

A vibrant landscape photograph of a tea plantation. In the foreground, rows of lush green tea bushes are visible. The middle ground shows a valley with more tea fields and some trees. In the background, rolling hills and mountains are covered in dense green forest under a bright blue sky with scattered white clouds.

# Annual Report

# 2021

July 2021–June 2022

**IGES**  
Institute for Global  
Environmental Strategies

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# Foreword

The Institute for Global Environmental Strategies (IGES) was established under an initiative of the Japanese government in 1998 with the support of Kanagawa Prefecture. Since 2012, IGES has been conducting practical policy research as a public interest incorporated foundation, aiming to realise sustainable development in the Asia-Pacific region.

This annual report highlights the IGES business year from July 2021 to June 2022, the first year of its 8th Phase Integrative Strategic Research Programme (ISRP8), which will span four years. IGES conducts a wide range of research activities on pressing environmental issues such as climate change mitigation and adaptation, the creation of a sound material-cycle society and circular economy, and biodiversity conservation. Through the “co-production of knowledge” in collaboration with diverse stakeholders, we actively disseminate effective policy recommendations aimed at policy formulation processes and debate both in Japan and overseas.

The global COVID-19 pandemic has yet to subside and continues to wield impacts on our socio-economic systems. Meanwhile, global issues such as intensifying climate change, biodiversity loss, and food and energy security concerns stemming from Russia’s invasion of Ukraine, are mounting and causing delays in progress on the Sustainable Development Goals (SDGs). As we confront these global challenges, there is a limit to conventional approaches that address individual issues separately. An integrated approach that looks at environmental, economic and social issues from a broader perspective is needed. We must mainstream the integrated approaches currently coming into practice, such as the “Regional Circulating and Ecological Sphere (Regional CES)” aimed at transitioning to a decarbonised society, a resource circulating society, and a society in harmony with nature, advocated in Japan’s Fifth Basic Environment Plan, as well as the promotion of efforts to enhance synergies between climate actions and the SDGs. In so doing, we must ensure progress toward a sustainable and resilient society in harmony with nature.

In July 2021, IGES established the Integrated Sustainability Centre (ISC) at our Hayama headquarters to advance research aimed at materialising the concept of the Regional CES. IGES endeavours to strengthen solution-oriented research activities with emphasis on cross-cutting, integrated approaches by introducing common priority focus areas in which each research unit is motivated to co-work and collaborate together. IGES, as a leading think tank in the Asia-Pacific on environment and sustainability, is determined to fulfil its role as a “change agent” guiding the transformation toward a sustainable society.

Going forward, I would like to request your continued understanding and support of IGES’s research activities.



**TAKEUCHI, Kazuhiko**  
President, IGES



IGES entered its 8th Phase Integrative Strategic Research Programme (ISRP8, FY2021–FY2024) from 2021. IGES is engaged in practical research activities under the four research areas of Climate and Energy, Sustainable Consumption and Production, Biodiversity and Forests, and Adaptation and Water. Added to our three task forces on City, Finance and Business, IGES newly established the Integrated Sustainability Centre (ISC), with research bases in Tokyo, Kansai, Kitakyushu, Bangkok and Beijing, as well as our Hayama headquarters.

For ISRP8, IGES has introduced common priority focus areas in which all research units will work collaboratively to promote an integrated, cross-cutting approach. Specifically, we have placed emphasis on research for accelerating implementation of the Paris Agreement and the Sustainable Development Goals (SDGs), both important international trends to address global environmental issues. IGES also puts particular focus on research for the development and implementation of a global biodiversity framework, and for shaping circular economy and sustainable lifestyles. In collaboration with diverse stakeholders, including national and local governments, businesses, international organisations, research institutions, NGOs and citizens, our aim is to ensure the results of our research activities achieve a higher level of impact. IGES achieved a wide range of outcomes in FY2021, the first year of the ISRP8. In addition to contributing to expediting the implementation of Article 6 of the Paris Agreement in the Asia-Pacific region, we provided support for net zero initiatives, including the formulation of climate action plans and future visions by national and local governments in Asia, established an international consortium to promote the development of the “Regional Circulating and Ecological Sphere (Regional CES)” in Asia, and engaged in active involvement in development processes of the Post-2020 Biodiversity Framework, which is scheduled to be adopted at the 15th Conference of the Parties (COP15) of the Convention on Biological Diversity (CBD) in December 2022. Likewise, IGES amplified the timely dissemination of information on multiple levels through the release of IGES policy recommendations and key messages targeting major policy formulation processes, publication of commentaries and research reports analysing major issues, and further development of our webinar series that was launched last year aimed at explaining the latest trends on important issues such as climate change in an easy-to-understand manner. We effectively linked our research results to impacts generation in policy formulation processes and domestic and international debate.

IGES will continue to promote practical and highly dynamic research activities that are aligned with trends and needs in the Asia-Pacific region and the world. We will proactively communicate messages that encourage the transformation to a sustainable society, based on collaboration and cooperation with diverse stakeholders.



**TAKAHASHI, Yasuo**  
Executive Director, IGES

# Outline of IGES

## Mission of IGES

The Asia-Pacific region has seen rapid economic development and an accompanying intensification of environmental problems. In light of this, achieving a balance between environmental and developmental goals is a pressing issue, and the mapping of paths to sustainable societies that operate in harmony with nature is required. While maintaining cooperative relationships with a wide array of stakeholders including national and local governments, international organisations, universities, research institutes, businesses and NGOs, IGES intends to form strategies to achieve sustainable societies and to contribute to policy formulation based on the needs of the Asia-Pacific region.

## Research Activities

Based on the 8th Phase Integrative Strategic Research Programme (four years from July 2021), and hinged upon the coordination of the Strategic Management Office, IGES engages in policy research for problem-solving in a wide range of research areas including climate and energy, sustainable consumption and production, biodiversity and forests, and adaptation and water. IGES further promotes an integrative and inclusive approach across sectors and disciplines at the institute by materialising the concept of the regional Circulating and Ecological Sphere (CES) with the launch of the Integrated Sustainability Centre (ISC) in July 2021.



FY2021 Organisational Chart



# Research Highlights in FY2021

July 2021–June 2022

In close collaboration with diverse stakeholders, IGES aims to generate “impact” that facilitates the transition towards realising sustainable societies. In its 8th Phase Integrative Strategic Research Programme (ISRP8), the institute set a target to have 30 successful cases annually. The target was met in FY2021, with 40 cases.

In FY2018, with the purpose of promoting and sharing outstanding impactful cases, IGES President set up the “Mountain View Award”, awarded to the team with the best impact case. In FY2021, seven impactful cases were shortlisted as finalists, and “IGES Supported Da Nang City to Develop the City Action Plans on Marine Plastics, on 3Rs Implementation as well as Formulating a Comprehensive Climate Action Plan and a Training Curriculum on Climate Change Education through Providing a Series of Policy Research Findings in Timely Manner” was selected as the best impact case in FY2021. Below are brief summaries of some shortlisted cases.

## **IGES Supported Da Nang City to Develop the City Action Plans on Marine Plastics, on 3Rs Implementation as well as Formulating a Comprehensive Climate Action Plan and a Training Curriculum on Climate Change Education through Providing a Series of Policy Research Findings in Timely Manner**

IGES was recently recognised for its significant contributions to the sustainable urban and socio-economic development of Da Nang City through a number of initiatives and programmes shown below. (1) IGES worked closely with the City of Yokohama and the Da Nang Department of Natural Resources and Environment (DONRE), and in cooperation with JICA, supported a 3R (reduce, reuse, recycle) pilot project as well as citizen participation and awareness-raising. Due to the success of this project, Da Nang City has decided to expand its source segregation activities to the entire city with the goal of achieving a 15% recycling rate by 2025. (2) To help Da Nang to tackle marine plastic litter,

IGES in partnership with UNESCAP supported with strong scientific evidence to launch the city’s “Action Plan to Manage Marine Plastic Litter in Da Nang by 2025 with a Vision for 2030 (KH 122/KH-UBND)”. (3) IGES is currently assisting Da Nang City in developing a Climate Action Plan aiming to achieve its SDGs & carbon neutral target by 2050. (4) IGES also supported the development of climate education materials for the city’s secondary schools. IGES will continue to promote activities to help realise the goal of “Building Da Nang into an Environmental Model City of ASEAN” by 2030.

## **Contribution to the Revision of Japan’s Clean Wood Act and Its Implementation**

Illegal logging is one of the drivers of global deforestation, and has a negative impact on climate change and biodiversity conservation. Japan, as a timber

consuming country, needs to restrict the use of illegally logged timber. IGES proposed improvement measures at the government organised committee to review the Act on Promotion of Use and Distribution of Legally-harvested Wood and Wood Products (commonly known as the “Clean Wood Act,” enacted in 2017). Some of our recommendations were adopted in the review committee’s report. In addition, the government has started to prepare due diligence guidance for operators as proposed by IGES.

### **Accelerating the Implementation of Article 6 of Paris Agreement in Asia and Pacific Region**

At COP26 organised in November 2021, IGES contributed to supporting the Japanese government delegation in reaching agreement on Article 6, the last piece of the Paris Agreement rule book. Specifically, IGES participated in the Japanese delegation to support negotiations on Article 6 of the Paris Agreement, as well as the transfer of the Clean Development Mechanism to Article 6.4 of the Paris Agreement, which became a political discussion. IGES provided an analysis of the estimated future supply of credits based on the CDM database developed by IGES, which formed the basis for discussions.

### **Joint Development of Kanagawa Net Zero Vision with the Kanagawa Prefecture**

IGES and Kanagawa Prefecture collaborated to develop the “Kanagawa Decarbonisation Vision 2050”, which outlines the future vision for a decarbonised society and what can be done now. Seminars and videos on the vision were also jointly produced to raise public awareness. Based on this vision, there has been a shift in people’s lives towards a decarbonised lifestyle and to promote the decarbonisation of business initiatives.

### **Established the CES-Asia Consortium as the Regional Platform of the Circulating and Ecological Sphere Approach in South and Southeast Asia**

A regional platform of the Circulating and Ecological Sphere Approach in South-Southeast Asia, namely CES-Asia Consortium was established in October 2021 with the signing of a consortium agreement by IGES, START International and the leading academic and research institutes in South and Southeast Asia. The CES-Asia Consortium brought the leading academic and research institutes in South and Southeast Asia onto a common platform, working together to generate

evidence-based knowledge, capacity building for the young professionals and multi-stakeholder engagements to support the co-development of the CES Action Program in the local/ city regional context. CES-Asia Consortium helps to implement CES study in city regions and developed joint outputs on the CES concept (Journal papers, CES Book, city fact sheet). This consortium also provided inputs to important policy process including U-20 communique, Climate Energy Synergy conference and IPCC sixth Assessment Report. The CES concept has been highlighted as an emerging integrated approach for localisation of climate and sustainable development actions in the Asia Chapter of this assessment report. Furthermore, the CES Asia Initiative has been well recognised by stakeholders and received coverage in the media.

### **Transforming ASEAN into a Resilient & Net-zero Community as Early as Possible after 2050 through Development of the ASCCR (ASEAN State of Climate Change Report) & ASEAN Policy Brief**

The ASEAN Status of Climate Change Report (ASCCR) was prepared as part of JAIF and released in October 2021, two and a half years after the project was launched. The ASCCR presents for the first time the current situation and outlook on climate change in the ASEAN region, as well as the ASEAN Climate Vision 2050 comprising goals and transition pathways on development, adaptation and mitigation (i.e. 29 adaptation actions and 30 mitigation actions). The national reports, prepared in collaboration with 15 research institutes from 10 ASEAN countries and policymakers from 10 countries of the ASEAN Working Group on Climate Change (AWGCC), were synthesised into the ASCCR by IGES researchers. Collaboration with research organisations such as NIES (Japan), IIASA (Austria) and the Energy Transitions Commission (ETC, UK) led to the presentation of long-term transition pathways based on the best long-term projection science. Since its publication, the ASCCR has been mentioned at the ASEAN Summit, the Japan-ASEAN Summit and the side events of COP26. The research results of the ASCCR have been reflected in the Japan-ASEAN Climate Change Action Agenda 2.0, and contributed to the ASEAN Secretary General’s commitment to achieve 2050 Net Zero Emissions. The publication of ASCCR’s key messages as a policy brief of the ASEAN Energy Centre promoted sharing the direction of collaboration with policymakers and the research community in the energy sector, which is key to decarbonisation. The subsequent challenge is to translate the actions of ASCCR’s transition pathway into concrete policy measures and activities, which are being considered for the development of a new JAIF project (ASEAN Climate Change Strategic Action Plan 2023-2030) by COP28 in 2023.



Research Highlights >

# Integrated Sustainability Centre

Integration of climate change, circular economy, biodiversity and disaster risk reduction should be fully explored under the overarching framework provided by the SDGs. In this respect, the Integrated Sustainability Centre (ISC) has been collaborating with UNDESA to promote synergies between sustainable energy and the SDGs. This is in line with international efforts to achieve socio-economic transformation towards decarbonisation. At the Asia-Pacific Forum on Sustainable Development (APFSD) in 2019, ISC presented a set of key messages corresponding to the six entry points of the Global Sustainable Development Report. In addition, ISC has started to pay more attention to the concept of “just transition.”

## Major Activities in FY2021

### Helping Japanese Business to Accelerate Progress on SDGs

In 2021, ISC continued to promote the integration of the SDGs into core planning processes among Japanese businesses. In collaboration with the Global Compact Network Japan (GCNJ), ISC launched a new report that demonstrated progress on how Japanese businesses were working on the SDGs. Notably, more than 80% of surveyed businesses indicated that they are integrating the SDGs into their management strategies. At the same time, ISC is also leading the way in showing companies how they can take the SDGs forward and close gaps on issues such as circularity, supply chains and human rights. The SDGs GCNJ report is one of the most downloaded IGES outputs and has been cited in key policy documents such as Japan's Voluntary National Review (VNR).

### Strengthening VNRs and the Environmental Dimensions of the SDGs

Since 2021, ISC has been working with UNEP to evaluate 50 VNRs that countries in the Asia-Pacific produced between 2016 and 2021. Among others, the preliminary findings of the project include recommendations on how VNRs can strengthen the implementation of the environmental dimensions of the SDGs, how countries can improve coherence between successive VNRs and how challenges with data and indicators can be approached. The results of this project are helping UNEP and partners to underline broad trends and good practices on VNRs that are intended to accelerate needed progress on the SDGs in Asia and the Pacific.

### Enhancing Governance and Follow-Up and Review of the SDGs in Japan

In 2021, ISC was successfully awarded a multi-year project that will build on recommendations offered to the Ministry of Foreign Affairs of Japan in 2020 on what Japan can learn from Europe in governing the SDGs. The project will focus on establishing an effective methodology for the follow-up and review process and the alignment between those processes at the national and local levels. The recommendations are intended to complement previous suggestions on how Japan can enhance its multi-stakeholder engagement process and feed into Japan's VNR.

### Putting Living within Planetary Boundaries at the Core of the Regional SDGs Agenda

In 2021, ISC developed a set of key messages for APFSD. The messages outlined how policymakers in Asia and the Pacific can live within planetary boundaries, and were shared widely at APFSD and the High-Level Political Forum on Sustainable Development (HLPF).



### Advancing Co-benefits in Asia

In 2021, ISC continued to work with researchers from IIASA, ADB, Clean Air Asia, Stockholm Environment Institute (SEI), NIES and the United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS) to promote the implementation of policies and projects that can deliver co-benefits. Those activities are contributing to a co-benefits action plan in Thailand; the integration of co-benefits into climate policies in Mongolia; a new initiative to recognise the co-benefits from climate finance projects from the ADB; and the uptake of co-benefits interventions across Southeast Asian countries and cities.

### Contribution to the IPCC

ISC contributed as a lead author to the Sixth Assessment Report of the IPCC Working Group Three on Accelerating the Transition in the Context of Sustainable Development. The chapter underlined the importance of achieving synergies between climate change and sustainable development as well as just transitions. More than 50 current and former IGES staff had articles that were cited in Working Group Three.

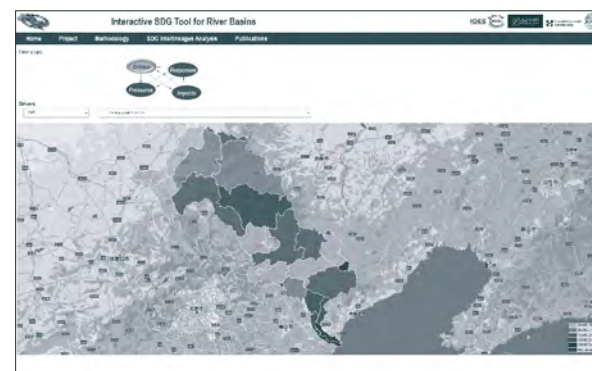
### Integrated Policymaking through the Applications of IGES' SDG Interlinkages Tool

Supported by IGES' Strategic Research Fund, ISC developed the SDG Interlinkages Tool (<https://sdginterlinkages.iges.jp/visualisationtool.html>) to support integrated policymaking through identifying, quantifying and visualising the interlinkages between the SDGs and their targets. The free online tool covering 27 countries in Asia and Africa has been accessed from more than 180 countries and used in the national voluntary reviews in Indonesia (in 2019 and 2021) and Ghana (in 2020) to elaborate the integration of the three dimensions. Recently, a novel methodology on automating the process of a systematic review of the causations among SDGs was developed using artificial intelligence-based Natural Language Processing techniques (with funding from Google's AI for Social Good Program). Furthermore, stakeholder consultation combining online questionnaire surveys and focus group discussions was conducted to validate and contextualise the SDG interlinkages of climate action at the sub-national level in West Java, Indonesia.

Under the Belmont Forum programme on Towards a Sustainable Earth, IGES implemented a project on "Luanhe Living Lab" supported by the Japan Science and Technology Agency. ISC developed an Interactive SDG Tool for River Basins (<https://sdginterlinkages.iges.jp/luanhe/index.html>) to inform the synergies and trade-offs among the SDGs at the basin scale. A Special

Feature on SDG synergies and trade-offs, Sustainability Science, was published under the project ([https://link.springer.com/journal/11625/topicalCollection/AC\\_b8bc6d10db81e9db53d86ccb7e4b25d7/page/1](https://link.springer.com/journal/11625/topicalCollection/AC_b8bc6d10db81e9db53d86ccb7e4b25d7/page/1)).

The SDG interlinkages methodology was also used for providing inputs into the Comprehensive Development Plan of Sado City in Japan.



