeshi Shimotsuma
Supervising Director of Global Environment and Energy Policy from City of Kyoto



Keynote speaker Professor Masashi Taketani
Kyoto Institute of Economic Research- KIER



Discussion of President Yamagiwa with young researcher in stage



Participants of the roundtable discussion with President Yamagiwa

KYOTO UNIVERSITY IPCC WEEKS 2019 FINAL REPORT

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