Integrative Strategic Research Programme for the 8th Phase (ISRP8)

FY2022 (Year 2)

Business Report

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Institute for Global Environmental Strategies

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1. Impacts and Outputs

The Institute for Global Environmental Strategies (IGES) continues to act as an agent of change to generate significant impacts towards sustainable and resilient society, including those for post COVID-19 (Coronavirus disease 2019) response-recover-redesign in broad areas of IGES expertise (climate change & energy, sustainable production & consumption, biodiversity & forests, and climate adaptation & water) through co-design, co-implementation, co-production and co-delivery with key stakeholders.

In the Integrative Strategic Research Programme for the 8th Phase (ISRP8), IGES will further promote 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). Furthermore, Common Focal Areas have been introduced in which each research unit should work together to form a higher level of impact.

The key performance indicators for impacts and outputs set out in the ISRP8 are 30 impact cases each year, 150 strategic publications each year and 100 academic publications each year. Section 1.1 below provides an overview and the progress of the intended impacts and initiatives in the Common Focus Areas, followed by Section 1.2 on the highlights of impact generation (impact cases, deliverables, strategic networking and communication) in FY2022.

1.1. Common Focal Areas[1]

Common Focal Areas are defined as priority areas where IGES will make efforts collectively to enhance impact generation beyond each research unit. Therefore, the Common Focal Areas are expected to provide an internal framework to drive and motivate research units to co-work and collaborate to generate greater impacts in those areas in cooperation with the Strategic Management Office (SMO). SMO Knowledge and Communications (KC) and SMO Research and Publications (RP) will facilitate such collaboration among research units to mainstream impact generation and to align with the Common Focal Areas, utilising various occasions attended by the management, for example, monthly thematic meetings on the Sustainable Development Goals (SDGs), climate change, biodiversity, and circular economy and sustainable lifestyles.

Common Focal Areas are identified by reviewing intended impacts during ISRP8 by each research unit and selecting key issues to be addressed taking account of global, regional and domestic urgencies and priorities related to sustainable development, as well as considering IGES' strengths (Table 1).

Common Focal Areas are composed of four parts: Focal Areas, Sub-focal Areas, Related Units, and Major Planned Activities. The Focal Areas are expected to be those target areas seeking greater impacts, i.e. (1) accelerating implementation of the SDGs ("Put SDGs on the ground"); (2) accelerating implementation of the Paris Agreement ("Make society net zero and resilient"); (3) accelerating implementation of the Kunming-Montreal Global Biodiversity Framework[2] ("Put biodiversity on the path to recovery by 2030"); and (4) shaping circular economy and sustainable lifestyles ("Make it circular"). It should be noted that these four Focal Areas are closely linked to each other. In particular, IGES will promote an integrated approach to the various issues of (2) climate change mitigation and adaptation and (3) biodiversity. Furthermore, it is necessary to pursue and propose specific measures and solutions to address these issues through various activities in (4) circular economy and sustainable lifestyles. Sub-focal Areas are key components that IGES has been engaged in, with competent expertise and networks close to the target

[1] Modification from "Focus Areas" to "Focal Areas" has been made for the sake of accuracy in English.
[2] The Kunming-Montreal Global Biodiversity Framework was adopted in December 2022.

areas. In each Sub-focal Area, research units are expected to work collaboratively and also try to find synergies among the Sub-focal Areas aiming for bigger impacts. Major planned activities were selected by each relevant unit.

Since this is the first time for IGES to set this type of framework, it is expected that the Common Focal Areas will be reviewed through the ISRP8 period, as necessary.

Table 1: Common Focal Areas

Focal Areas	Sub-focal Areas	Notes *** All focal areas and sub-focal areas are not mutually exclusive, but rather closely interlinked.**
(1) Accelerating implementation of the SDGs "Put SDGs on the ground"	a. Enhancing implementatability of SDGs in the Asia-Pacific region	Activities relevant to global, regional and national review processes and contribution to knowledge production are included.
	b. Localising SDGs and shaping Regional Circulating and Ecological Sphere (CES)	Closely linked with other sub-focal areas such as 'net zero cities,' 'sustainable land use and ecosystem services' and 'circular economy.'
	c. Promoting just transitions and green recovery in the wake of COVID-19	Activities relevant to social SDGs such as Goal 5 (gender equality) and Goal 10 (reduced inequalities) are included.
(2) Accelerating implementation of the Paris Agreement "Make society net zero and resilient"	a. Ensuring implementability of the Paris Agreement	Activities relevant to global negotiation, review processes and contribution to knowledge production are included.
	b. Promoting Net zero Japan	Closely linked with sub-focal areas such as just transition/green recovery, sustainable land use, circular economy and sustainable lifestyles.
	c. Promoting Net zero Asia	Activities on Asia's transformative and inclusive policies to achieve net zero and development goals are included.
	d. Promoting Net zero Cities	Closely linked with other sub-focal areas such as 'localising SDGs and shaping Regional CES.'
	e. Mainstreaming and promoting implementation of climate adaptation	Closely linked with 'sustainable land use and ecosystem conservation' and CES.
(3) Accelerating implementation of the Kunming-Montreal Global Biodiversity Framework "Put biodiversity on a path to recovery by 2030"	a. Strengthening global biodiversity policy processes	Activities relevant to global negotiation, review processes and contribution to knowledge production are included.
	b. Promoting sustainable land use and ecosystem conservation	Activities relevant to forest conservation are included. Closely linked with 'localising SDGs and shaping Regional CES'.
	c. Facilitating non-state actors' involvement in conservation	Activities involving businesses, and indigenous peoples and local communities are included.