IGES Interactive SDG Tool for River Basins

### Long-term Scenario Analysis for Cities: Methodology Development and Applications

How climate policies can be integrated into development planning and implementation at the local level is an important research area. Methodologies for integrating scientific evidence into long-term development planning are urgently needed. An ISC researcher developed the socioeconomic pathways on an urban scale by downscaling the global Shared Socioeconomic Pathways (SSPs) developed by the climate change research community. The urban scale SSPs can play a significant role in the development and implementation of sustainable development strategies. An application of the methodology includes an ongoing case study in Da Nang City, Viet Nam. A climate action plan for Da Nang City is being developed under a project on city-to-city collaboration supported by MOEJ. This development process intensively involved local stakeholders in the city departments. Another application is SSPs Bhutan. In FY2021, energy system analysis was implemented under the nexus conceptual framework water-food-energy and health nexus solutions for a post-COVID society.

### Advancing the Circulating and Ecological Sphere (CES) Approach in Asia and Pacific

ISC collaborated with START International (based in the US) to establish a regional network to promote the CES approach in the Asia and Pacific region. A CES-Asia Consortium was established in October 2021 following the signing of a consortium agreement by IGES, START International and the leading academic and research institutes in South and Southeast Asia including Visvesvaraya National Institute of Technology (India), Faculty of Architecture and Planning, Thammasat University (Thailand), University of Dhaka (Bangladesh), University of Danang – University of Technology and Education (Viet Nam), Royal Thimphu College (Bhutan), University of Indonesia, Ateneo de Manila University (Philippines) and Institute of Forestry of Tribhuvan University (Nepal). In collaboration with the CES-Asia Consortium partners, ISC initiated the co-development of the CES cases in Thimphu National Capital Region (Bhutan), Pokhara City Region (Nepal), Haridwar (India) and Hachinohe City Region (Japan) by implementing research projects to generate evidence-based knowledge on the CES application. ISC in collaboration with START and Consortium partners conducted stakeholder consultations in eight city regions in Asia and Southeast Asia. The CES factsheets for eight cities have been developed, research results have been published in journals, and a book project on the CES concept and its application was launched. ISC also promoted the CES concept, organising events on important policy processes such as Stockholm +50 and G20/U20.



Co-development of CES framework in the Asian city regions

### Contribution to the Global Assessment Reports

ISC significantly contributed to the IPCC Sixth Assessment Report Chapter 10 (Asia Chapter). An ISC researcher performed as the chapter scientist and contributing author for the Asia Chapter. The CES concept has been identified as an emerging integrated adaptive governance by the Sixth Assessment Report of IPCC (WG-II). ISC members also contributed to the IPBES Sustainable Use assessment as lead authors.

### Promoting the Water-energy-food Nexus Approach through International Collaborative Project

ISC implemented a Belmont Forum international collaborative project in collaboration with partner institutes in Japan, Netherlands, the US, the UK and Qatar. The project was successfully completed in FY2021 and developed a design lead framework for optimisation of water-energy-food nexus in urban areas, developed FEW print tools to assess the performance of the design, and developed a mobile application of FEW Footprint Calculator.

### Supporting “Decarbonization Leading Areas” in Japan and Kuala Lumpur

ISC worked together with City Taskforce, Tokyo Metropolitan Government, University Technology Malaysia (UTM), and Sustainable Energy Development Authority (SEDA) Malaysia to support Kuala Lumpur in achieving zero carbon by 2050 and establishing “Decarbonization Leading Areas” in a special district of “Wangsa Maju” located in the north-east of Kuala Lumpur. An ISC researcher served as acting chair of MOEJ’s “Evaluation Committee” on “Decarbonization Leading Areas” in Japan.

### Support to Organise the “3rd UN Climate and SDGs Synergy Conference” in UNU, Tokyo Japan

ISC worked together with other units to organise the third global conference “Strengthening Synergies Between the Paris Agreement on Climate Change and the 2030 Agenda for Sustainable Development”, co-convened by UNDESA and UNFCCC, hosted by MOEJ, in partnership with UNU and IGES. This conference was held in July, 2022 at UNU, Tokyo, Japan.



COP26 side event on carbon neutrality in Asian region



Discussion on SDGs and COVID-19 at ISAP2021

## Selected Publications

- Policy Report “SDGs Progress Report 2022: Survey Results on the Efforts of GCNJ Companies and Organisations”
- Discussion Paper “気候・環境関連分野に関するG7サミットの成果とエンゲージメントグループによる提案の比較から読み解けること”
- Book Chapter “Creating Social Co-benefits for Sustainable and Just Society” (Aligning Climate Change and Sustainable Development Policies in Asia)
- Briefing Note “1.5度目標への挑戦：メタン排出削減を加速する国際社会”
- Discussion Paper “Governing National Sustainable Consumption and Production Action Plans in the Philippines and Viet Nam: A Comparative Analysis”
- Submission to Policy Process “IGES 2022 Messages on the 2030 Agenda for Sustainable Development – Living within Planetary Boundaries to Achieve a Sustainable Future for All –”
- Peer-reviewed Article “One Atmosphere: Integrating Air Pollution and Climate Policy and Governance” (Atmosphere)
- Peer-reviewed Article “Breaking down barriers on PV trade will facilitate global carbon mitigation” (Nature Communications)
- Peer-reviewed Article “Development of an SDG interlinkages analysis model at the river basin scale: a case study in the Luanhe River Basin, China” (Sustainability Science)
- Discussion Paper “Integration of Climate Actions and SDGs at the Sub-National Scale: Results from Stakeholder Consultation in West Java”
- Presentation “Sustainable energy-food-water and health nexus solutions enhancing regional community-based supply chain systems post-Covid-19 in Bhutan” (14th Integrated Assessment Modeling Consortium (IAMC) annual meeting)
- Peer-reviewed Article “Residents’ place attachment to urban green spaces in Greater Tokyo region: An empirical assessment of dimensionality and influencing socio-demographic factors” (Urban Forestry & Urban Greening)
- Peer-reviewed Article “Exploring indigenous and local knowledge and practices (ILKPs) in traditional jhum cultivation for localizing sustainable development goals (SDGs): a case study from Zunheboto district of Nagaland, India” (Environmental Management)
- Peer-reviewed Article “Spatial characterization of non-material values across multiple coastal production landscapes in the Indian Sundarban delta” (Sustainability Science)
- Peer-reviewed Article “Towards a more sustainable and resilient future: Applying the Regional Circulating and Ecological Sphere (R-CES) concept to Udon Thani City Region, Thailand” (Progress in Disaster Science)
- Book “マンガでわかる脱炭素(カーボンニュートラル)” (池田書店)
- 環境省「地方公共団体実行計画策定・実施マニュアルに関する検討会(第2回)」に対する意見



Research Highlights >

## Climate and Energy Area

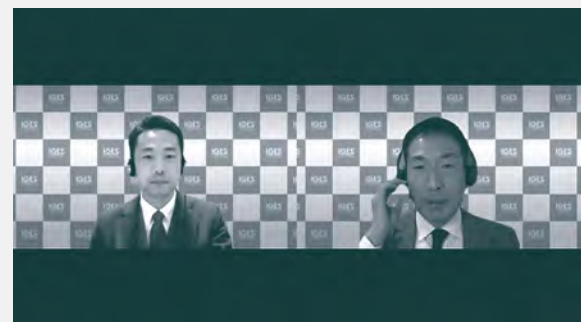
With particular focus on the Asia-Pacific region, the Climate and Energy unit (CE) is carrying out initiatives to facilitate the transition to decarbonised societies at the national and local levels. Specifically, CE looks towards strengthening climate and energy-related strategies and policies, and engages in international climate negotiations, bilateral and multilateral cooperation, carbon pricing initiatives, market-based mechanisms, and the development and maintenance of databases.



## Major Activities in FY2021

### Operationalisation of the Paris Agreement

CE contributed to the adoption of the rulebook on Article 6 of the Paris Agreement by participating in COP26 as a member of Japanese delegation. After the adoption of the rulebook on Article 6, CE established a new international initiative for development of Article 6 methodology tools (II-AMT) in cooperation with the Perspectives Climate Group. Utilising the knowledge and expertise gained through its support for international negotiations, CE continued to conduct a mutual learning programme for enhanced transparency in cooperation with the governments of Asian developing countries, focusing on reporting for Articles 6 and 13. In addition, CE organised several regional knowledge-sharing workshops for enhanced transparency in collaboration with major international partners, such as the UNFCCC Secretariat, the UNFCCC Regional Collaboration Centre (RCC) and the Global Support Programme implemented by the UNEP-DTU. Seeking opportunities to build capacity, IGES organised an international conference on Article 6 with UNFCCC secretariat and MOEJ. Furthermore, CE began to engage in cooperation with the Japan Aerospace Exploration Agency (JAXA) to promote inputs from the Japanese satellite community into the global stocktake (GST). CE also started playing a key role in bridging science and international policy discussions, by co-implementing a regional independent global stocktake hub for non-state actors (iGST) in Southeast Asia, leading to further exploration in the new phase.



Webinar on Article 6 of the Paris Agreement

### Materialisation of GHG Emission Reductions and Contribution to SDGs through Implementation of the JCM

CE contributed to implement the Joint Crediting Mechanism (JCM) which appropriately evaluates contributions to GHG emission reductions or removals by Japan, and applies them to achieving the national emissions reduction target. CE supported the development of seven MRV (monitoring, reporting and verification) methodologies. In addition, CE published the JCM-SDG best practices.

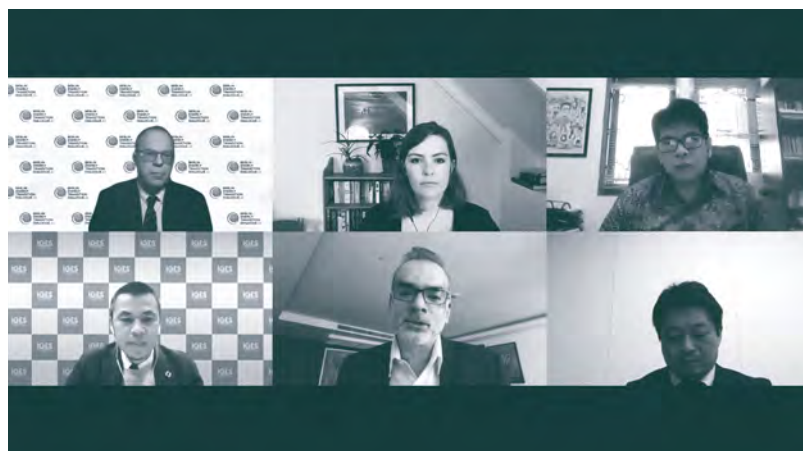
### Impacts on Political and Social Debates on Carbon Pricing in Asia

Carbon pricing policy is taking shape in Asia, such as the implementation of national emissions trading schemes in China and the Republic of Korea. CE served as Japan's focal point for jointly implementing the sixth Forum of Carbon Pricing

Mechanisms in Japan, Korea and China, and contributed to discussions on trilateral cooperation. CE conducted a timely overview and analysis of the design features and implementation progress of emissions trading schemes in China and the Republic of Korea. As a steering committee member, CE supported an initiative of Asia Society Policy Institute for expanding emissions trading schemes in Asia. A working paper on carbon pricing for the transition toward net zero in Asia was published, thereby stimulating the mutual learning of policy development.

### Climate Policy Development by Visualisation of Current Status

CE engages in analysis and visualisation of climate policies around the world in order to facilitate the further development of such policies. Particularly for Asia, CE completed analysis on coal transition management for 2°C or 1.5°C goals in China and India, and a comparative study on low-carbon policy in Japan, Korea and China. Domestically, CE extended the simulation analysis of power grid system from eastern Japan to the whole country for maximum expansion of renewables. Output on the analysis of scenarios for 2030 electricity mix was published, receiving considerable media attention. Further analysis on the feasibility of achieving a zero-emission power system in Japan is nearing completion. CE contributed to the UNEP Emissions Gap Report 2021, as well as representing Japan in Climate Transparency, a Germany-based research network for G20 countries. Likewise, CE provides the most up-to-date information through regular updating of the IGES Climate Databases on various topics. In collaboration with the National Center for Climate Change Strategy and International Cooperation (NCSC), CE also developed a Low Carbon Development Indicator System and its Japanese version based on the ecological footprint concept.



Webinar on aligning international finance for the net-zero economy

With regard to research on net zero, four different initiatives were undertaken: (1) cross-divisional joint research to develop a net-zero roadmap for Japan, (2) cross-divisional joint research to develop a book on net zero in Asia, (3) research on technology co-innovation, to identify and propose alternative ways for strengthening technology collaboration among countries, and (4) research on hydrogen economy in Asia and opportunities and challenges. Several publications have already been produced on these topics.

To communicate national and international trends toward decarbonisation, CE launched the IGES Climate Change Webinar Series in April 2021 and has been conducted 35 times through July 2022, with a total of more than 12,000 people watching live.



COP26 reporting webinar

## Selected Publications

- Briefing Note “COP26 最後のピース パリ協定第6条ルール決定について～政治レベルの合意点のポイント～”
- Briefing Note “2021年G20エネルギー・気候合同大臣会合の結果”
- Discussion Paper “Elements related to carbon credit credibility”
- Data/Tool “IGES Biennial Update Report (BUR) Database”
- IGES/JAXA Joint Submissions to the First Global Stocktake (e.g., A satellite-based deforestation monitoring system for tropical forests)
- Working Paper “Carbon pricing for the transition toward net-zero of Asia”
- Working Paper “実潮流に基づく電力系統運用を行った場合の2030年度の電源構成に関わる分析”

Research Highlights >

## Sustainable Consumption and Production Area

IGES conducts policy analysis from the perspective of sustainable consumption and production including environmentally-sound waste management in cities, formation of effective recycling systems with a view of Asia as a whole, and improvement in resource productivity. Likewise, IGES makes policy recommendations to stimulate lifestyle changes.



## Major Activities in FY2021

### Sustainable Lifestyles

Sustainable Consumption and Production unit (SCP) continued its role as the coordination desk for the Sustainable Lifestyles and Education Programme in the UN 10-Year Framework for Sustainable Consumption and Production patterns, and implemented or supported activities contributing to sustainable lifestyles at cities and communities globally. The eight projects promoting sustainable livelihoods and lifestyles in cities and communities were completed, despite the impact of the COVID-19 pandemic, and the results were published in the integrated report “Co-creating Sustainable Ways of Living 24 Stories of on-the-ground innovations”. The Global Search for Sustainable Schools initiative collaborated with 84 primary and secondary schools in nine countries and supported school management reforms, infrastructure development, curriculum development and community activities to enhance education for sustainable lifestyles. For the “Envisioning Future Sustainable Lifestyles” initiative, SCP worked with local governments, research institutions and citizens in six cities in Japan and abroad. The initiative examined and piloted household and community initiatives aimed at reducing the carbon footprint of citizens to help realise the 1.5°C target for climate change.

In the EU SWITCH Asia programme, SCP has cooperated with GIZ and others to help shape SCP policies in Asian countries, and in FY2021 developed guidelines for sustainable production in the seafood industry in Viet Nam and a policy analysis report on sustainable production in the garment industry in Cambodia and provided training programmes for policymakers and businesses in both countries.

Sustainable ways of living require changes in government and business as well as individual or household efforts. Thus, it is essential to shift the systems providing basic necessities and human needs through ‘co-creation’ among these actors. Therefore, it is desirable for civil society, government and local businesses to share their experiences of sustainable lifestyle initiatives and to cooperate with funding sources such as ESG investment and local vocational education to stimulate social businesses that contribute to sustainable lifestyles. SCP conducted research on the current situation of social entrepreneurs that contribute to sustainable ways of living and the conditions of investment and education supporting these businesses in the cities of Canada, India and Japan, and organised workshops to explore the ideal forms of information sharing and mutual support.

SCP will take advantage of the experiences and networks developed through engagement with the One-Planet Network and SWITCH Asia programme to make



further tangible contributions to the decarbonisation of cities and communities. Specifically, SCP will support the development of the climate change action plans of local governments both in Japan and abroad, facilitate co-creation between citizens and businesses, and promote education for sustainable living at communities and schools.

### Mainstreaming Circular Economy

SCP continued to be involved substantially in key international processes on circular economy and resource efficiency such as G20 resource efficiency dialogue, G7 resource efficiency alliance, International Resource Panel (IRP), OECD and Global Alliance on Circular Economy and Resource Efficiency (GACERE).

For example, an expert from SCP served as a reviewer for OECD's Environmental Policy Review for the UK to provide recommendations to their circular economy policy. SCP acted as a main actor to synthesise relevant country information (G20 marine plastic litter report & G20 RE dialogue portal site development) and develop the G7 CERE principle. SCP also acts as a policy think-tank on CE in collaboration with PACE (Platform for Accelerating Circular Economy) under World Economic Forum, Circular Economy Sustainable Dialogue by GIZ with contribution to T20 Policy Brief as well as Sitra (Finish innovation fund, organiser of the World Circular Economy Forum).

Domestically in Japan, SCP was involved in several governmental committees to discuss policy measures, CE indicators, and industrial standards on circular economy including those of MOEJ, METI, NEDO, Aichi Prefecture, and Tokyo Metropolitan government. SCP is now serving as the secretariat for the Japan Partnership for Circular Economy (J4CE) and organised six public-private dialogues to increase motivation to implement circular business models in the private sector. J4CE also developed a show-case of best practices on circular business practices and presented them at COP26.

### Marine Plastics and Circular Economy

For marine plastics and circular economy, SCP continued to support policy initiatives by ASEAN and ASEAN member states in particular. For example, a formal coordination processes started for developing National Action Plans in Myanmar and Cambodia to be developed and approved by national governments in Spring 2022.

Economic Research Institute for ASEAN and East Asia (ERIA) Regional Knowledge Center for Marine Plastic Debris (RKC-MPD) Technical Working Group was officially launched to support policy discussion based on research findings on

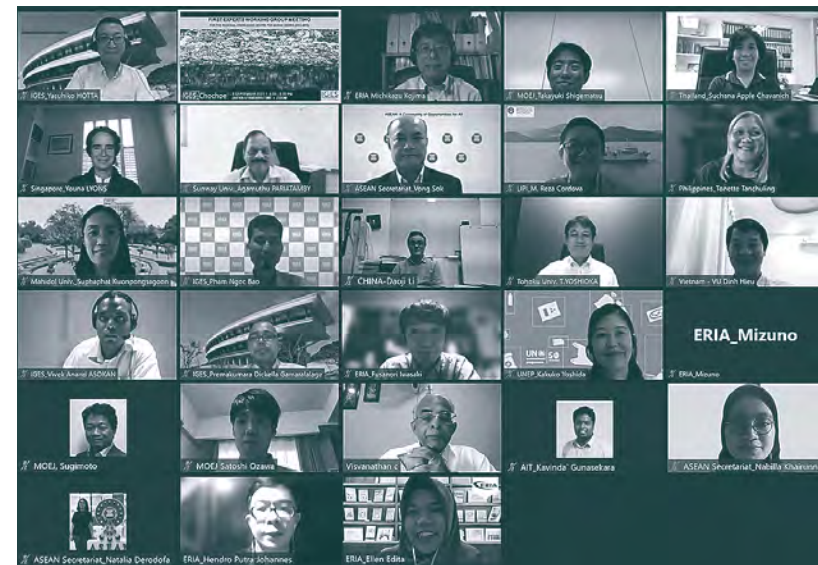
plastics and circular economy. Five parallel work streams were initiated to develop knowledge products by ERIA RKC-MPD.

For better coordination of UN and other initiatives, SCP started a coordination process for several on-going international projects on the topic led by UN organisations and bilateral aid agencies, with a pilot case in Cambodia. IGES, ERIA and OECD are now in consultation to develop the Asian version of Global Plastic Outlook as a flagship publication on policy evaluation in the long-term for ASEAN+3.

Under the Global Plastic Action Partnership Program, an initiative of the World Economic Forum, SCP began research in Viet Nam, Ghana and Indonesia, looking into how multi-stakeholder dialogue and process can facilitate actions to tackle marine plastic litter, and how to implement CE policy formulation in the context of developing countries.



Inception workshop on strengthening capacity for marine debris reduction in ASEAN (Phnom Penh, Cambodia)



ERIA's experts working group meeting on marine plastic debris

### IGES Centre Collaborating with UNEP on Environmental Technologies (CCET)

CCET has continued in conducting evidence-based policy research, providing technical support and capacity building to national and local governments, particularly Sri Lanka (Negambo and Galle), Indonesia (Surabaya), Malaysia (Kuala Lumpur), Viet Nam (Da Nang), and Thailand (Nakhon Si Thammarat) to formulate national and sub-national action plans for managing municipal waste, including plastic waste and marine litter, healthcare and COVID-19 waste to mitigate pollution, biodiversity and climate change impacts, increase resource efficiency and circular economy.

In addition, three ASEAN cities, including Padang (Indonesia), Bago (Myanmar) and Steung Saen (Cambodia) applied the Emission Quantification Tool (EQT) that CCET has jointly developed with the Climate and Clean Air Coalition (CCAC) to measure climate impacts including both GHGs and SLCPs and developed policy measures to mitigate open waste burning in the cities.

Viet Nam (Hoi An City) and Bhutan (Thimphu) are now using CCET's handbook on Ecological Education to build teacher capacity at primary schools, thereby integrating sustainable resource management, climate change and SDGs into formal and non-formal education systems.

CCET also started a new partnership with the Secretariat of the Basel, Rotterdam and Stockholm (BRS) Conventions to support countries, including Sri Lanka, Nepal and Cambodia to develop national plastic inventories to reduce the production and use of plastic products containing hazardous additives as well as to improve the material flow, transparency and traceability based on life cycle assessment (LCA).

Based on its scientific and practical expertise on plastic waste and marine litter, CCET also contributed to the development of the ASEAN Framework of Action on Marine Debris, Plastic Atlas Asia, eLearning Modules on Cities and Marine Plastic Pollution and eLearning Module on Waste Banks to enhance Local Circular Economy.

CCET also provided inputs to the Ministerial Meeting in September 2021 to draft a resolution for an internationally legally binding instrument on plastic pollution and actively being involved in global dialogue in developing plastic treaty as a member of Global Partnership on Marine Litter (GPML), UNESCAP Closing the Loop, UNEP-Counter Measure, and UN-Habitat Waste Wise Cities.



A study of open dumping and waste burning in ASEAN cities



Building capacities of local governments through peer learning

## Selected Publications

- Peer-reviewed Article "Expansion of Policy Domain of Sustainable Consumption and Production (SCP): Challenges and Opportunities for Policy Design" (Sustainability)
- Peer-reviewed Article "COVID-19 impact on household food and plastic waste generation in Bangkok" (Sustainability)
- Peer-reviewed Article "Integrated Strategies for Household Food Waste reduction in Bangkok" (Sustainability)
- Peer-reviewed Article "Lifestyle carbon footprints and changes in lifestyles to limit global warming to 1.5 °C, and ways forward for related research" (Sustainability Science)
- Peer-reviewed Article "Governance for food waste prevention in Japan, Thailand, and Vietnam: Achieving the right mix" (World Food Policy)
- Peer-reviewed Article "Are We Missing the Opportunity of Low-Carbon Lifestyles? International Climate Policy Commitments and Demand-Side Gaps" (Sustainability)
- Peer-reviewed Article "SCP Policy Design for Socio-technical System Change: Envisioning-based Policy Making (EnBPM)" (Global Environmental Research)
- Peer-reviewed Article "Policy Development for Reconfiguring Consumption and Production Patterns in the Asian Region" (Global Environmental Research)
- Policy Report "G20 Report on Actions against Marine Plastic Litter: Third Information Sharing based on the G20 Implementation Framework"

- Policy Report “New Delhi in 2030: Envisioning 1.5-Degree Lifestyles”
- Policy Report “Kyoto in 2030: Envisioning 1.5-Degree Lifestyles”
- Policy Report “Cape Town in 2030: Envisioning 1.5-Degree Lifestyles”
- Policy Report “Nonthaburi in 2030: Envisioning 1.5-Degree Lifestyles”
- Policy Report “São Paulo in 2030: Envisioning 1.5-Degree Lifestyles”
- Policy Report “Yokohama in 2030: Envisioning 1.5-Degree Lifestyles”
- Policy Report “2030年横浜 1.5°Cライフスタイルのビジョン”
- Policy Report “2030年京都 1.5°Cライフスタイルのビジョン”
- Policy Brief “Envisioning 1.5-Degree Lifestyles: Policies for Low-Carbon Cities in 2030”
- Issue Brief “Sustainable Ways of Living Issue Brief Series”
- Discussion Paper “Co-Creating Sustainable Ways of Living 24 Stories of On-the-Ground Innovations” (in English, Spanish, and Japanese)
- Discussion Paper “The Global Search for Sustainable Schools Guidance Note”
- Discussion Paper “The Global Search for Sustainable Schools Programme Synthesis Report”

#### <CCET>

- Peer-reviewed Article “Source Separation in Municipal Solid Waste Management: Practical Means to Its Success in Asian Cities” (Waste Management & Research)
- Peer-reviewed Article “Moving from Waste to Resource Management: A Case Study of Lake Toba, Indonesia” (Waste Management & Research)
- Peer-reviewed Article “Micro Plastics and Potentially Toxic Elements: Potential Human Exposure Pathways through Agricultural Lands and Policy Based Countermeasures” (Microplastics)
- Submission to Policy Process “National Action Plan on Plastic Waste Management in Sri Lanka, 2021–2030”
- Submission to Policy Process “Action Plan to Manage Marine Plastic Litter in Da Nang City by 2025 with a Vision Towards 2030”
- Submission to Policy Process “Action Plan to Manage Aquatic Plastic Litter in Surabaya City”
- Submission to Policy Process “Closing the Loop – Kuala Lumpur Action Plan”
- Policy Report “Greening Health Infrastructure: Rapid Assessment of policies and Practices on Health Care Waste Management in Ethiopia and Kenya”
- Policy Report “Closing the Loop on Plastic Pollution in Da Nang City, Vietnam – Baseline Report”
- Policy Report “Closing the Loop on Plastic Pollution in Kuala Lumpur, Malaysia – Baseline Report”
- Policy Report “Closing the Loop on Plastic Pollution in Surabaya, Indonesia – Baseline Report”
- Policy Report “Closing the Loop on Plastic Pollution in Nakhon Si Thammarat, Thailand– Baseline Report”
- Policy Report “Plastic Atlas Asia – Japanese Version”
- Book Chapter “Waste Management and Environmental Issues in Maldives (in Japanese)” (モルディブを知るための35章)
- Briefing Note “Building a Sound Material Cycle Society: Learning from Japan”
- Working Paper “Law Enforcement on Illegal Dumping and Illegal Treatment of Medical Waste in Japan”
- Working Paper “Health Care Waste Management Towards the Circular Economy”
- Non-peer Reviewed Article “Bottle-to-bottle recycling can boost Sri Lanka in the transition to circularity in plastics”
- Fact Sheet “Ecology Note – Towards a Clean, Green and Beautiful Bhutan”
- Data/Tool “Estimation Tool for Greenhouse Gas (GHG) Emissions from Municipal Solid Waste (MSW) Management in a Life Cycle Perspectives (Chinese)”
- Training Material “Training Module on Guidelines for Safe Closure and Rehabilitation of Municipal Solid Waste Dumpsites in Sri Lanka”
- Training Material “Ecological Education for Schools in Hoi An – A Teacher’s Guide”



Research Highlights >

## Biodiversity and Forests Area

The newly-formed IGES unit on biodiversity and forests (BDF) conducts problem-solving research and implementation in the Asia-Pacific region. The unit also aligns with and supports global biodiversity processes such as those of the Convention on Biological Diversity (CBD), IPBES, and the New York Declaration on Forests.

## Major Activities in FY2021

### Responsible Timber Trading

BDF has been working to provide necessary information on the Clean Wood Act (CWA) of Japan. Literature reviews, trade analyses and interviews were conducted in Indonesia, Malaysia and Viet Nam. Compliance by the Japanese timber industry has also been studied through a questionnaire survey. Summaries of these studies were published on the website “Clean Wood Navi” managed by the Forestry Agency (FA). At the same time, BDF has been conducting a 2-year project funded by the International Tropical Timber Organization (ITTO) to analyse timber legality assurance systems and good practices for sustainable timber trade in China and Viet Nam. Based on the data obtained in the FA commissioned projects on timber legality in the past, BDF published a series of four research articles on timber legality and presented at several seminars. BDF was invited to make presentations twice at the Review Committee on the Distribution and Utilization of Legally Harvested Wood organised by the FA to review the Clean Wood Act. The main recommendations were finally adopted in the Interim Report published by the committee. BDF is also expanding its focus to deforestation from agriculture commodities and organised an thematic session “Zero Deforestation in Supply Chain of Imported Agricultural Commodities” at ISAP2021.

### JCM REDD+<sup>1</sup>

BDF supported MOEJ by providing advice for a Joint Crediting Mechanism (JCM) REDD+ project. The methodology of the project was approved by the Joint Committee. BDF was also invited by the FA to be a committee member to discuss JCM guidelines for afforestation and reforestation.

### Contribution to International Biodiversity Processes

BDF staff began working as experts on the IPBES nexus assessment and transformative change assessment. BDF also contributed to the external review of the draft IPBES sustainable use of wild species assessment report, the draft IPBES values assessment report, and other peer-reviewed documents for IPBES, the Taskforce on Nature-related Financial Disclosure (TNFD) and CBD. Some of these reviews provided the opportunity to suggest relevant IGES publications for citation in the reports. BDF also contributed to disseminating information on the IPBES and CBD processes and outcomes to Japanese audiences, including through the publication of a Japanese guidebook on the IPBES-IPCC Co-sponsored Workshop Report on Biodiversity and Climate Change, and through an online public symposium on biodiversity. Finally, BDF staff have contributed a chapter to

<sup>1</sup> Reduction of Emission from Deforestation and forest Degradation, and Conservation, Sustainable Management of Forests and Enhancement of Forest Carbon Stocks

the 6th ASEAN State of Environment Report and produced a set of 100 UNEP factsheets covering 20 Asian countries and seven multilateral environmental agreements.

Authors' meeting on IPBES transformative change assessment in Montpellier, France



### Advisory Function to IPBES TSU

BDF continued to serve in an advisory role to the technical support unit (TSU) for the IPBES assessment on invasive alien species and their control. This TSU is hosted by IGES at the Tokyo Sustainability Forum. Its role is to coordinate the assessment and support the team of experts compiling the assessment report.

### JICA Technical Cooperation Project: Development of Integrated Coastal Ecosystem Management System in the Republic of Mauritius in Mauritius

One of the BDF team was dispatched to Mauritius to respond to a heavy oil spill from the bulk carrier vessel, MV Wakashio, contributing to a JICA project as a member of an expert team in 2020. Based on the data collection survey conducted at that time, the team launched the JICA Technical Cooperation Project in January, 2022, which aims to support Mauritius in building an integrated coastal ecosystem management system to contribute to restoring the ecosystem in a resilient manner. Within that, BDF plays a role in supporting the field of ecosystem services and ecotourism. The former component of the project intends to evaluate coastal ecosystem services and visualise it to enhance the conservation and monitoring plan and practices. The latter aims to understand the current state of ecotourism in the project site and improve the quality in terms of sustainability through the introduction of a sustainable tourism standard. By doing so, it can prevent some "ecotourism" businesses from harming the coastal ecosystems, and attract sustainability-minded tourists, who have increased in recent years. The work will start being more substantially-oriented from 2022 onward.

### Mainstreaming Biodiversity Conservation and Sustainable Management in SEPLS

IGES and partners supported six more projects to demonstrate the value and potential of socio-ecological production landscapes and seascapes (SEPLS) around the world. The total number of such projects since 2013 has now grown to 54. A new Satoyama Development Mechanism (SDM) website was developed

to facilitate interactive information exchange between the project implementers, the SDM Secretariat and a general audience. In addition, the SDM project results were publicised in a variety of ways, including at side-events organised at the High-level Political Forum on Sustainable Development (HLPF) and ISAP2021.



Satoyama landscape in Minami-Shimabara, Nagasaki

### Collaboration with AEON Environmental Foundation

AEON Foundation requested BDF to provide professional support for a reform process of their grant programme in the conservation sector. The total amount of the annual grant is approximately JPY 100 million. During fiscal year 2020, BDF reviewed the current practices of the grant programme, identified issues and challenges that needed to be addressed, and then proposed a list of activities to be considered under the reform process. BDF worked with AEON Environmental Foundation to strengthen the foundation's Environment Activity Grant Programme, on the basis of a renewal plan that BDF proposed to the foundation in FY2020. BDF also produced five case study reports on the foundation's Satoyama restoration projects across Japan.

### Sustainable Management of Commons in Socio-ecological Production Landscapes (SEPLs) in Slovenia and Japan

This bilateral research project aims to compare SEPLs in Japan and Slovenia with regards to ecosystem services and commons. Specifically, BDF has investigated potential similarities and differences in a bundle of ecosystem services and their associated values, contextualised and localised the concept of new commons, and explored solutions for better governance strategy of SEPLs to sustain ecosystem services and bio-cultural diversity in Slovenia and Japan.

### Resilience and Ecosystem Services Assessment of Cultural Landscape in Ethiopia

In the Gurage socio-ecological production landscape of Ethiopia, “Jefoure” refers to a traditional grass-covered road with households on either side. BDF conducted research to generate valuable empirical information regarding a Gurage landscape feature that is not common knowledge, and which can support decision-makers and other conservation initiatives aimed at sustainable management. Three peer-reviewed papers were published in 2021, based on the research.

### Contribution to the Development of a New ISO Standard on Biodiversity

The International Organization for Standardization (ISO) set up a new technical committee on biodiversity in 2020 and the Government of Japan decided to actively participate in the process. BDF took on the role of secretariat for a domestic mirror committee, in collaboration with Japan Standard Association (JSA). The work involved an analysis of concerned documents, a compilation of inputs from concerned organisations and experts in Japan and submission to the ISO technical committee, as well as knowledge-sharing among concerned stakeholders and the public.

### Business and Biodiversity

IGES became a Forum member of TNFD. Relating to this, BDF worked with MOEJ and others to promote business engagement in this process. BDF also started working with the Keidanren Committee on Nature Conservation (KCNC) to promote company engagement.

### Integration of Traditional and Modern Bioproduction System for a Sustainable and Resilient Future under Climate and Ecosystem Changes (ITMoB)

The ITMoB project, a 3-year cooperative research project, aims to explore scenarios/pathways for a sustainable and resilient future under climate and ecosystem changes by assessing various ecosystem services provided by the bioproduction systems under multiple future scenarios. The project focuses on integration of traditional and modern bioproduction systems such as home gardens, agroforestry, plantation, aquaculture and urban agriculture in Japan, the Philippines and Indonesia. In FY2021, the project began with a kick-off workshop, international conferences, training seminars, stakeholder meetings, and field surveys.

### Abandonment and Rebound: Societal Views on Landscape and Land-use Change and Their Impacts on Water and Soils (ABRESO)

The overarching goal of the ABRESO project is to develop a global transdisciplinary platform. It is envisioned as a network of people, sites, tools and ideas, for

understanding the impacts of land abandonment on sustainability of soil and water resources. Land abandonment and subsequent land use or land cover change can have profound implications for water resources, as the changing fabric of the Critical Zone (CZ) dictates changes in infiltration, runoff and the delivery of sediment and nitrogen to groundwater and surface waters. In FY2021, the project began with a kick-off workshop, training seminars, stakeholder meetings and preliminary field surveys.

### Designing Sustainable Future Scenarios through Multiple Value Criteria

This project aims to develop a new system for local evaluation and build local future scenarios to explore local sustainability at three research sites in Japan. In FY2021, BDF conducted preliminary field surveys to design future scenarios and quantify the value of subsistence food production (self-production and gifts from others) that is exchanged without market transaction.

## Selected Publications

- Policy Brief “Strengthening agricultural certification schemes by adding criteria on forest restoration”
- Peer-reviewed Article “The effect of agricultural certification schemes on biodiversity loss in the tropics” (Biological Conservation)
- Policy Report “生物多様性と気候変動 IPBES-IPCC合同ワークショップ報告書：IGESによる翻訳と解説”
- Proceedings “Landscape approach for biodiversity, climate change and sustainable development co-benefits”
- Peer-reviewed Article “Diverse values of urban-to-rural migration: A case study of Hokuto City, Japan” (Journal of Rural Studies)
- Issue Brief “Mobilising private finance for biodiversity”
- Briefing Note “IPBES第8回総会の概要と今後の展望”
- Article “Contribution of the Satoyama Initiative to implementing the post-2020 Global Biodiversity Framework and developing Circulating and Ecological Economies” (Japan Environment Quarterly)
- Article “ドイツとオーストラリアにおける政府の違法伐採対策法の運用” (木材情報)
- Article “持続可能性の確保に貢献する輸入木材の合法性確認はどうあるべきか？—バブアニューギニアとタイの事例に基づく検討—” (木材情報)





## Research Highlights >

# Adaptation and Water Area

To contribute to the realisation of a resilient and sustainable society, particularly in the Asia-Pacific region, the Adaptation and Water unit (AW) promotes initiatives focusing on climate change adaptation and water environment measures. For climate change adaptation, AW actively participates in international negotiations and policy processes and makes policy proposals, while closely watching global efforts on adaptation and identifying international policy needs. Based on its findings, AW carries out work on priority issues on adaptation, including promotion of AP-PLAT, research on the integration of adaptation measures with disaster risk reduction, mitigation measures, and biodiversity conservation, and work on locally-led adaptation (LLA) and transboundary adaptation. Regarding water environment measures, AW actively promotes WEPA's efforts as its secretariat to improve water environment governance in the Asia-Pacific region. AW also implements projects to promote the deployment and proper management of decentralised wastewater treatment systems, and address the issue of microplastics in rivers.