(4) Shaping circular economy and sustainable lifestyles "Make it circular"	a. Mainstreaming circular economy	Activities in this sub-focal area are highly relevant to other sub-focal areas in climate and biodiversity.
	b. Mainstreaming sustainable lifestyles	Activities in this sub-focal area are highly relevant to other sub-focal areas in climate and biodiversity.
	c. Ending pollution and improving environmental quality	Activities include, but not limited to, solid waste, waste water, and air quality management.

The intended impact generation for each sub-focal area in FY2022 and the progress of the initiatives are as follows. (Note that the italicised intended impact part of each sub-focal area is in line with the FY2023 business plan, which evolved from the description of the FY2022 business plan as it had been elaborated through activities and experiences in FY2022.)

(1) Accelerating implementation of the SDGs ("Put SDGs on the ground")

a. Enhancing implementability of SDGs in the Asia-Pacific region

The SDGs were adopted more than seven years ago, but progress has been either slow or non-existent on most of the 17 goals that are the centerpiece of the 2030 Agenda on Sustainable Development. The lack of progress is especially worrying in the Asia-Pacific region for environmental issues such as those captured in the SDGs concerning Life on Land (Goal 15), Life Below Water (Goal 14), Climate Action (Goal 13) and Responsible Consumption and Production (Goal 12) (Asia and the Pacific SDG Progress Report 2021, UNESCAP (United Nations Economic and Social Commission for Asia and the Pacific)). One of the main problems confronting policymakers in Asia is how to accelerate progress in implementing the SDGs.

IGES aims to address this problem by working with governments, businesses, civil society and other stakeholders in the Asia-Pacific region to accelerate implementation of the SDGs. To do so, much of IGES research is working at multiple levels with diverse partners such as the United Nations Environmental Programme (UNEP), the United Nations Department of Economic and Social Affairs (UNDESA), United Nations Environment and Social Commission for Asia and the Pacific (UNESCAP), the Ministry of the Environment, Japan (MOEJ), the Global Compact Network Japan, West Java Province (Indonesia) and Sado City (Japan), to offer timely recommendations on how to make headway on the SDGs from an integrated perspective to policymaking. Some of IGES' research draws upon analysis of global and regional trends to influence outcomes from key processes such as the Asia Pacific Forum on Sustainable Development (APFSD) and the High-Level Political Forum (HLPF). An additional branch of work aims to encourage Japanese businesses to bring the SDGs into their core business processes, including supply chains. Yet a third stream of work involves the collaboration between local and regional governments to mainstream the SDGs (and integrated approaches) into planning processes. A new project funded by the Wellcome Trust in the UK will work with cities in Japan and other G7 countries to integrate health co-benefits into climate policies. For all of the above areas and contributions, IGES also aims to create synergies across divisions and between stakeholders, and address trade-offs where they exist.

In FY2022, IGES strengthened its efforts to help multiple stakeholders accelerate progress on the SDGs in Asia and the Pacific, and beyond. Important milestones included securing a contract from the Ministry of Foreign Affairs, Japan to gather insights into how countries in Asia and Europe are implementing the SDGs. This work was also supported by new research into the follow-up review of the SDGs in several countries in Europe that will be shared in discussions in developing Japan's SDGs implementing guidelines. Further, IGES led a report funded by UNEP to encourage countries in Asia to strengthen the

implementation of the environmental dimensions of the SDGs. IGES also contributed to the *Sixth ASEAN State of the Environment Report*, which will provide ASEAN countries with up-to-date information on the status and trends of the region's environment, and UNEP's *Global Environmental Outlook* (GEO-7). Finally, IGES was awarded a new project funded by the Wellcome Trust in the UK will work with cities in Japan and other G7 countries to take a more integrated approach to climate planning that will help make progress on the health-related and other SDGs.

b. Localising SDGs and shaping the Regional Circulating and Ecological Sphere (CES)

Achieving greater societal sustainability and resilience requires new approaches to integrating diverse knowledge around social, cultural, economic and environmental/ecological dimensions. The world is faced with enormous social, political, economic and environmental challenges, stemming from resource overconsumption (particularly by the wealthy), environmental degradation, population pressures, climate change and deeply entrenched inequalities, among others. The ambition expressed in the UN2030 Agenda and its Sustainable Development Goals, the Paris Agreement, and the Sendai Framework for Disaster Risk Reduction underscores the urgency with which societies need to transform towards a more livable, just and ecologically sustainable future. Achieving these ambitious goals and targets with business as usual will not be possible unless they are localised and implemented through an integrated approach. The Circulating and Ecological Sphere (CES) is a conceptual framework that promotes integrated approaches to sustainability challenges including environmental, economic and social challenges by simultaneously making progress with decarbonisation, local resource circulation and living in harmony with nature.