## Major Activities in FY2021

### Development of AP-PLAT Capacity Development Contents

AW, which leads the capacity development component of the Asia-Pacific Climate Change Adaptation Information Platform (AP-PLAT), in collaboration with relevant organisations, produced six e-learning courses on topics such as "Building resilience to compound and cascading disaster risks", "Nature-based Solutions (NbS)", and "Utilize a climate projection tool for the adaptation planning", along with the capacity development section of the AP-PLAT website.



Field survey conducted on Sado Island for the preparation of NbS e-learning materials

### Contribution to International Climate Change Adaptation Processes

The international discussion on climate change adaptation has become increasingly active in recent years. IGES participates as a member of the Japanese government delegation to meetings held under UNFCCC and provides support for international negotiations related to adaptation; at the 56th Subsidiary Body in June 2022, AW supported MOEJ and engaged in negotiations on Global Goal on Adaptation. AW also has been following such activities including high-level dialogues and the relevant organisations on individual key themes (disaster management, ecosystem, food systems, etc.), with a particular focus on related initiatives led by the UK as COP26 President. Through following international trends on adaptation and their development, AW made recommendations to MOEJ on the future contribution of Japan in the field of adaptation.

### Synergy between Climate Change Mitigation and Adaptation

As part of the IGES-led research project on Synergies between Climate Change Mitigation and Adaptation (1CN-2206: Environment Research and Technology Development Fund), AW leads the implementation of sub-theme 3 “research on transition strategies for promotion of renewable energy and harmonious adaptation toward climate neutrality.” The research aims to make recommendations on transition strategies for adaptation that harmonise with the transition to carbon neutrality, centered on renewable energy, concerning key adaptation and industrial sectors in major ASEAN countries.

### Pilot on Participatory Watershed Management

IGES and partners have been helping local governments in the Philippines develop more resilient land-use and climate change action plans through a scenario analysis and impact assessment process. In FY2021, AW prepared adaptation funding proposals for two cities (Santa Rosa City and Calapan City) to submit to the Philippine “People’s Survival Fund” for implementation of priority adaptation measures. AW also conducted a national-scale analysis of future coastal flooding in the Philippines, and found that an additional 2.5–5.8 million urban residents will be exposed to coastal flooding by 2050 if current urban growth patterns continue. (Johnson et al., 2021).

### Socio-hydrological Perspective of Climate Change Adaptation: Comparative Study in Large Riverine Islands in India, Bangladesh and Viet Nam

Amidst rapid global changes and the unfavourable environmental conditions they induce, communities in isolated riverine islands are affected due to their poor adaptive capacities. Among their main vulnerabilities are their water resources. Using a socio-hydrological approach, AW explored how the nexus of human well-being and water relations can be applied to improve adaptive measures to maintain hydrological cycles along with managing local water needs. This is a three-year project. In FY2021, socio-hydrological models were used to quantify feedbacks between water resources and communities at multiple scales with the aim of expediting stakeholder participation for the sustainable management of those resources. AW published 10 peer reviewed journal articles, two book chapters, one conference proceedings under this project. The APN secretariat was very impressed with AW’s outstanding project outputs. Based on these outputs and experience, AW is scaling up this research idea by writing a new proposal. AW organised project meetings, stakeholder meetings etc. to present research outputs and a way forward.

### Plausible Alternative Futures of Island Mangroves in the Asia-Pacific Region

AW explored future scenarios of mangroves in six island locations in Asia. Using the state of art advanced bio-geophysical modelling, the project mapped likely changes in vital ecosystem services of mangroves, namely storm surge protection, sediment retention, carbon capture and storage and nutrient recycling. The project also delivered spatial planning guidelines to optimise future land use in selected study areas using field-based stakeholder workshops.

### Locally Led Adaptation (LLA)

AW has increased engagements on Locally Led Adaptation (LLA), which has been receiving increased attention since the 2021 Climate Adaptation Summit, and especially after the Global Commission on Adaptation (GCA) launched the eight Principles on LLA. In this context, AW and APN jointly started a project on developing a model case of LLA as a direct contribution to the AP-PLAT capacity-building pillar covering South Asia, South East Asia and Pacific. AW and APN co-organised a session on “Localization of NDCs through community-led “adaptation innovation” in the Asia-Pacific region: Needs and pathways” at the Gobeshona Global Conference on LLA on 31st March. In the meantime, AW is exploring possibilities of regional partnership with renowned international initiatives and institutions such as Global Center on Adaptation (GCA)’s ‘s Global Hub on LLA, Submitted Proposal to Canada-UK programme CLARE, and initiated discussion on developing JAIF project.

### Addressing Transboundary Climate Change Risks

AW’s work on transboundary climate change risks (TBRs) has been carried out under NIES-IGES Suishinhi project, JSPS-ICSSR project, and IGES Strategic Research Fund projects mainly in collaboration with the Adaptation Without Boundaries (AWB) initiative, and several national partners in South and Southeast Asia. During 2021-2022, AW developed a project proposal in collaboration with Stockholm Environment Institute (SEI), Asian Institute of Technology (AIT), Asian Disaster Preparedness Center (ADPC), UNESCAP, University of Kentucky (KY), Institute for Sustainable Development and International Relations (IDDRI) and Universiti Kebangsaan Malaysia (UKM) on developing a regional adaptation plan for the Southeast Asian countries. AW also took the lead in drafting a chapter on global supply chains showcasing how supply chains are making local risks global and suggesting ways to mitigate the TBRs in the context of supply chains, for the EU DG CLIMA Flagship report on transboundary climate change risks. AW already received an expression of interest to engage in the subsequent flagship report. Furthermore, upon the invitation of ADB, a presentation on how ASEAN member states can mitigate TBRs through regional collaboration was delivered

at the Annual Meeting of the Greater Mekong Subregion (GMS) Working Group on Agriculture (WGA), in June 2022, Ho Chi Minh City, Viet Nam. Upon invitation, AW presented a paper on transboundary climate change risks at the international conference on climate change (May 2022, Dhaka, Bangladesh) and this paper will be developed into a chapter for a forthcoming book.

A peer-reviewed journal article on regional droughts and implications for drought forecasting and early warning was also submitted. AW conducted a series of interviews with professionals engaged with the Official Development Assistance (ODA) and industry experts on TBRs and the outcome will be used to develop a structured survey questionnaire. A collection of case studies are being put together to showcase the TBRs in different risk transmission pathways to be finalised during 2022–23.

### Collaboration with PEMSEA

IGES has been collaborating with the Environmental Management for the Seas of East Asia (PEMSEA) since 2020 as the Regional Center of Excellence (RCoE) in Climate Change Adaptation and Disaster Risk Reduction, as well as actively engaging in activities in PEMSEA Network of Learning Centers. AW and PEMSEA have jointly been awarded a microgrant from the Adaptation Research Alliance, a network promoting action research in the field of adaptation. A pilot workshop was held in Guimaras, a coastal region in the Philippines, to contribute to the development of a local adaptation pathway.



Workshop on the local adaptation plan held in Guimaras, Philippines

### Water Environmental Management in Asia

As secretariat for the Water Environment Partnership in Asia (WEPA), AW has been contributing to the improvement of the water environment in Asian countries for over a decade. In FY2021, the WEPA annual meeting was conducted as a video

conference with the participation of government officials from 13 countries. In addition, AW supported WEPA Action Programs in Cambodia and Myanmar, and Lao PDR in order to promote concrete actions for improving water governance in each country.



WEPA Annual Meeting

### Establishment of Environmental Conservation Platform of Tonle Sap Lake

AW, in collaboration with Tokyo Institute of Technology, Institute of Technology of Cambodia and Yamagata University, successfully completed the implementation of a 6-year SATREPS project (April 2016–March 2022) funded by JICA and Japan Science and Technology Agency (JST) on establishing environmental conservation platform of Tonle Sap Lake in Cambodia, the largest inland water body in Southeast Asia. The research team worked with the Institute of Technology of Cambodia and relevant partners in both Japan and Cambodia to (i) establish a solid research-oriented structure and facilities at the Institute of Technology of Cambodia; (ii) encourage science-based management by the Government of Cambodia; and (iii) enhance the Tonle Sap Water Environmental Platform (TSWEP) to become an international hub of freshwater ecology and management in Southeast Asia. IGES team has also taken a lead in producing two policy reports entitled: “Environmental Changes in Tonle Sap Lake and its Floodplain: Status and Policy Recommendations” and “Sustainable and Resilient Tonle Sap Lake: A Progressive Scenario for Policy Action” accordingly, which reflected major findings from the project into key policy messages and guidance for decision-makers in Cambodia.

### Strengthening Capacity Development for Local Governments in ASEAN to Tackle Microplastics and Water Pollution through Decentralised Domestic Wastewater

Enormous progress has been made in 10 ASEAN Member States (“AMSS”) over



the last two decades in improving the ratio of households with access to improved sanitation facilities like septic tanks. However, sanitation is not just about toilets. It is essential to consider the whole sanitation service chain, including how to safely manage, treat, dispose and reuse treated wastewater and sludge, either on-site or off-site; using either a centralised or decentralised system. Under a new initiative funded by JAIF, AW is currently working closely with ASEAN Secretariat and AMSs to facilitate the establishment of a regional platform for strengthening of scientific and practical knowledge exchange, policy dialogues and capacity development for local governments and relevant multi-stakeholders in ASEAN countries on decentralised wastewater management, which will gradually contribute towards the achievement of relevant targets under SDG 6 on water and sanitation by 2030. Based on the results of a multi-benefit “SDG6 Model City” pilot project in an ASEAN city, a practical “Regional Guidebook on Sustainable Decentralised Domestic Wastewater Management for ASEAN Resilient and Green Cities” will be developed, which is expected to trigger a comprehensive transformation of the domestic wastewater sector in ASEAN countries on multiple levels.

#### **Riverine Microplastic Pollution in ASEAN Countries – An Investigation on the Current State of Knowledge**

Water pollution caused by microplastics generated from land-based sources (e.g. as tire-wear particles, broken road markings, synthetic textile microfiber from washing, microbeads from personal care products, discharged domestic wastewater from households, and others) is attracting attention in many countries and regions around the world as an emerging environmental problem, not only at national, regional, but also global level. Microplastics released from these sources often flow directly or indirectly into surrounding aquatic environments such as river and lake and eventually enter the ocean. Adverse impacts of microplastics on ecosystems and aquaculture organisms have been well-reported; it may gradually cause potential adverse effects on human health. Unfortunately, in most of AMSs, basic knowledge about the occurrence, ingestion and impacts of riverine microplastics pollution on ecosystem and human health is very limited. As a result, appropriate and effective countermeasures to control the emission of microplastics have not yet been established. Results from the AW study conducted in FY2021 in a number of selected ASEAN countries, including Indonesia, Philippines and Vietnam, presents a concise and insightful picture on the current state of knowledge on the occurrence, ingestion, and impacts of microplastics on ecosystems and human health. The study calls for collective efforts from all the ASEAN Member States to address the issues along the plastic value chain through the circular economy approach, from raw material extraction, design, production, distribution, responsible plastic consumption (especially single use plastic products), collection/reuse/repair, to the recycling and final disposal stage.

## **Selected Publications**

- Peer-reviewed Article “High-resolution urban change modeling and flood exposure estimation at a national scale using open geospatial data: A case study of the Philippines” (Computers, Environment and Urban Systems)
- Peer-reviewed Article “A review and meta-analysis of generative adversarial networks and their applications in remote sensing” (International Journal of Applied Earth Observation and Geoinformation)
- Peer-reviewed Article “Microplastics in freshwater environment in Asia: A systematic scientific review” (Water)
- Discussion Paper “Riverine Microplastic Pollution in ASEAN Countries - Current State of Knowledge”
- Peer-reviewed Article “Vulnerability and risk assessment to climate change in Sagar island, India” (Water)
- Submission to Policy Process “Acton Plan to Manage Marine Plastic Litter in Da Nang City by 2025, with a Vision towards 2030”
- Policy Report “Closing the Loop on Plastic Pollution in Da Nang City, Vietnam - Baseline Report” (2 versions, one in English and one in Vietnamese)
- Peer-reviewed Article “Exploring indigenous and local knowledge and practices (ILKPs) in traditional jhum cultivation for localizing sustainable development goals (SDGs): a case study from Zunheboto district of Nagaland, India” (Environmental Management)
- Peer-reviewed Article “Residents’ place attachment to urban green spaces in Greater Tokyo region: An empirical assessment of dimensionality and influencing socio-demographic factors” (Urban Forestry & Urban Greening)
- Peer-reviewed Article “Strengthening external emergency assistance for managing extreme events, systemic, and transboundary risks in Asia” (Politics and Governance)
- Proceedings “Workshop Report: Building Resilience to the Risk of Compound and Cascading Disasters in the Context of Climate Change”
- Proceedings “Achieving Coastal Resilience Through Local Knowledge-Based Adaptation Planning: A Pilot Project in Guimaras Province, Philippines”
- Issue Brief “Sustainable and Resilient Tonle Sap Lake: A Progressive Scenario for Policy Action”
- Book Chapter “Debris Flood Triggered by Cascading Hazard Phenomenon along Melamchi and Indrawati River Basins, Nepal” (Scoping Study on Compound, Cascading and Systemic Risks in the Asia Pacific)

- Peer-reviewed Article "A succinct review and analysis of drivers and impacts of agricultural land transformations in Asia" (Land Use Policy)
- Policy Report "WEPA Outlook on Water Environmental Management in Asia 2021"
- Briefing Note "気候変動交渉における損失と損害(ロス&ダメージ): これまでの議論とCOP26の成果"
- Briefing Note "気候変動適応に関するCOP26 の成果報告"
- Briefing Note "COP26を巡る気候変動適応の国際動向"
- Briefing Note "COP26と自然を活用した解決策 (Nature-based Solutions: NbS)"
- Translation "適応ギャップ報告書2021: 差し迫る嵐—パンデミック後の世界における気候変動への適応 (エグゼクティブ・サマリー日本語翻訳版)"
- Translation "国連環境計画設立50周年を記念する国連環境総会特別セッションの政治宣言: 背景、概要と全訳"
- Translation "災害と生態系: 変化する気候の中でのレジリエンスソースブック"



Research Highlights >

## Business Taskforce

IGES has continued its activities to generate outcomes and impacts by supporting highly motivated businesses in Japan, specifically targeting the promotion of climate change and decarbonisation policies in businesses in Japan.

## Major Activities in FY2021

Business Taskforce (BIZ) has been appointed as the Secretariat of Japan Climate Leaders' Partnership (JCLP), a coalition of business in Japan, and has supported progressive companies to lead a positive momentum towards net zero in business and to contribute to the progress of climate policies in Japan<sup>1</sup>.

### Empowering Business Coalition

JCLP has continued to expand in FY2021 and its membership increased from 189 to 216. In FY2021, JCLP appointed three new Co-Chairs (i.e. (1) Yoshinori Yamashita, CEO of Ricoh Company, Ltd., (2) Masanori Imai, Chair of Toda Corporation, and (3) Masato Iwasaki, one of the representative directors at Takeda Pharmaceutical Company Limited, as well as a special advisor (Tadamori Oshima, former speaker of the House of Representative of Japan).

### Decarbonisation of Business Practices

JCLP cooperated with Climate Group to support the participation of Japanese companies in RE100<sup>2</sup>, EV100<sup>3</sup>, and EP100<sup>4</sup>. The number of RE100 companies has increased by 16 in one year. The total volume of electricity use<sup>5</sup> is about 5.3% of total electricity demand in Japan.

JCLP, IGES, ICLEI, Green Purchasing Network (GPN) and Japan Network for Climate Change Actions (JNCCA) have been running the steering committee of "RE Action", an initiative for SMEs, municipalities, educational institutions and medical institutions, to declare their commitment to 100% renewable electricity by 2050. In FY2021, RE Action expanded its membership from 151 to 269. JCLP and RE Action jointly organised a networking event aimed at encouraging business collaboration between the demand side and the supply side in terms of renewable electricity use.

<sup>1</sup> Since 2012, IGES has been appointed by JCLP as its Secretariat.

<sup>2</sup> International business initiative committed to 100% renewable power, working to massively increase corporate demand for and delivery of renewable energy.

<sup>3</sup> International business initiative aims to drive the transition to electro-mobility.

<sup>4</sup> International business initiative pledged to double the energy productivity of businesses.

<sup>5</sup> Reference figures including overseas offices.



## Policy Engagement

JCLP has been committed to active policy engagement with the support of BIZ, which is the Secretariat of JCLP. JCLP made four policy proposals in FY2021. Among others, one of the biggest impacts achieved in FY2021 was that JCLP's executives held a dialogue with the Prime Minister Fumio Kishida (refer to JCLP's press release). JCLP submitted a statement to the prime minister in person urging him that the Grand Design of the Prime Minister's vision should be drawn up in line with the 1.5°C target, enables faster expansion of renewable energy, and introduces a carbon tax or emissions trading system. Prime Minister Kishida gave the coalition some strong words of encouragement, stating, "The statement is duly received and I hope that JCLP will continue to cooperate with the government in public engagement and other areas of action." The event was covered by various media. (Asahi, 環境ビジネス etc.)

Furthermore, JCLP participated in the following meetings and committees to encourage progress of domestic and international climate policy.