The 8th ISRP of IGES has prioritised elaboration of the CES concept in the context of developing countries in Asia and application of the CES approach for addressing sustainability challenges through local actions. IGES and START International, USA have launched a collaborative initiative, namely "CES-Asia Initiative" for advancing the CES Concept in South and Southeast Asia. IGES, START International and the leading academic and research institutes in South and Southeast Asia, established the CES-Asia Consortium on 14 October 2021 with the aim of advancing the CES concept for enabling resilience of city regions in South and Southeast Asia. In collaboration with CES-Asia Consortium partners, IGES will promote the bottom-up approach through advanced research, co-development process and capacity building that strengthens understanding and promotes the utilisation of the CES concept, in order to address sustainability challenges in Asia.

In FY2022, IGES, in collaboration with the CES-Asia consortium partners, facilitated the co-development process of the CES Action Program in a number of city regions including Hachinohe in Japan, and Nagpur and Haridwar in India. Through a co-development approach, IGES could established an effective partnership with local governments including Hachinohe City and Nagpur City and rural government bodies, which will facilitate the mainstreaming of the CES approach to localise the SDGs and climate actions. IGES also led the evidence-based knowledge generation through conducting scientific research that aims to support enabling environment creation to apply the CES in the context of local needs.

In FY2022, IGES research results have been published in peer-reviewed journals (five), and a book project on the CES Concept and its application was launched. This book aims to elaborate the CES concept and assess its applicability for integrated achievement of economic, environmental and social goals and targets in different geopolitical setups by analysing a number of cases from across the world. IGES also disseminated the CES concept in important policy processes such as G20, Global Climate and SDGs Synergy Conference, and the HLPF. IGES collaborated with Asia Pacific Network for Global Change Research (APN) to organise national workshops on the application of the CES approach in three ASEAN countries, namely Indonesia, Thailand and the Philippines, thereby promoting the CES approach in national policies on sustainable development and climate actions.

c. Promoting just transition and green recovery in the wake of COVID-19

While the COVID-19 pandemic has led to enormous suffering and loss, it has also underlined the need to promote inclusive and sustainable transitions in the face of crises. The Ukraine crisis and related impacts on energy and food prices similarly suggest a need to work towards a more sustainable future as tensions escalate. However, it is not always easy for policymakers and other stakeholders to make a transition in the face of external and internal pressures for business-as-usual development. A significant problem facing policymakers and other stakeholders in Asia is how to manage transitions to a more inclusive and sustainable future.

IGES aims to address aspects of this problem by advising governments, businesses and other major stakeholders about opportunities to reshape unsustainable systems in the wake of COVID-19 and other crises. This includes promoting integration of a One Health approach (involving the integration of human, animal and environmental health concerns) at the national level. It also involves supporting the widespread adoption of CES at the local level. Finally, it includes the promotion of more socially just and inclusive decision-making processes at all levels of decision-making in and beyond Asia.

In FY2022, IGES began to look to a world beyond COVID-19 but now the world is struggling with tensions in Ukraine. IGES published a timely paper on the Ukraine conflict that cautioned policymakers not to use that crisis as an excuse to hit pause on decarbonisation and related sustainability initiatives. IGES also released a new working paper that focused on the importance of tailoring a just transition to needs and priorities in Asia.

(2) Accelerating implementation of the Paris Agreement ("Make society net zero and resilient")

a. Enhancing implementability of the Paris Agreement

At the heart of the successful implementation of the Paris Agreement is whether and how effectively a ratchet-up mechanism through which Parties will increase ambition over time can work. By the end of 2021, many Parties raised the level of their climate action (mitigation, adaptation and means of implementation), but a significant gap still exists between the current levels of action and the levels required to meet the goals of the Paris Agreement. By 2025, the year of the next round of the NDC (Nationally Decided Contribution) submission cycle, IGES envisages that the ratchet-up mechanism will be functioning.

To ensure this happens, IGES aims to generate impacts in the implementation of the ratchet-up mechanism. In particular, IGES will conduct research-based capacity building for Article 6 participation, reporting under the transparency framework, and participation in the global stocktake, while updating a reliable database of NDCs. To this end, IGES will work closely with international processes on climate change, including the United Nations Framework Convention on Climate Change (UNFCCC), G7, G20 and other related processes.