- the UNSG's Expert Group to develop stronger and clearer standards for net-zero emissions pledges by non-State entities
- Liberal Democratic Party's Research Commission on Environment and Global Warming Countermeasures (環境・温暖化対策調査会)
- "Expert Panel on Climate Change" at the Cabinet Secretariat



Dialogue between JCLP executives and PM Kishida

- "中央環境審議会 総合政策部会" at MOEJ
- "炭素中立型経済社会変革小委員会" at MOEJ
- "中央環境審議会 地球環境部会 中長期の気候変動対策検討小委員会" at MOEJ
- "カーボンプライシングの活用に関する小委員会"

## Selected Publications

- Book "Corporate Management for Decarbonisation" (Nikkei Publishing, in Japanese)



Publication of "Corporate Management for Decarbonisation"

## Research Highlights >

# City Taskforce

IGES co-creates solutions and promotes policies and strategies for low-carbon/carbon neutral, resilient and sustainable societies with stakeholders in Asian cities, including those in Japan. In collaboration with other regional and international organisations and networks, IGES facilitates the sharing of solutions and strategies among like-minded cities, and contributes to enhancing implementation capacity at the city level.



## Major Activities in FY2021

### Supporting SDG Localisation through Voluntary Local Reviews (VLRs)

In FY2018, City Taskforce (CTY) supported three Japanese municipalities, namely Shimokawa Town (Hokkaido), Toyama City, and Kitakyushu City to produce the Voluntary Local Review (VLR) reports that were the first VLRs in the world together with the VLR of New York City. In FY2019, CTY supported the VLR report of the City of Hamamatsu, which the Mayor of Hamamatsu launched at an event at the SDG Summit held in New York in September 2019. IGES also published the Shimokawa Method for VLR that shows practical steps for the VLR based on the experience of VLR of Shimokawa Town, as reference material for local governments interested in conducting their VLR.

CTY provides showcases for SDG actions by local governments through the "VLR Lab," an online platform of VLR launched in March 2019 in collaboration with partner organisations including the United Cities and Local Governments Asia-Pacific (UCLG ASPAC). In June 2022, CTY published the State of the VLR 2022, the third volume of a series started in 2020 aiming to annually review the progress of the VLR movement. The report explores VLRs published in 2021 focusing on two themes - how



Research Report "State of the Voluntary Local Reviews 2022"



IGES webinar on VLR to overcome barriers to implementation

VLRs are reflecting the ongoing COVID-19 pandemic, and how VLRs accelerate the localisation of the 2030 Agenda for Sustainable Development. The report also overviewed the four years of the VLR movement to reflect on how cities are conducting successive VLRs and the emerging different approaches that have developed since 2018.

CTY also contributed to information-sharing and capacity development through organising on-line sessions on VLRs such as at the I4C (Innovative4Cities) 2021 conference (October 2021) and the Asia Smart City Conference organised by the City of Yokohama (October 2021), and also contributed to the Asia Pacific Mayors Academy led by the UNESCAP and UN-Habitat.

### Sharing Lessons and Providing Support towards Zero-carbon Cities

CTY has been supporting city-to-city collaboration projects such as “T2KLLCS” (Tokyo to Kuala Lumpur Low Carbon System) since 2019. Under a collaborative project conducted by Tokyo and Kuala Lumpur (KL), Tokyo shared its building energy efficiency and renewable energy policy schemes and knowhow, in order to support the development of a sustainable building policy framework for KL, thereby contributing to securing the city’s own budget to conduct four energy efficiency retrofit projects on KL’s public buildings and providing zero carbon scenarios towards 2050. This collaboration will continue and be strengthened from the next fiscal year through the participation of Saitama City. CTY contributed to promotion of zero carbon cities in Japan through the Carbon Mapping Project, a commission project of MOEJ in which needs of the local governments, especially small and medium-sized local governments in the

development and implementation of their zero carbon policy, in collaboration with other units at IGES, such as KUC and KRC. CTY also co-organised two side event on zero carbon cities at the Japan Pavilion at COP26 and the Zero Carbon City International Forum 2022 with MOEJ, Office of US Special Presidential Envoy for Climate, UNFCCC Secretariat, and ICLEI in March 2022.

## Selected Publications

- Peer-reviewed Article “Demand-side solutions to climate change mitigation consistent with high levels of wellbeing” (Nature Climate Change)
- Peer-reviewed Article “The impact of high-speed rail on the trajectories of shrinking cities: the case of the extension of the Shinkansen network in northern Japan” (International Planning Studies)
- Peer-reviewed Article “Integrating the Sustainable Development Goals (SDGs) into Urban Climate Plans in the UK and Japan: A Text Analysis” (Climate)
- Peer-reviewed Article “Analysis the long-term impact of low carbon transport policy in Jakarta City” (Journal Asian Research Policy)
- Research Report “State of the Voluntary Local Reviews 2022: Overcoming Barriers to Implementation”
- Discussion Paper “The role of municipalities in the renovation wave for improving energy performance in buildings”



ISAP2021 session on the role of municipalities in promoting the renovation wave



## Research Highlights >

# Finance Taskforce

Delivering on the SDGs and commitments under the Paris Agreement requires mobilising and shifting large amounts of public and private capital. To achieve low-carbon and climate resilient sustainable development, IGES is engaged in policy research and recommendations as well as capacity building. Specific areas of focus are sustainable finance (e.g. ESG investment), financial disclosure on sustainability, responses to business opportunities, and positive impact.



## Major Activities in FY2021

### Dissemination of information on Green Bonds, etc.

Finance Taskforce (FIN) has been engaged in commissioned work on green bonds from MOEJ since April 2017. In FY2021, FIN carried out the following activities related to MOEJ's policies on green financial products.

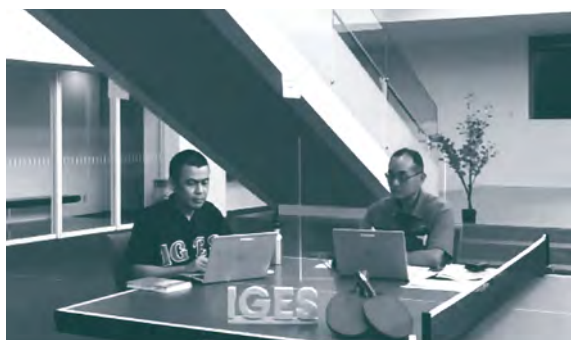
- (1) Contribution to the revision of the Guidelines for Green Bonds, etc.: In July 2022, MOEJ released the "Green Bond and Sustainability-Linked Bond Guidelines" and "Green Loan and Sustainability-Linked Loan Guidelines". FIN contributed to the development and revision of these guidelines in various ways, including providing input to MOEJ and the Green Finance Committee that was established to develop and revise the guidelines\*. Specifically, FIN made materials mainly on trends in the International Capital Markets Association's (ICMA) Green Bond Principles and the Loan Market Association's (LMA) Green Loan Principles and reported to MOEJ on points that should be considered for revision in the guidelines. These Principles are the international de facto standards for green financial products. Many of these points have been reflected in the Guidelines. In addition, FIN acted as a bridge between MOEJ and the ICMA and the LMA, received comments on the draft guidelines, and exchanged opinions as appropriate.
- (2) Dissemination of information through the website "Green Finance Portal": Since 2018, FIN has served as part of the secretariat of the MOEJ website "Green Finance Portal" and has disseminated information on international market trends, the ICMA and LMA trends mentioned above, and good practices of overseas green financial products. In FY2021, FIN has worked to enhance this information and introduce overseas examples of green financial products in areas (e.g., biodiversity) where proceeds have not been allocated in Japan, in an effort to broaden the sector of green financial products in the domestic market.

### Sustainable Finance

In order to mobilise the huge amount of funding required to implement the SDGs, it is essential to build sustainable financial systems in which the financial sector, including banks, investors and other service providers, will shift finance and investments to greener and more sustainable options. For example, the EU has taken the lead, developing the EU Action Plan on Sustainable Finance in March 2018. In Japan, the Expert Panel on Sustainable Finance, established under the Financial Services Agency (FSA), produced and issued a report to clarify the most up-to-date thinking on key aspects of sustainable finance policy. IGES has been following such global and domestic trends on sustainable finance. In

FY2021, FIN focused on mainly two areas in sustainable finance:

- (1) Strategic Partnership to Implement the Paris Agreement (SPIPA): Japan-EU Policy Dialogue on Climate Change: FIN, together with the EU Delegation in Japan, hosted a webinar on the practical implications of EU/Japan sustainable finance policy developments on EU/Japan financial institutions and industry. Furthermore, taking into consideration the important role regional financial institutions, namely regional banks, are expected to play in Japan, another webinar was held to present sustainable finance practices by a leading bank in the EU. Finally, FIN continued to produce periodic issue briefs on sustainable finance policy developments in Japan, such as those lead by the Financial Services Agency, MOEJ and METI. These issue briefs are in English and are aimed at non-Japanese stakeholders, with the intent to provide fundamental information for effective engagement.



IGES webinar on trends of financial sector towards COP26

- (2) Regional ESG finance: FIN collected and consolidated information on ESG good practices by local banks, in order to identify challenges and opportunities to enhance ESG finance at the local level, under commissioned work by MOEJ. FIN continued its work on initiatives and activities aimed to promote ESG regional finance, such as how to integrate ESG finance into the SDGs certification system in Kitakyushu, and on how to assess and report on impact on SDGs by local banks including Shiga Bank, which promotes ESG finance for local environmental conservation and decarbonisation efforts by companies.



Commercial publication on ESG

## Green & Low Carbon Technology Transfer between Middle East & North Africa and Japan

FIN explored the need and feasibility through the Strategic Research Fund to foster Japan-Middle East and North Africa (MENA) cooperation toward green economies. This research work was initiated in a partnership with the Islamic Development Bank (IsDB -Multilateral Development Bank) and the Gulf Research Center (GRC: Think Tank), targeting Saudi Arabia, Egypt and Tunisia. Building on the findings and acknowledging the uniqueness of such cooperation, the urgency of action and the momentum, IGES, IsDB and GRC agreed to continue their collaboration and proceeded with practical steps toward establishing a Japan-MENA Business Matching Platform to facilitate green and low-carbon technology transfer.

## Selected Publications

- Policy Report “インパクトレポーティングの現状・課題と提言 ―日本のグリーンボンドの再エネセクターを事例に―”
- Data/Tool “Current Status, Issues and Recommendations on Impact Reporting -A Case Study of Green Bonds for Renewable Energy Sector in Japan- English Summary”
- Briefing Note “COP26で注目された民間金融の動向”
- Issue Brief “Japan Sustainable Finance Policy Update June 2021 – September 2021”
- Issue Brief “Japan Sustainable Finance Policy Update October 2021 – January 2022”
- Issue Brief “Japan Sustainable Finance Policy Update February 2022 – April 2022”
- Book “企業経営の必須知識 ESGがよくわかる本” (Shuwa System, in Japanese)
- Issue Brief “Mobilizing Private Finance for Biodiversity”
- Commissioned Report “令和3年度グリーンファイナンスに係るイノベーション動向調査等委託業務報告書”

\* In 2022, Sustainability-Linked Bond Guidelines were newly established. Others (Green Bond Guidelines and Green Loan and Sustainability-Linked Loan Guidelines) were revised.

# Research Activity Facilities & Units



## Activities at IGES Satellite Offices

### ▶ Kansai Research Centre

The Kansai Research Centre (KRC) carries out research focusing on actions taken by the private sector, including businesses that promote environmental and energy-conservation measures, under the theme of "Business and the Environment". Specifically, KRC conducts analysis on corporate environmental behaviours in cooperation with case study countries and local governments, and develops policy recommendations for specific strategies to promote sustainable business practices in Asia by promoting the application of low-carbon and co-benefit technologies to developing countries through research on environmental and energy-saving technologies of businesses.

#### Low-carbon/Environmental Technology Transfer in India

KRC has been promoting technology transfer of Japanese low-carbon technologies (LCTs) to Indian companies through the Japan-India Technology Matchmaking Platform (JITMAP), which was launched in 2016 with The Energy and Resources Institute (TERI) with support from MOEJ. From FY2021, activities have been extended to environmental technologies such as air pollution management. In November 2021, a webinar on 'Training of Trainers on Japanese Low Carbon Technology (Steam Management Systems) for energy auditors, managers, and Indian industries' was organised, and in December 2021, a webinar on 'Japan-India Partnership on Air Pollution Control Measures for Industrial Sector in India' was held. In February 2022, a webinar was organised on 'Japan-India Partnership towards Net Zero Society - Outcomes, Lessons Learned and Way forward of JITMAP'.

In addition, a survey was conducted to identify needs for Japanese technologies in the foundry and textile sectors, which identified moulding machines for foundries and automatic weaving machines for textiles as potentially applicable Japanese technologies. An online consultation meeting was held in May 2022 with the participation of relevant government agencies, industry associations and Indian firms in the sectors, with the aim of sharing the results of this survey with Indian stakeholders as well as discussing opportunities and barriers to the introduction of the technologies.

#### Japan Platform for Redesign: Sustainable Infrastructure (JPRSI) Works

MOEJ has launched the Japan Platform for Redesign: Sustainable Infrastructure (JPRSI) to promote the overseas expansion of high-quality environmental infrastructure. In FY2021 KRC was in charge of building a network of local human



resources and identifying environmental infrastructure development projects through inter-city cooperation projects.

### Regional Circulating and Ecological Sphere (CES) Model Project in Hokusetsu Region

The Hokusetsu Satoyama Regional-CES Project is an initiative aimed at revitalising the local economy by effectively utilising local resources for the Hokusetsu area (Takarazuka City, Kawanishi City, Inagawa Town, Sanda City) in Hyogo Prefecture. Aiming to form a business model in which approximately 2,000 tonnes of timber is logged annually and converted into chips for heat, KRC contributed to launch a regional energy company that provides sales and maintenance services for wood chip boilers in FY2021.

### Contribution to Hyogo Prefecture's Environmental Policy

The active participation of local governments and non-governmental actors is essential to realising a long-term decarbonised society, which requires coordinated governance at various levels. KRC implemented the Hyogo RE100 Project and the Hyogo Zero Carbon Industry Study Group Project with the aim of contributing to the environmental policy of Hyogo Prefecture. The Hyogo RE100 Project collected basic information on energy consumers in the industrial and business sectors, and provided stakeholders with strategic information and ideas for the effective promotion of renewable energy, while stimulating discussion and action, and considering effective policy options for a decarbonised society at the prefectural level. The Hyogo Zero Carbon Industry Study Group project exchanged information on efforts to decarbonise the industrial sector and discussed future directions, with large companies in the steel industry and other carbon intensive sectors as members.



Hyogo zero carbon industry study group project (Kobe, Japan)

### Collaborative Lecture Course on Decarbonised Society at Kobe University

In collaboration with Kobe University's Econo-Legal Studies (ELS) programme, KRC held a series of lectures on carbon-free society in 2021. The lectures covered UNFCCC, national initiatives under the Paris Agreement, energy policy, carbon pricing, initiatives by private companies and financial institutions, local governments and regional energy companies, and discussed the legal systems and socio-economic mechanisms necessary for the formation of a decarbonised

society. In the second half of the year, the workshop was continued by those who wished to attend, and messages from the participants were compiled for the decarbonisation of Kobe University and the promotion of decarbonisation in collaboration with Kobe City and other municipalities and local communities.

### Support for Hyogo High School Environmental / Future Leader Development Project

KRC planned, drafted and moderated the five-day 'Hyogo High School Environmental and Future Leaders Development Project' organised by Hyogo Prefecture and the Hyogo Environmental Advancement Association. The theme was 'Climate Change Countermeasures and Realisation of a Carbon-free Society', and the first two days consisted of understanding the reality of climate change, its impact on the economy, society and the environment, countermeasures in each country, local initiatives, etc. The third and fourth days consisted of creating a draft message as high school students. On the fifth day, they presented their results in front of the head of the prefectural environmental department and the media. A total of 39 participants from 14 schools in the prefecture took part, and in the final session they were divided into nine groups and presented their messages to society on a wide range of topics, including food loss prevention, sustainable waste disposal and the promotion of meat alternatives.



Hyogo high school environmental / future leader development project (Kobe, Japan)

### Selected Publications

- Discussion Paper “事業所への太陽光発電導入障壁と非FIT時代における導入促進施策：兵庫県内事業者への調査と先進事例からの考察”
- PR Material “Promoting clean, high-efficiency Japanese technologies and practices in Indian industries -Success Stories and Scope for Scaling Up-”
- Data/Tool “これからの事業存続のために知っておきたい再生可能エネルギー活用のためのキーワード (Ver.2)”

## Kitakyushu Urban Centre

The Kitakyushu Office was established in 1999 in the City of Kitakyushu, which made the transition from a city known for pollution to an environmentally-advanced city. Kitakyushu aims to become the world's environmental capital. In 2010, the office was renamed as the Kitakyushu Urban Centre (KUC) and currently conducts practical research activities with Asian cities to promote local governmental initiatives to realise sustainable cities in the areas of low-carbon and resilient cities, sound waste management, and green growth and sound urban environmental management.

### Mainstreaming Low-carbon and Resilient Policies into Urban Planning and Implementation

In light of the increasing number of commitments to zero-carbon declared by cities in Japan, KUC conducted a needs survey for zero-carbon cities in Kyushu on action plan development and implementation. Based on the results, KUC studied what the best approach would be for supporting local governments and how to effectively implementing an urban carbon mapping tool. In addition, considering the fact that residents must make lifestyle changes to make the transition to a zero-carbon city, KUC conducted awareness-raising activities in Kitakyushu and Kagoshima by holding a "Workshop on Decarbonized Lifestyles", with a view to creating a template of the workshop that can be deployed in other municipalities. In addition, KUC participated in individual projects (i.e. collaboration projects between Hai Phong City – Kitakyushu City; Koror State – Kitakyushu; Soc Trang – Hiroshima Prefecture) as part of MOEJ's "City-to-City Collaboration Project for a Zero Carbon Society" (19 projects were adopted in FY2021). This project aims to take zero/low-carbon technologies and know-how accumulated in Japanese cities

and deploy them overseas under the framework of city-to-city collaboration. KUC has been acting as the secretariat for this project platform continuously since FY2013, and has contributed to maintaining momentum toward the realisation of a zero-carbon society at the city level in Japan and internationally, even in the face of the COVID-19 pandemic. Regarding the Hai Phong City – Kitakyushu City collaboration, zero-carbon scenario development using the Asia-Pacific Integrated Model (AIM) was also initiated.