At the same time, provision and dissemination of science-based information is essential for the urgent action needed to address climate change. To this end, IGES is also actively involved in the processes of the Intergovernmental Panel on Climate Change (IPCC) and UNEP Gap Report, contributing to the preparation and review of the Sixth Assessment Report (AR6), the upcoming Seventh Assessment Report (AR7) cycles, and UNEP's Gap Reports, as well as communicating the findings of the reports to relevant stakeholders such as local governments, business, and a general audience in an accessible manner.

In FY2022, IGES contributed to the adoption of the decision on Article 6 rulebook, as well as the negotiation and implementation of Global Stocktake (GST) under the Paris Agreement by participating in COP27 as members of Japanese delegation. IGES started acting as the secretariat of the 'Paris Agreement

Article 6 Implementation Partnership Centre', which promotes the activities of the 'Paris Agreement Article 6 Implementation Partnership', launched at COP27, with Japanese Government's initiative, to support capacity building with regard to Article 6 of the Paris Agreement. Utilising the knowledge and expertise gained through its support for international negotiations, IGES 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 of the Paris Agreement. In addition, IGES 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 UN Environment Programme - Technical University of Denmark (UNEP-DTU). To provide capacity building, IGES organised an international conference on Article 6 with UNFCCC secretariat and MOEJ. Furthermore, CE cooperated with the Japan Aerospace Exploration Agency (JAXA) to promote inputs from the Japanese satellite community into GST. IGES also played 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.

b. Promoting Net zero Japan

Japan declared its commitment to net zero emissions by 2050 in October 2020. To this end, related national strategies, policies and plans, for example, the Green Growth Strategy, the Strategic Energy Plan, and the Plan for Global Warming Countermeasures, were developed to align with net zero emissions. However, they are not seen as compatible with the 1.5℃ goal. Many local governments in Japan declared their intentions to become net zero by 2050 at a municipal level. However, most of them have not yet developed strategies, roadmaps and policies to attain net zero emissions.

Against these backgrounds, IGES aims to contribute to the process of developing the next Strategic Energy Plan by developing a net zero roadmap which is consistent with the 1.5℃ goal and simultaneously considers various social issues, thereby generating impacts on domestic policy process. In addition, the roadmap will be co-created with stakeholders such as private companies and local governments to ensure its feasibility and broad support.

In FY2022, IGES developed the draft version of the 1.5℃ goal-compatible roadmap through consultation with business stakeholders such as Japan Climate Leaders' Partnership (JCLP), with a view to publishing its first version by the end of year 2023. IGES further carried out the simulation analysis of power grid system to achieve a zero-emission power system in Japan and published an IGES working paper. A peer-reviewed journal article on policy challenges for Japan's transition finance was also published. IGES also contributed to the UNEP Emissions Gap Report 2022, as well as representing Japan in Climate Transparency, a Germany-based research network for G20 countries. Likewise, to communicate national and international trends toward decarbonisation, CE launched the IGES Climate Change Webinar Series in April 2021 and which has been conducted 49 times through June 2023.

c. Promoting Net zero Asia

Asia is in a unique position as the world accelerates towards net zero targets. The region's vulnerability to climate change impacts demands urgent attention. In addition, there is a need to uplift the huge populations in developing economies out of poverty and ensure their well-being, thus placing a huge responsibility on the region. On the other hand, the leading four economies in the region, Japan, China, India and the Republic of Korea have all set timelines for achieving net zero goals, in tune with their national circumstances. The carbon market within the region also began making notable strides. It is, however, critically important for these countries to accelerate their efforts to achieve net zero and contribute to the 1.5℃ goal.

By understanding how the net zero targets are gaining policy importance in the region, and also learning from experiences of each country, IGES continues to research several critical areas with an aim to contributing to the realisation of net zero in Asia. IGES is conducting research on net zero Asia and climate-resilient pathways for decarbonisation to develop guidance for a national long-term roadmap to synergise mitigation and adaptation by examining net-zero transition and its implications on resilience/adaptation. Research on transboundary climate risks in Asia is being carried out and will make recommendations for how Japan can contribute to regional efforts to deal with the physical risks of climate change impacts, as well as transition risks associated with decarbonisation in Asia. Research is also being done on co-innovation and use of the Joint Crediting Mechanism (JCM) for greater collaboration between developing and developed economies on environmental technologies, and this can lead to innovative solutions for deploying mitigation technologies in developing countries. By following and outreaching progress achieved by various countries in the development of carbon markets and pricing, as well as air pollution-climate co-benefit policies, and the finer nuances of policy impetus, IGES also contributes to policy promotion domestically and internationally.

In FY2022, IGES delved into research on climate-resilient pathways for decarbonisation, developing guidance for long-term roadmaps in ASEAN member states that synergise mitigation and adaptation efforts. Addressing transboundary climate risks in Asia, research was carried out on Japan's contributions to dealing with physical and transition risks associated with decarbonisation in the region. CE research expanded into newer areas with added emphasis on co-innovation, hydrogen, critical minerals, oil and gas methane mitigation, and other essential aspects for net zero achievement. As part of research in these areas, CE was involved in preparing policy recommendation documents for G7 and G20 jointly with reputed organisations including United Nations University (UNU), International Institute for Sustainable Development (IISD) and Columbia University; and also published a paper on hydrogen with Asia Development Bank Institute (ADBI). The team also coordinated an official side event at the UNFCCC-COP27, deliberating on net-zero Asia. Work on the JCM fostered greater collaboration with developing economies, by deploying mitigation technologies in developing countries. IGES also supported the implementation of climate policies in Asia by tracking and sharing the progress that has been achieved in carbon markets, pricing, air pollution-climate co-benefit policies.

d. Promoting Net zero Cities

Local actions are imperative to achieve the ambitious commitment to carbon neutrality, and local and regional governments play an important role to ensure and accelerate local climate actions. More than 1,100 cities and regions in the world had joined the global campaign "Race to Zero" by September 2022, and more cities are indicating their commitments to be net zero by at least 2050. In Japan, 934 local and regional governments had declared their commitment to zero carbon by 2050 by the end of March 2023. It is critical to maintain this "zero-carbon city movement", to encourage more cities to join the movement and ensure implementation of local climate actions. Climate actions not only address the climate crisis but also promote local economic opportunities such as creation of new industries and services, new or better job opportunities and just transition, which could contribute to the achievement of the SDGs at local level.

IGES has been working closely with local and regional governments in Japan and Asia towards low-carbon/zero-carbon city development through city-to-city collaboration projects, policy studies, and regional and international conferences aiming at capacity development of cities through knowledge sharing. IGES is also engaged in city-to-city cooperation between Japanese cities and EU (European Union) cities on sustainability agenda including climate change. Through these activities, IGES aims to support local governments in developing roadmaps and action plans for the realisation of zero-carbon cities and to improve climate literacy for citizens and local businesses.

In FY2022, IGES played a role in creating a platform for the MOEJ's commissioned work, "City-to-City Collaboration Project for a Zero Carbon Society," which has been conducted since FY2013, and

contributed to maintaining momentum toward the realisation of a zero-carbon society at the city level in Japan and other countries. IGES also participated in individual projects of the "City-to-City Collaboration Project for a Zero Carbon Society" (i.e. collaboration projects between Kuala Lumpur-Tokyo Metropolitan Government-Saitama City, Hai Phong City – Kitakyushu City; Koror State – Kitakyushu; Soc Trang – Hiroshima Prefecture). Zero-carbon scenario development using the Asia-Pacific Integrated Model (AIM) was also conducted regarding the Hai Phong City – Kitakyushu City collaboration. The Kuala Lumpur-Tokyo Collaboration won the 2022 C40 Cities Bloomberg Philanthropies Awards under the category of United to Build a Climate Movement.

As it is essential to change citizens' lifestyles in order to achieve zero-carbon city, IGES conducted awareness raising activities, as well as dialogue with local stakeholders in Kitakyushu City, Kagoshima City, and Odate City by holding a "1.5℃ Lifestyle Workshop," with a view to developing a template of the workshop that can be deployed in other municipalities. IGES also conducted a study on Climate Citizens' Assemblies in Europe, to extract lessons for the Japanese context. In addition, IGES engaged in a project to explore challenges and ways to support zero carbon action planning and implementation by subnational governments, especially small and medium sized cities. IGES co-hosted the "Zero Carbon City International Forum 2023,"organised by MOEJ and the Office of Special Presidential Envoy for Climate, the United States of America on March 2023. The 2023 Forum shared leading practices on net zero transition, resilience and multiple benefits and facilitated discussion to provide inputs to the G7 Ministers' Meeting on Climate, Energy and Environment in Sapporo City.

e. Mainstreaming and promoting implementation of climate adaptation

The Paris Agreement stipulates adaptation as one of the two pillars of climate change measures along with mitigation, and calls for further adaptation actions in each country and globally coordinated efforts to achieve the Global Goal on Adaptation newly set in the Paris Agreement. In order to mainstream climate change adaptation and promote its implementation, a number of measures are needed, including further dissemination of information, capacity building of relevant organisations and actors, securing adequate funding, and sharing of good practices. In addition, synergistic effects with other pressing issues (e.g., adaptation and disaster prevention, adaptation and mitigation, adaptation and biodiversity conservation, adaptation and marine conservation, etc.) must be pursued to resolve adaptation issues in Asia-Pacific countries, including Japan.