### Evolving Sustainable Waste Management Practices

With the aim of building a resource-circulating society at the city level, KUC provided various support to central and local governments, as well as to international organisations in Asia. Specifically, IGES was commissioned by UN-HABITAT to be an implementation partner of the Healthy Oceans Clean Cities Initiative (HOCCI), a project to reduce marine plastics in six model cities in the Philippines. Among other activities, KUC was responsible for the development of three national-level policy papers, education materials, and coordination with Calapan and Davao cities for the preparation of their action plans for marine litter reduction and pilot project concept notes. In addition, a feasibility study on the establishment of a resource-circulating model targeting plastic waste in Samet Island, Thailand was initiated under funding from the Alliance to End Plastic Waste (AEPW). KUC also supported the development of a national action plan for reducing marine plastic litter in Myanmar and Cambodia as part of JAIF. KUC assisted a project in charge of conducting waste surveys and capacity building in three cities in Cambodia. In Japan, KUC contributed to the development of the "Kitakyushu Circular Economy Vision" which shows the future direction of environmental industries located in Kitakyushu in transition to a circular economy, working in collaboration with a local business consortium and publishing a report. Besides



Webinar on challenge for decarbonisation by cities



Kitakyushu Circular Economy Study Committee's final reporting meeting

that, KUC also provided technical assistance to a company based in Kitakyushu City that aimed to initiate a composting business using municipal solid waste in Indonesia. Lastly, KUC collaborated with a university in Slovenia to develop policy recommendations for resilient circular regions as well as collaboration with a university in Norway to underpin circularity at the city level.

### **Promoting Green Growth and Sound Urban Environmental Management (Localising SDGs in Kitakyushu City and Kyushu Region)**

KUC researchers have been acknowledged as practitioners and experts on SDGs localisation, and have been invited to various important international and domestic events as speakers and facilitators. Regarding the OECD's Territorial Approach to the SDGs, KUC contributed to the successful finalisation of Kitakyushu City's report and launch event in June 2021. As a follow up activity, a KUC researcher has been assigned as a member of the Steering Committee of OECD, and contributed to the development of a good practice collection, "Tool Kit". As for the KUC initiative, KUC organised the 3rd Kitakyushu SDGs Training online in March 2022, adding Goto City, Nagasaki Prefecture to the training as well as Kitakyushu City. KUC is also a committee member for the evaluation process to select award nominees for the Kitakyushu SDGs Award. KUC provides lectures and workshops at an increasing number of universities in Kyushu including Kyushu Institute of Technology, Kyushu International University, University of Kitakyushu, Seinan Women's University and Nagasaki University. As a new initiative, IGES led a discussion with MOEJ regional office in Kyushu, the City of Kitakyushu, and local financial institutes to develop a local ESG finance scheme in a conjunction with the SDGs registration programme targeting local SMEs set up by the city government, and KUC proposed a scheme to the city government.

### **Selected Publications**

- Book Chapter "Enabling Japan's Low Emissions Technology Collaboration with Southeast Asia: The Role of Co-innovation and Co-benefits" (Aligning Climate Change and Sustainable Development Policies in Asia)
- Article "Establishing a New Balance: A Fair Marriage between Global and Local Value Chains" (Global Solutions)
- Article "Circular Economy in a Global Market Perspective" (Global Solutions)
- Peer-reviewed Article "Trends of the Zero Carbon Cities in Japan" (Asian Research Policy)
- Fact Sheet "Pathway to a Zero Carbon City: Island of Energy, Goto City, Japan"
- MOEJ Brochure "City-to-City Collaboration for Zero-Carbon Society 2021"

- Kitakyushu Circular Economy Study Committee Report "Creating a Vision for the Environmental Industry of Tomorrow's Kitakyushu" (in Japanese)

## **Regional Centre in Bangkok**

IGES Regional Centre in Bangkok (BRC) has served as a hub for networks and partnerships in the Asia-Pacific region since its establishment in 2011. It focuses on priority issues including climate change mitigation, adaptation, environmental safeguards and sustainable cities, and manages relevant networks for knowledge sharing, as well as implements relevant projects in close collaboration with various supporting organisations and national and sub-national governments.

### **Climate Change Mitigation**

The UNFCCC-IGES Regional Collaboration Centre (RCC) provides multifaceted support to facilitate the implementation of the Paris Agreement. RCC organised two workshops on Good Practices in NDC Update and Implementation, one for Asia, Middle East and North Africa, and the other for the Pacific. Regarding climate finance, RCC has been implementing several Needs-Based-Finance projects in a number of subregions, including ASEAN, Asian LDCs, Central Asia and South Caucasus. On market mechanisms, RCC continues to provide support for the Clean Development Mechanism (CDM) and standardised baselines in the Asia-Pacific region and assists ASEAN countries and Pakistan in exploring the potential of carbon pricing instruments. RCC has also played a more prominent role for monitoring, reporting and verification (MRV) networks in South East and South Asian countries, and has paired with partners to organise a series of virtual workshops on the Enhanced Transparency Framework and existing MRV mechanisms.

### **Climate Change Adaptation**

The second phase of the project on disaster risk reduction by integrating climate change projection into risk assessments (ASEAN DRR-CCA) has been designed to widen the application of methodologies and multi-sectoral approaches developed to manage risk, through risk assessments at country-level, scenario building, modelling, downscaling exercises, using river basin pilot models (RBPs) as trial study area and providing adequate transfer of necessary knowledge, tools and techniques through joint-implementation.

The project aims to build a strong basis for developing an integrated approach to long-term management of floods, drought and landslide in ASEAN. It also targets

long-term positive impact and aims to make meaningful progress by improving institutional mechanisms and integration of DRR/CCA into development plans, to help address future risks and enhance better inter-ministerial/agency coordination as a step forward in risk reduction planning and implementation.



ASEAN DRR-CCA website

The Inception Meeting for Phase 2 will take place in November 2022. Phase 1 made great achievements, carried out 15 major activities with more than 600 participants altogether. Activities were designed in a participatory manner, engaging all key agencies, ensuring multi-stakeholder cooperation. The final output contributed to the regional and global efforts on disaster risk reduction, including its Contributing Paper to the Global Assessment Report on Disaster Risk Reduction (GAR2022), two guidelines endorsed by ASEAN countries, and also receiving the 3rd Mountain View Award for Best Impact Generation. More details can be found on the project website [<http://aseandrr.org>]

In addition, BRC contributed to the launch of the Asia-Pacific Adaptation Information Platform (AP-PLAT) Capacity Development Program together with AW. Under MOEJ commissioned work, BRC launched a portal site on the AP-PLAT website for capacity development, and developed four e-learning modules and publications on adaptation. BRC also organised a consultation meeting for AP-PLAT capacity development with partner organisations to enhance networking activities. For outreach activities, AP-PLAT sessions were organised at Asia-Pacific Climate Week and COP26.

### Localising the SDGs in ASEAN Cities

In FY2021, BRC project team focused on two primary activities: (1) the reporting, promotion and dissemination of results and achievements (including showcase publications and videos) of the the ASEAN SDGs Frontrunner Cities Programme Phase 1 (SDGs-FC 1 completed in Dec 2020) at various national/regional/global events, including at the 12th High-Level Seminar on Sustainable Cities 21-22 Feb 2022; and (2) development of project proposal of the SDGs-FC Phase 2 for approval by the funder (JAIF) and ASEAN Member States. Phase 1 outputs and Phase 2 proposal have been presented to the appraisal processes of the JAIF Management Team, followed by the 19th Annual Mtg. of ASEAN Working Group on Environmentally Sustainable Cities (AWGESC), 15th ASEAN-Japan Dialogue on Environmental Cooperation (AJDEC), and the 18th ASEAN Plus Three Senior

Officials on Environment (SOME) in 2021. As the Phase 2 project proposal is expected to be fully approved by September 2022 towards project inception in November 2022, BRC initiated preparatory work and consultations with key project focal points at the start of 2022.

### Environmental Compliance and Enforcement

Asian Environmental Compliance and Enforcement Network (AECEN) co-hosted the Environmental Law Champions Lecture Series including 2021 including Compliance and Enforcement in Environmental Impact Assessment, Environmental Crime - An Overview, Case Study on Waste Crime - Prosecuting the Export of UK Solid Waste to Other Countries, and Ecocide as a new international crime. The Lecture Series was designed to promote environmental law and provide opportunity for the networking for the Environmental Law Champions which include university lectures, trainers, government officials and practitioners dedicated to strengthen capacity for effective environmental governance in countries of the Asia-Pacific. Each webinar has been placed on ADB e-learn and will provide certificates for those who have completed the course. In addition, AECEN also represents the regional network in 24-hour Environmental Rule of Law Celebration (Marking 40 Years of the Montevideo Programme and 50 Years of Environmental Law). In addition, AECEN has been in discussions with Environmental Law Institute (ELI) and International Network for Environmental Compliance and Enforcement (INECE) about co-hosting a webinar series on enforcing climate legislation and drafting enforceable climate legislation, and enforcing requirements of environmental impact assessment, which will be conducted in FY2022.

### Sustainable Consumption and Production (SCP)

In Cambodia, BRC has led experts under SWITCH-Asia technical assistance to enhance policies on SCP and circular economy in the garment sector, including preparation for a policy analysis report, and conducting consultations with stakeholders and SWITCH-Asia Grant projects.

In collaboration with MOEJ, BRC completed a publication on Policy Analysis: Improving Sustainable Consumption and Production (SCP) in the Garment Sector in Cambodia. This upcoming document focuses on the management of resources, waste, wastewater and chemical flows. It aims to assist policymakers in relevant ministries, as well as other stakeholders, to better identify areas of opportunity for further action towards SCP. A series of policy recommendations are also provided in order to accelerate the shift towards SCP in Cambodia's garment sector, and to future-proof the sector against the increasing demand for sustainable production practices in the global market.



In Viet Nam, BRC led experts under SWITCH-Asia technical assistance on enhancing SCP in the seafood sector by conducting policy assessment and capacity building. In collaboration with the Ministry of Industry and Trade, several publications have been produced and are soon to be published. Guidelines for SCP in the seafood sector in Viet Nam provide a holistic systems approach, based on sustainability issues in the different stages of the seafood supply chain, with a particular focus on Pangasius as a species of particular importance to the Vietnamese seafood sector. The guidelines aim to assist decision-makers in the seafood supply chain along with policymakers who need to know how to sustainably source, manufacture, and export seafood products and apply for certification schemes for eco-labels to improve the market recognition of their products. The guidelines will also help consumers and consumer groups to understand the consumption aspects of SCP in the seafood sector. Two supporting publications will also be published shortly: the Manual on Resource Efficiency – Cleaner Production in the Pangasius Processing Sector and the Sustainable Seafood Consumer Awareness Campaigns Guidance Note.

#### Selected Publications

- Policy Report “Private Sector Perspectives on Carbon Pricing Instruments in ASEAN”
- Book Chapter “Disaster Risk Reduction in the ASEAN region: Understanding and assessing systematic risks of floods and landslides in a river basin context” (Global Assessment Report on Disaster Risk Reduction 2022 (GAR2022))
- E-learning modules on adaptation (4 modules)
- “Capacity Development” for climate change adaptation in international cooperation

### ► Beijing Office <IGES Sino-Japan Cooperation Project Office>

The Beijing Office was set up within the Sino-Japan Friendship Center for Environmental Protection of the Ministry of Environmental Protection of China (currently the Ministry of Ecology and Environment of China) in 2006 as a base to facilitate the implementation of research activities in China. The office conducts a variety of studies and research activities based on bilateral cooperation with China, as well as multilateral cooperation (including international organisations).

#### Promoting Co-benefits of Better Air Quality and CO<sub>2</sub> Reduction in China through Model Projects

The “Japan-China inter-city cooperation project” was started in FY2014 to improve air quality in China, based on the existing relationship of friendship cities between Japan and China, and aimed at promoting Japan-China cooperation mainly by capacity building. This period of cooperation (Phase 1) ended in FY2018. From FY2019, a new cooperation project (Phase 2) started based on the “Agreement between the Ministry of the Environment, Japan, and the Ministry of Ecology and Environment of the People’s Republic of China on cooperation to implement research and model projects to improve air quality,” which was signed by the Ministers of the Environment of Japan and China at the Tripartite Environment Ministers Meeting among Japan, China and Korea (TEMM) in June 2018. In line with the policies of cooperation in Phase 2 shown below, IGES carried out model projects and research from FY2019 through coordination with stakeholders and local governments in Japan and China. The results of Phase 2 were highly appreciated by both Japan and China in the summary at the Japan-China joint conference convened in February 2022, and Phase 2 was concluded successfully.

Good results were obtained from some of the model projects implemented in China, and the aim was to deploy them in third countries (e.g. Indonesia). To this end, IGES engaged in discussion and coordination with relevant parties in Japan and in third countries, to consider the possibilities of developing model projects using the Joint Crediting Mechanism (JCM) scheme.

#### Policies of Cooperation in Phase 2

When deciding specific content for cooperation, research and model projects should be selected and implemented so as to fulfill the conditions shown below:

|   |   |
|---|---|
| 1 | Impact given to policies and contribution to better air quality                                       |
| 2 | Co-benefits of GHG reduction  |
| 3 | Contribution of Japanese environmental technologies and facilities                                    |
| 4 | Possibilities of horizontal development in China and development to Asian countries (third countries) |

Major activities of the model projects etc. implemented in Phase 2 are as follows.

|   |  |
|---|--|
| 1 | [Shenyang city ] Research on measures for reduction of particulate matter emissions by utilising crop residues   |
| 2 | [Chongqing city, Shanghai city, and Sino-Japan Friendship Center for Environmental Protection] Model project on measures to control small-scale distributed sources of air pollution in the restaurant industry  |
| 3 | [Guangdong province] Model project on reduction of VOC emissions from manufacturers  |
| 4 | [Xi'an city] Research on measures in priority areas to reduce ozone pollution over wide areas  |
| 5 | [Sino-Japan Friendship Center for Environmental Protection] Building a platform to introduce Japanese VOC technologies and incorporating them into China Ecological & Environmental Technology Transformation (CEETT)  |
|   | [Reference: an example of deploying the results of a model project in China in a third country] The results of the model project implemented in Phase 1 on energy conservation and reduction of pollutant emissions in textile dyeing industry is under consideration to be deployed in Indonesia. |



Japan-China joint conference convened in February 2022



Site survey conducted in Japan for research on measures to reduce particulate matter emissions using crop residues

### Selected Publications

- Serial columns in “Kankyo Shimbun” (every month) issued by Kankyoshimbunsha, Co., Ltd.
- Serial columns in “Global Net” magazine (every two months) issued by Global Environmental Forum

## ▶ Tokyo Sustainability Forum

The Tokyo Sustainability Forum (TSF) aims to facilitate impact generation with various stakeholders, particularly those based in Tokyo. It hosts the IPBES Technical Support Unit and is co-located with the ICLEI Japan office. The Forum also works in collaboration with the Biodiversity and Forests Area and the City Taskforce.

### IPBES Technical Support Unit

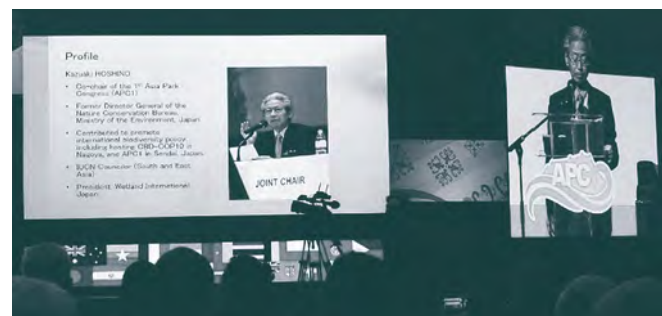
TSF continued to host the IPBES Technical Support Unit for the Assessment of Invasive Alien Species (TSU-IAS), and supported its work, including the development of a thematic assessment report on invasive alien species.

### International Collaboration on Environmental Impact Assessment (EIA)

In order to promote international collaboration on EIA in other Asian countries, and commissioned by the MOEJ/ Nippon Koei Co., Ltd., TSF conducted comparative research on selected countries' systems and their implementation related to the target projects covered by EIA. The commissioned work from the EIA division of the Minister's Secretariat of MOEJ was completed in 2021.

### Support for Preparations to Hold the 2nd Asia Parks Congress

The Second Asia Parks Congress was held in Kota Kinabalu, Malaysia in May 2022, and TSF was commissioned by MOEJ to draft a presentation by the government

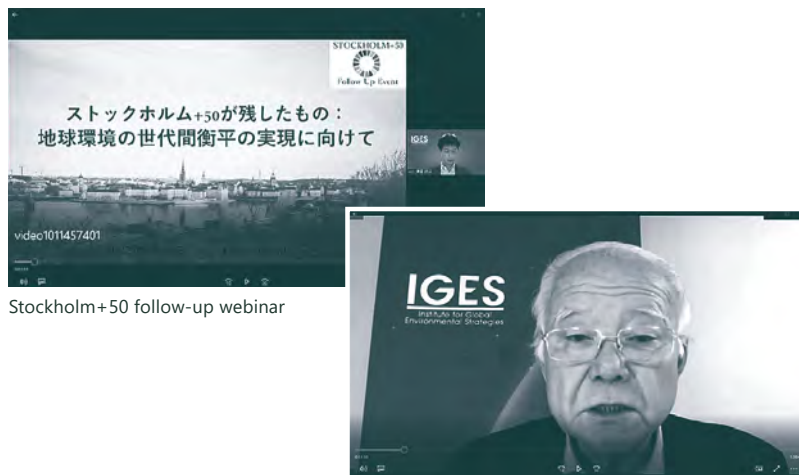


Second Asia Parks Congress (photo by National Parks Foundation)

of Japan. TSF also set up a working group on “Nature-based Solutions (NbS)”, including preparations for the draft NbS promotion guidebook, etc.

### Maintenance and Improvement of the Office Environment

Efforts were made to maintain and improve the office environment to facilitate the activities of Tokyo-based IGES Management, Senior fellows and Fellows, in the face of the COVID-19 pandemic.



Stockholm+50 follow-up webinar

### Selected Publications

- FY2021 Commissioned Report for the 2nd Asia Parks Congress preparation support project

## Activities at Other Facilities

### ▶ Technical Support Unit (TSU) for the Intergovernmental Panel on Climate Change (IPCC) Task Force on National Greenhouse Gas Inventories (TFI)

The TSU for IPCC TFI provides scientific, technical and organisational support to the TFI under the supervision of the TFI Bureau (TFB) to fulfil the following two objectives.

- To develop and refine an internationally-agreed methodology and software for the calculation and reporting of national GHG emissions and removals;
- To encourage the widespread use of this methodology by countries participating in the IPCC and by signatories of UNFCCC.

#### Development, Maintenance and Improvement of IPCC Inventory Software

The IPCC Inventory Software<sup>1</sup> helps inventory compilers to estimate emissions and removals of GHG according to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (2006 IPCC Guidelines). In FY2021, TSU worked extensively in developing the software through drafting specifications for the updates, contracting the software company and testing beta versions of the software, as well as developing supporting tools, such as Excel files and add-ons. TSU has attended a number of events to present the software, and participated in workshops organised by the UNFCCC Secretariat on training in its use.

#### Management of IPCC Emission Factor Database (EFDB)

The IPCC EFDB<sup>2</sup> is a database of emission factors and other parameters. By using this database, national experts can find nationally appropriate values to develop national GHG inventories in accordance with the IPCC inventory guidelines. In FY2021, TSU continued enhancing the usefulness of the database by collecting data, organising relevant expert meetings, including data meetings in all sectors, and supporting the EFDB Editorial Board, as well as implementing managing and developing activities to improve the use of the database.

<sup>1</sup> <http://www.ipcc-nggip.iges.or.jp/software/index.html>

<sup>2</sup> <http://www.ipcc-nggip.iges.or.jp/EFDB/main.php>



Third IPCC expert meeting on SLCF (April 2022)



20th editorial board meeting and joint 19th &amp; 20th data meeting for the IPCC emission factor database (Bilbao, Spain, June 2022)

### Production of Methodological Reports

TSU concluded preparatory work to produce a new Methodology Report on estimation of Short-lived Climate Forcers (SLCF) emissions, following the decision taken by the IPCC at its 49th Session. TSU collected information on SLCFs sources and estimation methodologies, held two meetings with remote participants, produced two reports with all info shared at the meetings including information in tabular form of source categories of SLCFs as well as of associated methods and datasets already available. Furthermore, TSU worked on corrigenda for the 2006 IPCC Guidelines and their 2019 Refinement.

### Collaboration with Other Organisations

In FY2021, TSU continued cooperation with other organisations on inventory-related matters. For example, TSU contributed its support to inventory-related capacity building programmes implemented by the UNFCCC and NIES by participating to virtual events organised by those organisations as well as by providing inventory-related materials developed by the IPCC TFI.

TSU also collaborated with other projects in IGES, where possible, on matters relating to estimation of GHG emissions and removals.

## ► Asia-Pacific Network for Global Change Research (APN)

APN is an intergovernmental network that aims to promote collaborative research and to develop the capacity of scientists, practitioners and others, especially in developing countries, on the following areas: climate; biodiversity and ecosystems; air, land, coasts and oceans; food, water and energy; risk and resilience; and human dimensions. Through research, capacity development, science-policy interactions and stakeholder engagement, APN contributes towards a dynamic and responsive Asia-Pacific community effectively addressing global change and sustainability through innovative and transdisciplinary research and capacity development activities.

### Collaborative Regional Research Programme

To contribute to the development of policy options that respond to global change from the scientific perspective in the Asia-Pacific region, the 47th Steering Committee Meeting of APN approved funding to support 13 regional research proposals under the Collaborative Regional Research Programme (CRRP). These were selected from the APN FY2020 Call for Proposals for support in FY2021.

### Scientific Capacity Development Programme (CAPaBLE)

To build the scientific capacity in research on global change and sustainability in developing countries, the 47th Steering Committee Meeting of APN approved funding to support 11 proposals under the Scientific Capacity Development Programme (CAPaBLE). These were selected from the APN FY2020 Call for Proposals for support in FY2021.

### Direction and Activities of APN

#### i. Contribution to the IPCC Sixth Assessment Report (AR6)

Over 100 publications from APN projects and activities that have been cited in the Working Groups I, II and III contributions to the IPCC AR6. The majority (76%) of the cited APN publications were referenced in the Working Group II report, Climate Change 2022: Impacts, Adaptation and Vulnerability, particularly Chapter 10 (Asia), Chapter 15 (Small Islands), and Chapter 5 (Food, fibre, and other ecosystem products).

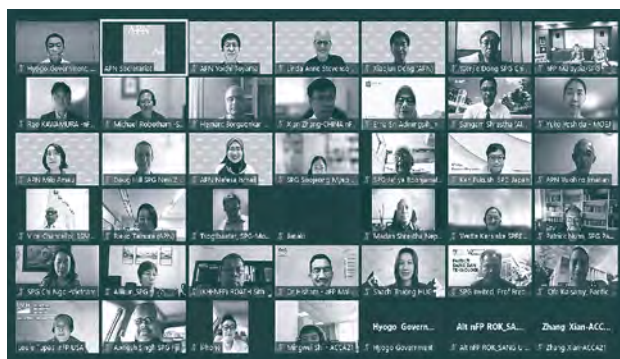


## ii. Enhancing Strategic Relationships with Relevant Organisations

To enhance strategic relationships with global change and sustainability organisations, the First Workshop between the Alliance of International Science Organizations (ANSO) and APN was held online in January 2022 and two Joint Study Group Meetings between the North Pacific Marine Science Organization (PICES) and APN were held online in February and May 2022.

## iii. Extension of the Fifth Strategic Plan

The 25th Intergovernmental Meeting (IGM) held online in June 2022 decided to extend the fifth strategic phase (2020-2024) by two years, given that the progress of activities and projects planned for this period has been significantly stalled and delayed due to the severe impact of the COVID-19 pandemic.



The 25th Intergovernmental Meeting (IGM)

## iv. Collaborative Projects with IGES

With APN funding, two projects are currently underway. The first is with APN and IGES-KRC and on Regional Circulating and Ecological Sphere (Regional-CES) in the Philippines, Thailand and Viet Nam. The second is with IGES-BRC and IGES-HQ on Locally Led Adaption in the Asia-Pacific region that is expected to contribute to the capacity development component of AP-PLAT.

## Contribution at Environmental Forums

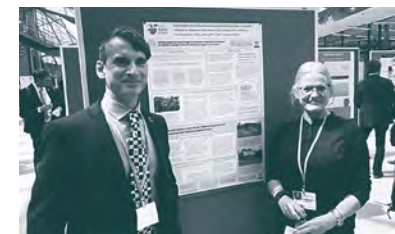
### i. Contribution at International Science-Policy Forums

APN made presentations and participated in discussions in a number of in person/online/hybrid international forums, including COP26 held in Glasgow, UK in October-November 2021, and the 14th



COP26 side event

meeting of the UNFCCC SBSTA Research Dialogue held in Bonn, Germany in June 2022. At COP26, APN presented at a side event on the role of information platforms for climate-resilient societies in the Asia-Pacific region, which was jointly organised by NIES, MOEJ and IGES. At SBSTA56, APN presented a poster to showcase the outcomes of two IPCC-cited projects. At the end of the FY2021, APN also attended the 9th Plenary of IPBES and presented a poster at the Stakeholder Day, held in Bonn, Germany in July 2022.



Poster presentation at SBSTA56

## ii. Joint Activities with the Hyogo Prefectural Government

APN and the Hyogo Prefectural Government, which hosts the Secretariat and provides operational support to APN, jointly organises annual forums to raise awareness on environmental issues among the residents of Hyogo Prefecture. In FY2021, APN and the Hyogo Prefectural Government jointly organised a hybrid-style seminar on "SDGs·Climate Change and Food Loss" in December 2021 in Kobe. APN, Asian Disaster Reduction Center, JICA Kansai Center and the Graduate School of Disaster Resilience and Governance, University of Hyogo, jointly organised an online forum entitled "Climate Change and Disaster Reduction" in February 2022.

## Japanese Center for International Studies in Ecology (JISE)

JISE primarily carries out field surveys and practical research to restore and reconstruct ecosystems and biodiversity from local to global levels aiming to realise societies based on sustainable development from the perspective of plant ecology. In FY2021, JISE implemented the following activities, including training and information collection and provision on forests, nature regeneration and ecology.

### Research Projects

On the international research front, JISE conducted basic and practical research projects aimed at the regeneration of tropical forests mainly in Malaysia, Kenya and Lao PDR, which were partially supported by external research grants. The projects promoted hands-on activities for reforestation and nature restoration

by using ecological approaches to clarify floristic composition and structure of natural forests and growth conditions of planted trees and raised seedlings, and by providing technical support for school children to learn about biodiversity in educational institutions. JISE analysed vegetation data and growth data of regenerated forests in Malaysia and Kenya, and presented the results at international conferences. In addition, JISE promoted studies on raising young seedlings of useful tree species aiming at regeneration of Satoyama forests as well as restoration of degraded forests in Southeast Asia in collaboration with the IGES Biodiversity and Forests Area.

On the domestic front, JISE carried out research on environmental conservation forests, which included monitoring their growth processes, comparative studies of natural vegetation and secondary vegetation, as well as studies to develop quantitative evaluation methods for the disaster mitigation functions of vegetation resources, particularly fire protection functions. Some outputs of the above-mentioned research were presented at various domestic academic meetings, as well as being published in the annual bulletin "Eco- Habitat", the "JISE REPORT" and newsletters. In light of restrictions on field surveys due to COVID-19, it was a good opportunity to summarise research results so far, with several research papers being published.

In addition to the above, JISE conducted other projects commissioned by private companies, local governments and non-profit organisations. These included vegetation surveys and planning for forest and nature restoration, technical instruction in tree planting as well as vegetation monitoring surveys in forest and nature restoration areas in several prefectures including Tokyo and Nagano.



Tree planting festival in Nagano Prefecture

### Capacity Building

Previously held in-person, capacity development programmes for the purpose of capacity building programmes were cancelled or postponed to prevent the spread of COVID-19 infection. For the first time, JISE held an online environmental learning session and many children participated during their summer vacation. JISE also contributed as an instructor in the "Environmental Study Leader Training Course" (held online) which was organised by the Kanagawa Environmental Science Center.

### Interaction

JISE conducted an Open Forum in May 2022, which is held every year, entitled "Role of the Green Environment in Local Communities -Activities of JISE", including tree planting, disaster prevention, and environmental education. It provided an opportunity to reconsider the role of the green environment in local communities, and to discuss domestic and international activities in which JISE has been involved. In addition, an open workshop was held on the theme of "Overseas Forest Conservation and Stakeholder Collaboration," in which external speakers were invited to report and discuss the results and challenges of overseas environmental restoration support activities. Both sessions were held online, attracting participants from a wide range of fields, including students, company representatives and individuals, in addition to researchers in the environmental field.

### Dissemination and Public Awareness

To disseminate news of JISE's activities and for public relations purposes, JISE distributed newsletters (three issues a year) highlighting its own activities as well as the efforts of various organisations in environmental conservation. JISE also published its annual bulletin "Eco-Habitat: JISE Research" and the occasional



Online session "Mysterious world as seen through a microscope"

publication “JISE REPORT” (one issue), which reports field surveys and practical activities for ecosystem conservation.

## ► Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Technical Support Unit for the Assessment of Invasive Alien Species (TSU-IAS)

IGES has been hosting the technical support unit for the IPBES assessment of invasive alien species and their control (IPBES-TSU-IAS) since February 2019 at TSF. The TSU has functioned as an extension of the IPBES secretariat that is headquartered in Bonn, Germany. The purpose of the TSU has been to support and assist in the coordination of the IPBES invasive alien species assessment, including drafting the assessment report.

The IPBES assessment of invasive alien species was launched in May 2019. In this project, around 90 experts selected from more than 40 countries are working on the scientific assessment of the status and trends of invasive alien species, their impacts to biodiversity and socio-economy, and policies or measures for their prevention and management. The final report and its summary for policymakers will be published in 2023.

IPBES-TSU-IAS has been providing support to the overall coordination for drafting work on the assessment report including the planning of the assessment timeline, organisation of author meetings, and managing references and data. In FY2021, the TSU organised the dialogue meeting for national focal points (January 2022, online), dialogue workshop for stakeholders (January 2022, online), and the third author meeting (April 2022; Aarhus, Denmark and online). Additionally, it contributed to the organisation of the third dialogue workshop between authors and representatives of indigenous peoples and local communities (February 2022, online).

Funding for TSU operations is provided by the UNEP Trust Fund, matched by contributions from MOEJ.



Third author meeting (Aarhus, Denmark)

### About IPBES

IPBES is an intergovernmental body established in 2012 with the objective to strengthen the interface between science and policy related to biodiversity and ecosystem services. IPBES has four functions, scientific assessment, capacity building, knowledge generation and policy support. These functions are the pillars of IPBES' efforts to ascertain the status and trends of global biodiversity and ecosystem services, the drivers of change, and the impacts on human wellbeing.

The reports IPBES has produced to date include those on the assessment of pollinators and pollination, the methodological assessment of scenarios and models, four regional assessments, the assessment of land degradation and restoration, and the global assessment. These outputs are expected to not only assess the state of progress in meeting the global biodiversity targets under the Convention on Biological Diversity as well as the SDGs, but also to contribute to policymaking at various levels, from local to international.



# Strategic Management Office (SMO)

The 8th Phase Integrative Strategic Research Programme (ISRP8) that began in FY2021, introduces common focus areas (and sub-focus areas) in which each research unit should work together to form a higher level of impact from strategic research and research results. The Strategic Management Office (SMO) coordinates cross-cutting research activities and promotes the strengthening of the impact generating capacity of the organisation as a whole.



## Major Activities in FY2021

### Coordination of IGES Participation in Major International Policy Processes

SMO played a facilitation role in encouraging cross unit collaboration in major international processes or events, including the Asia-Pacific Forum on Sustainable Development (APFSD), the High-level Political Forum on Sustainable Development (HLPF), Conferences of the Parties (COPs) to the UNFCCC as well as to the Convention on Biological Diversity (CBD), United Nations Environment Assembly (UNEA), the G7 and the G20. Furthermore, at the preparation stage of these international processes, IGES released key messages and policy recommendations and held press seminars. During the events, IGES participated in and arranged side events and engaged in information dissemination and sharing through social media. Likewise, after the events, the institute published commentaries, carried out translation of key documents, and held webinars on insights and interpretation of these processes and events. In this way, IGES focused on disseminating results and generating impacts on multiple levels.

### Promoting and Supporting Strategic Research

SMO provides consistent support for various aspects of IGES strategic research, from consultation on research project planning and external funding acquisition, to peer review of research outputs, management of approval processes, and management of data related to publications. SMO also coordinates research on strategic priority issues and timely topics, and support for research and publications (IGES Strategic Research Fund and Strategic Publication Fund).

In FY2021, IGES met all of its targets on outputs for the year as established in ISRP8 (150 strategic publications, 100 academic publications, 20 academic publications with IGES researchers as the first author). These have led to inputs into key national and international policy formation processes on climate change, SDGs, waste management, and others, as well as numerous publications of articles in peer-reviewed journals with a high impact factor. The SMO provided overall coordination of organisation-wide research on COVID-19, environment and sustainability, and released a position paper proposing ambitious and concrete initiatives to restore planetary health. It also led a project to promote integrated approaches to biodiversity and climate change, and published a translation and commentary on the report of a workshop co-sponsored by IPCC and IPBES. IGES jointly publishes the peer-reviewed journal *Sustainability Science* (Springer) with the University of Tokyo, and the editorial office is located in the SMO. In FY2021, 14 IGES researchers served as editors, 11 served as reviewers, and 12 articles by IGES researchers were published in the journal.



In FY2021, IGES researchers contributed in various capacities to the following seven major global assessments, and in addition to providing overall coordination support, SMO organised webinars open to the public on the latest findings.

- IPCC Sixth Assessment Report (Working Group 3)
- IPBES: Thematic assessment of the interlinkages among biodiversity, water, food and health (Nexus Assessment) (in progress)
- IPBES: Thematic assessment of the sustainable use of wild species
- IPBES: Thematic assessment of the underlying causes of biodiversity loss, determinants of transformative change and options for achieving the 2050 Vision for Biodiversity
- ASEAN State of Climate Change Report
- The Sixth ASEAN State of the Environment Report (in progress)
- UNEP's Steering Committee on the Future of the Global Environment Outlook (GEO)

### Strengthening Strategic Networking

In FY2021, IGES continued to strengthen its strategic networking through collaboration with diverse stakeholders. IGES further strengthened partnerships with key international organisations such as UNEP, UNESCAP, and UNFCCC. New developments included collaboration with UNDESA through the preparatory process for the Third Global Conference on Strengthening Synergies between the Paris Agreement and the 2030 Agenda for Sustainable Development held in July 2022, convening of an ASEAN-IGES high-level online meeting based on the successful implementation of various projects in the ASEAN region, and partnerships with youth organisations in Japan through involvement in the Stockholm+50 processes.

### Strengthening Domestic Outreach

IGES actively organised webinars for the general public, providing comprehensible and straightforward interpretations of trends in international discussions and negotiations focused on high-profile topics related to a decarbonised society and sustainability, including the popular Climate Change Webinar Series, which began in FY2020. IGES also published timely Japanese translations of key reports on the environment and sustainability that have attracted attention in the international community. These include UNEP's "Emissions Gap Report" and "Adaptation Gap Report" (both executive summaries) and "Vision 2050: Time to Transform" from the World Business Council for Sustainable Development (WBCSD). Four of these

translations ranked among the top 25 downloaded IGES publications in FY2021, indicating a significant demand for Japanese translations. IGES will continue to introduce key documents that have a strong impact on the global stage together with related IGES research outputs, for the Japanese audience.

### Increased Television Appearances and Contributions to Leading Newspapers

Since 2019, media coverage has been on a downward trend; however, the number of media interviews and inquiries has increased each year. Specifically, the number of independent interviews, television appearances, and op-ed articles has increased, with a record six television programme appearances by IGES researchers in FY2021. Five of the six appearances were on terrestrial television, including one each on NHK Educational and General channels, and three were on Fuji Television. The remaining one was on NHK World, NHK's overseas broadcast, which was a very significant exposure in terms of IGES' goal of disseminating information to the world.

### Dramatic Increase in Website Access

In FY2021, the number of website views (page views: PV) averaged approximately 117,000 PV per month and reached 1,404,000 PV for the year. This is a significant increase of 400,000 PV per year from the previous year, representing the highest annual growth rate to date. The main reasons for this progress are improved in-page search performance and an increased number of "special pages", which allow users to view IGES's activities by project. In FY2021, the most viewed pages included the "Q&A - COP26 Basics", which was launched on the occasion of COP26, and the "G7/G20 Special Page", in a continuing trend from the previous year. In particular, inflows from search engines have increased compared to the previous fiscal year, indicating that the IGES special web pages have aggregated information that is highly needed in a timely manner, and is successfully meeting users' search needs.

### Coordination of the President's Awards

In FY2018, the IGES President established an annual award with the purpose of promoting and sharing outstanding and impactful cases and research activities. In FY2021, in the impact category, seven out of a total of 40 cases were shortlisted as finalists (Mountain View Award; see p. 4-5 for details). Likewise, six publications were selected as finalists in the research output category (Ocean Breeze Award; see p.46 box for details).