IGES will play a leading role in the full-scale operation of the Asia-Pacific Climate Change Adaptation Information Platform (AP-PLAT), which was launched jointly with the Ministry of the Environment and the National Institute for Environmental Studies (NIES) to improve the environment for decision-making and practical adaptation actions in response to climate risks, in order to contribute to enhancing adaptation capacity of Asian countries. Furthermore, IGES will disseminate valuable information on climate change adaptation in the Asia-Pacific region through AP-PLAT. In addition, IGES will participate in various international initiatives and contribute to global efforts on adaptation while strengthening cooperation with relevant organisations and networks. IGES will also actively participate in various international initiatives and contribute to global efforts on adaptation while strengthening cooperation with relevant organisations and networks. Finally, IGES will contribute to international negotiations on adaptation through strategic policy recommendations based on a comprehensive analysis of international adaptation policies and actions to ensure that the Global Goal on Adaptation functions as an effective policy goal and that the Global Stocktaking Process functions effectively to achieve it.

In FY2022, IGES took a lead in promoting AP-PLAT and partnership development in Asia. Consequently "AP-PLAT Framework for Action 2023-2025" was adopted after the first-ever AP-PLAT plenary meeting held in February 2022. With regard to capacity development activities under the AP-PLAT, IGES also supported holding the AP-PLAT Capacity Development Regular Meeting, which resulted in the adoption of "Strategy for AP-PLAT Capacity Development Program 2023-2025." IGES also produced guidebooks

on compound and cascading disaster risk tailored in Bangladesh and Nepal and conducted the capacity development programme in these countries.

IGES supported MOEJ and engaged in negotiations on Global Goal on Adaptation and other adaptation-related agendas under UNFCCC. Through following international trends on adaptation, IGES continued to make recommendations to MOEJ on the future contribution of Japan in the field of adaptation. IGES researchers are engaged with the Adaptation Without Boundaries (AWB) initiative, World Adaptation Science Program (WASP) and UNEP Global Adaptation Gap report 2023, among others. A researcher from IGES worked as lead author for the IPBES Nexus assessment report.

IGES explored how the nexus of human well-being and water relations can be applied in India, Bangladesh and Viet Nam under a three-year project. In FY2022, 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. IGES has also increased engagements on Locally Led Adaptation (LLA), which has been receiving increased attention since the 2021 Climate Summit, and especially after the Global Commission on Adaptation launched eight Principles on LLA. In this context, AW and APN jointly started a project on developing a model case of Locally Led Adaptation (LLA) as a direct contribution to the AP-PLAT capacity-building pillar covering South Asia (Nepal), South East Asia (Viet Nam) and Pacific (Fiji). In the meantime, IGES is exploring possibilities of regional partnership with renowned international initiatives and institutions such as Global Hub on LLA of the Global Center on Adaptation (GCA), LLA Community of Practice as a new LLA endorsing organisation, and initiated discussion on developing Japan-ASEAN Integration Fund (JAIF) project. IGES's work on transboundary climate change risks (TBRs) has been carried out under NIES-IGES *Suishinhi* project, JSPS-ICSSR project, and IGES SRF projects mainly in collaboration with the AWB initiative, and several national partners in South and Southeast Asia. IGES is developing a compendium of case studies on transboundary climate risks that highlight the factors resulting in TBRs under various contexts to be finalised during 2022-2023.

(3) Accelerating implementation of the Kunming-Montreal Global Biodiversity Framework ("Put biodiversity on a path to recovery by 2030")

a. Strengthening global biodiversity policy processes

Biodiversity policy and strategy at the international level (including on forests) plays a significant role in guiding biodiversity policy and strategy at the national and subnational levels. The prominence of such work has received a recent boost with the adoption, in December 2022, of the "Kunming-Montreal Global Biodiversity Framework (GBF) under the Convention on Biological Diversity (CBD), and the international legally binding instrument on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ).

The GBF was negotiated and adopted two years later than scheduled, due partly to COVID-19 pandemic. Countries around the world, therefore, have only seven years to reach their targets. Developing countries have a particular challenge, as they host most of the world's biodiversity but have the least capacity to conserve it. Support is needed from governments, and from organisations like IGES, with years of experience especially in Asia and the Pacific. As a global policy research institute focused partly on biodiversity, IGES is becoming increasingly visible and active in international biodiversity processes, especially those involving the CBD and the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES). IGES provides technical advice and on-the-ground support, as well as conducting high quality and relevant research to inform biodiversity policy.