### Candidates for the Ocean Breeze Award for Best Publication

The Ocean Breeze Award aims to promote research activities and share outstanding research outputs. The following six publications and peer-reviewed articles were finalists in FY2021, with the peer-reviewed article "COVID-19 Impact on Household Food and Plastic Waste Generation in Bangkok" winning the award.

- Peer-reviewed Article "COVID-19 Impact on Household Food and Plastic Waste Generation in Bangkok" (*Sustainability*)
- Peer-reviewed Article "Residents' Place Attachment to Urban Green Spaces in Greater Tokyo Region: An Empirical Assessment of Dimensionality and Influencing Socio-demographic Factors" (*Urban Forestry & Urban Greening*)
- Policy Report "Greening Health Infrastructure: Rapid Assessment of Policies and Practices on Health Care Waste Management in Ethiopia and Kenya"
- Policy Report "インパクトレポーティングの現状・課題と提言  
—日本のグリーンボンドの再エネセクターを事例に—"  
(Policy Report on Green Bond Impact Reporting)
- Policy Report "Private Sector Perspectives on Carbon Pricing Instruments in ASEAN"
- Peer-reviewed Article "Development of an SDG Interlinkages Analysis Model at the River Basin Scale: A Case Study in the Luanhe River Basin, China" (*Sustainability Science*)

### The Thirteenth International Forum for Sustainable Asia and the Pacific (ISAP2021)

The International Forum for Sustainable Asia and the Pacific (ISAP) brings together internationally engaged experts, and representatives from governments, international organisations, businesses and NGOs to engage in discussions on sustainable development from the viewpoint of the Asia-Pacific region. Held from November to December 2021, ISAP2021 discussed how world leaders viewed the global challenges addressed in the two Conferences of the Parties (COPs) on climate change and biodiversity that concluded just prior to the event, and what should be done in the coming decade under the overall theme of "The Decisive Decade: Towards Integrated Solutions to Climate, Biodiversity and Other Planetary Challenges". Various viewing options were offered to facilitate discussion among a diverse set of stakeholders, with hybrid plenary sessions and exclusively online thematic sessions, and recordings of all sessions were posted on the website.

## Contributions to Local Communities

IGES introduced its research activities at lectures and seminars held for members of the local community and provided easy-to-understand commentary on global environmental issues such as climate change and SDGs. IGES also dispatched speakers to local junior and senior high schools to assist in integrated study and offered lectures at universities to provide support for integrated environmental studies and higher education in the local community.

### Main Lecture Activities by IGES Researchers

| 2021                |  |  |
|---------------------|--|--|
| April to March 2022 | Yokohama National University                                       | "Economic development" (first semester)<br>"Globalisation and regional economic integration" (second semester)   |
| 7 July              | Yokohama Municipal Yokodai Daini Junior High School                | Dispatch of guest lecturer   |
| 31 July             | JISE, Hayama Shiosai Museum (co-sponsors)                          | Environmental education "Mysterious world as seen through a microscope (pollen)"   |
| 7 August            | JISE, Hayama Shiosai Museum (co-sponsors)                          | Environmental education "Mysterious world as seen through a microscope (sand on the beach)"  |
| 18 August           | Kanagawa Environmental Research Center                             | Lecture on climate change mitigation   |
| 9 October           | Kanagawa Prefectural Museum of Natural History, JISE (co-sponsors) | Nature observation "Autumn plants in <i>satoyama</i> "   |
| 22 October          | Faculty of Science and Technology, Keio University                 | "The current sustainability challenge of shrinking cities"   |
| 28 October          | Yokohama International Affairs Bureau                              | 10th Asia Smart City Conference, moderation and logistics support for main conference thematic session (3) "Voluntary Local Review (VLR) of the SDGs: Accelerating transformation of cities" |
| 29 October          | Faculty of Science and Technology, Keio University                 | "Future shrinking cities: sustainable alternatives"  |
| 12 & 19 November    | Kanagawa Prefectural Fujisawa Nishi Senior High School             | Dispatch of guest lecturer for "integrated research" class time  |
| 3 December          | Kawasaki Municipal Minami-Ikuta Junior High School                 | Dispatch of guest lecturer for "integrated study" class time (course on careers and lifestyles)  |

| 2022                   |  |   |
|------------------------|--|---|
| 26 January             | Kanagawa Prefecture, IGES (co-sponsors)                            | Webinar "Trends in regional decarbonisation and the Kanagawa Decarbonisation Vision 2050 – Mobilising concrete actions by local stakeholders" |
| 19 February & 19 March | Yokohama Policy Bureau (cooperation)                               | "Envisioning future low-carbon lifestyles and transitioning instruments" project, Yokohama workshops 1&2                                      |
| April to March 2023    | Faculty of Environment and Information Studies, Keio University    | "Energy and environment theory"   |
| 17 April               | Kanagawa Prefectural Museum of Natural History, JISE (co-sponsors) | Nature observation "Wildlife on the seashore"   |
| 23 April               | Kanagawa Prefectural Museum of Natural History, JISE (co-sponsors) | Nature observation "Spring plants in <i>satoyama</i> "  |
| 3-5 May                | HAYAMA GLOBAL nonprofit organisation                               | "SDGs workshop starting with a radius of 1 m" at the 1st SDGs Festival in HAYAMA (part of the Hayama Art & Music Festival)                    |
| 31 May                 | Kanagawa Prefecture  | Kick-off meeting on Kanagawa Prefecture's version of the decarbonised model community   |
| 4 June                 | Kanagawa Prefectural Museum of Natural History, JISE (co-sponsors) | Nature observation "Wildlife on the seashore"   |



### **FY2021 Contributors (organisations)**

We would like to express our deepest gratitude for your warm support. All contributions will be used for various activities to realise sustainable development in the Asia-Pacific region.

Fuyo Zero Carbon City Support Program  
Hitachi Transport System, Ltd.

(In order of receipt)





## Appendix



# Financial Statements (FY2021)

## Balance Sheet (Summary)

Unit: 1,000 yen

| ASSETS                     | 5,416,922   | LIABILITIES             | 1,340,444 |
|----------------------------|-------------|-------------------------|-----------|
| CURRENT ASSETS             | 1,511,554   | CURRENT LIABILITIES     | 894,178   |
| NON-CURRENT ASSETS         | 3,905,368   | NON-CURRENT LIABILITIES | 446,266   |
| (ASSETS FOR BASIC FUNDS)   | (250,000)   |                         |           |
| (RESTRICTED ASSETS)        | (3,385,225) | NET ASSETS              | 4,076,478 |
| (OTHER NON-CURRENT ASSETS) | (270,143)   | RESTRICTED NET ASSETS   | 2,565,274 |
|                            |             | UNRESTRICTED NET ASSETS | 1,511,204 |

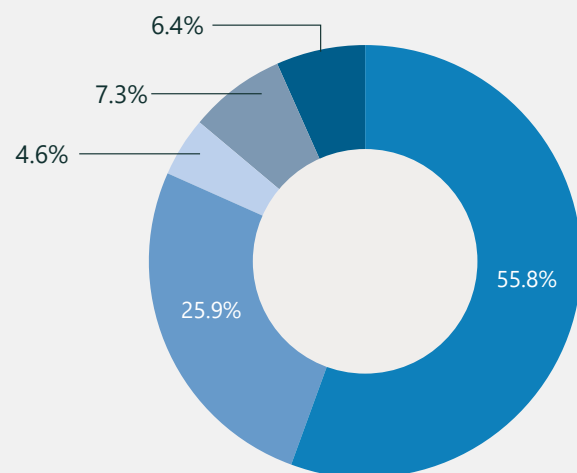
## Statement of Activities (All IGES)

Unit: 1,000 yen

|  |  | Accounting for Project for public interest purpose |          |         |           | Incorporated accounts | FY2021 Total | FY2020 Total |
|--|--|--|----------|---------|-----------|-----------------------|--------------|--------------|
|  |  | Strategic Research*1                               | IPCC/TSU | APN     | JISE      |                       |              |              |
| I Changes in unrestricted net assets   |  |  |          |         |           |                       |              |              |
| Operating activities                   | Revenues and gains                     | 2,575,813  | 143,091  | 287,325 | 56,377    | 218,316               | 3,266,492*2  | 2,971,070    |
|  | Expenses and losses                    | 2,489,987  | 143,091  | 237,139 | 56,377    | 218,316               | 3,130,480*2  | 2,966,756    |
| Non-operating activities               | Revenues from non-operating            | 0  | 0        | 0       | 681       | 0                     | 681          | 239          |
|  | Expenses and losses from non-operating | 69   | 0        | 0       | 0         | 67                    | 136          | 0            |
| II Changes in restricted net assets    |  |  |          |         |           |                       |              |              |
| Total changes in restricted net assets |  | 1,083  | 27,909   | 0       | △20,224   | 0                     | 8,768        | 67,489       |
| Net assets at end of year              |  | 1,196,194  | 245,729  | 337,144 | 2,218,126 | 79,284                | 4,076,477    | 3,931,153    |

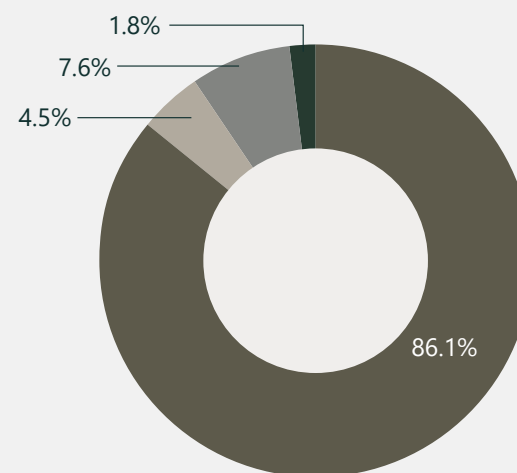
\*1 For IGES research activities and dissemination of research outcomes \*2 Including internal transactions

## Contents of revenues and gain



|                            | Unit: 1,000 Yen  |
|----------------------------|------------------|
| Contract revenue           | 1,822,706        |
| Contribution*1             | 847,309          |
| Grants                     | 150,679          |
| Subsidies for office lease | 237,978          |
| Income and others          | 207,820          |
| <b>Total</b>               | <b>3,266,492</b> |

## Expenses and losses



|                         | Unit: 1,000 Yen  |
|-------------------------|------------------|
| Strategic research*2    | 2,708,302        |
| IPCC/TSU                | 143,091          |
| APN                     | 237,139          |
| JISE                    | 56,377           |
| <Internal transactions> | △14,429          |
| <b>Total</b>            | <b>3,130,480</b> |

\*1 Including contribution for IPBES-TSU \*2 Including incorporated accounts

# About IGES

## Background

- January 1995:** Establishment of IGES recommended by the Japanese Prime Minister's Advisory Group on the Global Environment in the Twenty-First Century.
- April 1996:** Final report on the proposed functions, organisational structure and other aspects of IGES issued by the Discussion Group on Comprehensive Environmental Studies and Education, former Environment Agency of Japan.
- March 1998:** Establishment of IGES
- April 2012:** Transition to a public-interest incorporated foundation

## Personnel (As of 30 June 2022)

|  | Number of Staff | Non-Japanese Staff* |
|--|-----------------|---------------------|
| Strategic Research   | 159             | 44                  |
| Projects for Public Interest other than Strategic Research | 22              | 8                   |
| General Administration                                     | 18              | 0                   |
| <b>Total</b>   | <b>199</b>      | <b>52</b>           |

\*Out of total staff for each category

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### Headquarters

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## Officers and Others (As of 1 October 2022)

### Trustees

|                         |  |
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| Prof. OTSUKA Tadashi          | Professor, Law School and Faculty of Law, Waseda University  |
| Prof. Dr. Miranda A. Schreurs | Professor, Chair of Environmental and Climate Policy, Bavarian School of Public Policy, Technical University of Munich                                 |



## Auditors

|                     |                             |
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| Mr. HASEGAWA Ken    | Lawyer                      |
| Mr. YASUDA Hiroyuki | Certified public accountant |

## Honorary Advisors

|                         |   |
|-------------------------|---|
| Ms. KAWAGUCHI Yoriko    | Visiting Professor, Musashino University; Fellow, Institute for Global Affairs; Former Member of the House of Councilors; Former Minister of Foreign Affairs; Former Minister of the Environment, Japan |
| Prof. KOMIYAMA Hiroshi  | Chairman of the Institute, Mitsubishi Research Institute, Inc; President Emeritus, the University of Tokyo  |
| Mr. MURAYAMA Tomiichi   | Former Prime Minister; Senior Advisor, Global Environmental Action (GEA)  |
| Dr. Emil Salim          | Chairman, Advisory Council to the President of Indonesia; Former State Minister for Population and Environment, Indonesia   |
| Dr. Stephan Schmidheiny | Honorary Chairman, Executive Committee, World Business Council for Sustainable Development  |
| Mr. Achim Steiner       | Former Executive Director, United Nations Environment Programme   |

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| Mr. Lucas Assunção              | Head of Trade, Environment and Sustainable Development Branch, United Nations Conference on Trade and Development (UNCTAD)   |
| Dr. FUGONO Nobuyoshi            | Advisor, Advanced Telecommunications Research Institute International  |
| Mr. FUKUKAWA Shinji             | Advisor, Global Industrial and Social Progress Research Institute  |
| Dr. William Glanville           | Former Vice President, International Institute for Sustainable Development (IISD)  |
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| Mr. OBA Tomomitsu               | Former President, Japan Center for International Finance   |
| Mr. OKADA Yasuhiko              | Attorney at Law, Partner, Kitahama Partners (Tokyo Office)   |
| Mr. OKAJIMA Shigeyuki           | Chairman, Japan Environmental Education Forum  |
| Mr. SASAKI Masamine             | Former President, The Japanese Association for Conservation of Architectural Monuments   |
| Dr. SUEMATSU Hiroyuki           | Specially Appointed Professor, Tokyo NODAI Research Institute (TNRI), Tokyo University of Agriculture; Visiting Professor, Institute for Future Initiatives (IFI), The University of Tokyo |
| Dr. Monthip Sriratana Tabucanon | Director, Climate Change Research Center, National Research Council of Thailand (NRCT)   |

(in alphabetical order)

## Signatory Organisations and Institutions of the Charter for the Establishment of IGES

Total: 48

### National Administrative Organisations (16)

Department of the Environment, Water, Heritage and the Arts (Australia)  
Ministry of Environment (Cambodia)  
Environment Canada (Canada)

Ministry of Environmental Protection (China)  
Ministry of Environment and Forests (India)  
State Ministry of Environment (Indonesia)  
Ministry of the Environment (Japan)  
Ministry of Environment (Korea)  
Water Resources and Environment Administration (Lao P.D.R.)  
Ministry of Natural Resources and Environment (Malaysia)  
Ministry of Nature and the Environment (Mongolia)  
Ministry of Environment, Science and Technology (Nepal)  
Ministry for the Environment (New Zealand)  
Department of Environment and Natural Resources (The Philippines)  
Ministry of Natural Resources and Environment (Thailand)  
Ministry of Natural Resources and Environment (Viet Nam)

### International Organisations (6)

International Tropical Timber Organization  
United Nations Centre for Regional Development  
United Nations Economic and Social Commission for Asia and the Pacific  
United Nations Environment Programme  
United Nations Institute for Training and Research  
United Nations University Institute for the Advanced Study of Sustainability

### Research and Academic Institutions (26)

Asia-Pacific Centre for Environmental Law (Singapore)  
Center for International Environmental Law (USA)  
Earth Council (Costa Rica)  
Global Industrial and Social Progress Research Institute (Japan)  
Indira Gandhi Institute of Development Research (India)  
Institute of Development Studies, University of Sussex (UK)  
Institute of Southeast Asian Studies (Singapore)  
Institute of Strategic and International Studies (Malaysia)  
International Academy of the Environment (Switzerland)  
International Global Change Institute, Waikato University (New Zealand)  
International Institute for Applied Systems Analysis (Austria)  
International Institute for Environment and Development (UK)  
International Institute for Sustainable Development (Canada)  
Korea Energy Economics Institute (Korea)  
Korea Environment Institute (Korea)  
National Institute for Environmental Studies (Japan)  
Potsdam Institute for Climate Impact Research (Germany)  
Sino-Japan Friendship Center for Environmental Protection (China)  
Stockholm Environment Institute (Sweden)  
Thailand Development Research Institute Foundation (Thailand)  
Thailand Environment Institute (Thailand)  
The Energy and Resources Institute (India)  
VTT Technical Research Centre of Finland (Finland)  
World Resources Institute (USA)  
Worldwatch Institute (USA)  
Wuppertal Institute for Climate, Environment and Energy (Germany)

# List of Abbreviations

|                |  |
|----------------|--|
| <b>ADB</b>     | Asian Development Bank   |
| <b>ASEAN</b>   | Association of Southeast Asian Nations   |
| <b>COP26</b>   | the 26th session of the Conference of the Parties to the United Nations Framework Convention on Climate Change |
| <b>GHG</b>     | Greenhouse Gas   |
| <b>ICSSR</b>   | Indian Council of Social Science Research  |
| <b>IIASA</b>   | International Institute for Applied Systems Analysis   |
| <b>IPBES</b>   | Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services                               |
| <b>IPCC</b>    | Intergovernmental Panel on Climate Change  |
| <b>ISAP</b>    | International Forum for Sustainable Asia and the Pacific   |
| <b>JAIF</b>    | Japan-ASEAN Integration Fund   |
| <b>JICA</b>    | Japan International Cooperation Agency   |
| <b>JSPS</b>    | Japan Society for the Promotion of Science   |
| <b>LDCs</b>    | Least Developed Countries  |
| <b>METI</b>    | Ministry of Economy, Trade and Industry, Japan   |
| <b>MOEJ</b>    | Ministry of the Environment, Japan   |
| <b>NDC</b>     | Nationally Determined Contribution   |
| <b>NEDO</b>    | New Energy and Industrial Technology Development Organization  |
| <b>NIES</b>    | National Institute for Environmental Studies   |
| <b>OECD</b>    | Organisation for Economic Co-operation and Development   |
| <b>SATREPS</b> | Science and Technology Research Partnership for Sustainable Development  |
| <b>SBSTA</b>   | Subsidiary Body for Scientific and Technological Advice  |
| <b>SDG</b>     | Sustainable Development Goal   |
| <b>SLCP</b>    | Short-Lived Climate Pollutants   |
| <b>UNDESA</b>  | United Nations Department of Economic and Social Affairs   |
| <b>UNEP</b>    | United Nations Environment Programme   |
| <b>UNESCAP</b> | United Nations Economic and Social Commission for Asia and the Pacific   |
| <b>UNFCCC</b>  | United Nations Framework Convention on Climate Change  |



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