In FY2022, four IGES staff authored two ongoing global IPBES assessment reports[3][4] and biodiversity-oriented chapters of the *Sixth ASEAN State of the Environment Report*. For the IPBES nexus assessment, IGES has more authors than any other institution. Various IGES publications were also cited in these and the other ongoing IPBES assessment reports on invasive alien species. IGES also continued supporting MOEJ's involvement in international efforts, including the G7 and G20 environment meetings, and IPBES, by convening meetings for the Japanese public and experts. As Japan delegates to the 9th IPBES Plenary meeting, IGES staff supported and advised Government delegates, as in previous years. Moreover, IGES started supporting the Japanese CBD delegation as well, from FY2023 onwards, in meetings to negotiate the GBF indicators and the mechanisms for planning, monitoring, reporting and review. IGES produced more than 10 publications on international biodiversity policy as well as a webinar on the GBF in collaboration with the International Union for Conservation of Nature (IUCN) and the Global Youth Biodiversity Network (GYBN). IGES produced the final draft of a biodiversity manual, in collaboration with the Secretariat of the CBD and The United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS), which received favourable reviews from CBD Parties and UN agencies. In FY2022 IGES also continued external reviews of IPBES, CBD and other documentation important to international biodiversity & forest processes and produced a set of about 100 factsheets for UNEP.

b. Promoting sustainable land use and ecosystem conservation

The first two of the three objectives of the CBD are the conservation of biodiversity, and its sustainable use. The GBF includes a target to expand terrestrial and marine protected areas (including "other effective area-based conservation measures") to 30% each by 2030. While gains are being made in forest cover in some parts of the world, the biodiverse tropics continue to be lost to cultivation and other anthropogenic uses. Meanwhile, in developed parts of the world, land abandonment is often more of a challenge than land conversion, posing its own unique challenges. IGES will continue an international collaborative research on land abandonment and restoration in Japan, Taiwan, the United States, France and Italy to generate policy recommendations.

IGES will contribute to the Forest Declaration Assessment, which assesses progress toward the global goals of halting deforestation by 2030 as set out in international declarations such as the Glasgow Leaders' Declaration on Forests and Land Use. In addition, IGES will conduct research on sustainable land-use management to achieve global biodiversity conservation and reduction of GHG emissions from the land sector. IGES will propose policy recommendations through exploring scenarios/pathways for a sustainable and resilient future under climate and ecosystem changes in Japan, the Philippines and Indonesia. In doing so, IGES will produce knowledge and provide policy inputs to Japan and global stakeholders by enhancing collaboration with key partner organisations

In FY2022, IGES contributed to the Forest Declaration Assessment as an assessment partner and produced a publication outlining the topic. IGES also contributed to the implementation of the JCM in the land sector, supporting a JCM REDD+ project development in Lao PDR, developing JCM guidelines for afforestation and reforestation for the Forest Agency, and contributing to a study on EU deforestation regulation funded by the Ministry of Foreign Affairs, Japan (MOFA). In FY2022, IGES began projects on sustainable aquatic food system research in partnership with WorldFish; on development of an integrated assessment model linking biodiversity and socio-economic drivers, and its social application (*Suishinhi* S-21); and on societal views on landscape and land-use change and their impacts on water and soils (Belmont Forum ABRESO project). Meanwhile work continued on the integration of traditional and modern bioproduction systems for a sustainable and resilient future under climate and ecosystem changes (e-Asia ITMoB project). IGES also continued its work related to the MV Wakashio oil spill in Mauritius since 2020, as the Technical

[3] *Thematic Assessment of the Interlinkages Among Biodiversity, Water, Food and Health* ("nexus assessment")
[4] *Thematic Assessment of the Underlying Causes of Biodiversity Loss, Determinants of Transformative Change and Options for Achieving the 2050 Vision for Biodiversity*

Cooperation Project by JICA was launched to support the Mauritian government to build the foundation to conserve and restore the coastal ecosystems effectively. As part of the project, an IGES staff member provides support to the promotion of sustainable tourism and assessment of ecosystem services in the project site. For another JICA project, IGES seconded a staff member to conduct research on peatland fires in Indonesia. A paper lead-authored by IGES staff about the relationship between land change and zoonotic spillover risk was published in *BioScience*, and picked up by 12 different news outlets, as well as featuring on the *BioScience* podcast.

IGES also continued to serve as the Secretariat of Satoyama Development Mechanism (SDM), one of collaborative activities under the International Partnership for the Satoyama Initiative (IPSI). The SDM provides seed funding to support IPSI members to implement projects related to conservation and restoration of socio-ecological production landscapes and seascapes (SEPLS). In FY2022 the Secretariat funded newly selected projects in Bangladesh, Chinese Taipei, Ethiopia, Mexico and Viet Nam and supported other ongoing projects.

c. Facilitating non-state actors' involvement in conservation

While great expectations are placed on governments to address environmental issues, including biodiversity and forest conservation, their capacity is limited and varies from country to country. Collectively, business and other non-state actors have arguably an even bigger role to play, and considerably more untapped potential. IGES is in a position to work with both governments and non-state actors, and even to foster public-private partnerships between them. An increasing proportion of IGES work on biodiversity involves non-state actors, especially business.

IGES will continue supporting forestry and timber business sectors, mainly in Japan, to purchase timber while avoiding illegally-sourced products. This will be done by supporting the Japanese government to develop a guideline for due diligence on timber products under the Clean Wood Act and conducting research on legal frameworks of timber producer countries and due diligence policy in demand-side countries and practices by private companies. Given increasing global attention to promote private companies' actions, such as the EU regulation on deforestation-free products and the Science Based Targets initiative (SBTi) for zero-carbon transition, IGES will also research production and supply chains of forest risk focusing on the policies and practice on the ground, as well as providing support to the business sector so that businesses can improve their supply chains by conducting supply chain and landscape analysis.

In FY2022, IGES work on responsible timber trading and produced more than 10 publications. IGES recommendations are being incorporated into the revision of the Clean Wood Act approved in May 2023. IGES work includes development of due diligence guidelines for timber business, and studies on timber producing countries (Canada, Austria) and importing countries (US, Australia, EU, Germany) commissioned by the Forestry Agency. This work, and projects on legal and sustainable timber trade in Viet Nam and China, has strengthened IGES relationship with International Tropical Timber Organization (ITTO), with which IGES signed an MOU in FY2022 as well as organising a meeting to discuss a joint plan of action. IGES began a project with the University of Tokyo on sustainable value chains, looking at coffee in Viet Nam and palm oil in Indonesia. In other work on biodiversity and business, IGES has also continued to support the Japanese committee for the development of a biodiversity standard under the International Standards Organization. IGES has also worked with the Japan Business Federation, Keidanren, in a survey of the biodiversity impacts of Keidanren companies. The success of this study is expected to lead to repeat surveys in following years, up to 2030.

(4) Shaping circular economy and sustainable lifestyles ("Make it circular")

a. Mainstreaming circular economy

Along with mainstreaming of plastic pollution issues, mainstreaming of the circular economy (CE) as a policy agenda is now observed widely both at global and national level. In the current discussion on circular economy, there is both waste management-focused CE, and CE beyond waste management and recycling. At the same time, CE approach beyond waste management and recycling is yet to materialise either as policy or as a business model. From now on, it is vital to develop and strengthen policy discourse and approaches to CE beyond recycling and as an entry point for transition to sustainable socio-technical systems.

In this context, IGES needs to develop a new theory of policy development for transition to circular economy and to conduct experimental projects facilitating new circular business models. In its capacity as a major policy think-tank in the Asia-Pacific region on circular economy policy, IGES will seek synergies and coordination among a range of on-going international initiatives on circular economy concentrating in the ASEAN and South Asian region. IGES will contribute in developing indicator systems for measuring the progress of CE beyond recycling in the International Resource Panel (IRP), Organisation for Economic Co-operation and Development (OECD) and other relevant processes. IGES aims to secure international collaborative research projects on food and plastics to enhance its expertise on policy research and incentive development for circular business models and lifestyles. By being involved with city action plan development on the 3Rs (reduce, reuse and recycle) and plastic pollution in ASEAN member countries and South Asian countries, IGES will try to establish several model cities such as those in Viet Nam, Cambodia, Myanmar, Sri Lanka and Indonesia.

In FY2022, IGES continued to be involved substantially in key international processes on circular economy and resource efficiency such as the G7 Ministers' Meeting on Climate, Energy and Environment, G20 Resource Efficiency Dialogue, IRP, OECD and Global Alliance on CE and RE (GACERE). IGES contributed to drafting of G7's Circular Economy and Resource Efficiency Principles (CEREP). IGES continued to act as main institute to synthesise relevant country information (G20 MPL report & G20 RE dialogue portal site development). IGES has also contributed to the development of the T20 Policy Brief on Circular Economy and Global Supply Chain, and to the OECD country Environmental Performance Review in the US. Domestically in Japan, IGES has been involved in several governmental committees to discuss policy measures, CE indicators, and industrial standards on circular economy. IGES continued to act as a secretariat of Japan Partnership for Circular Economy (J4CE) and organised two public-private dialogues to increase motivation to implement circular business models in the private sector. J4CE also updated its case study of circular business models.

b. Mainstreaming sustainable lifestyles

The IPCC Working Group III Report published in April 2022 has a new chapter focusing on demand-side mitigation measures, including lifestyle, society and culture. The need for lifestyle changes toward net zero societies has been broadly recognised. In addition, carbon footprint analysis has become widespread in the past decade, enabling a deeper understanding of the impact of citizens' lifestyles on greenhouse gas emissions. Changes in lifestyles can only be achieved if socioeconomic contexts of cities and communities are transformed and broader options of decarbonised products, services and behavioural choices are available. Therefore, strengthened support to the multi-stakeholder efforts to create alternative socioeconomic contexts, fully utilising scientific methods such as carbon footprint analysis and behavioural insights, are vital measures for realising inclusive transformations toward sustainable lifestyles.

IGES has taken on a leading role in promoting international cooperation, national and local policies, and grassroots initiatives to facilitate the transitions of lifestyles. Taking the opportunity of the UNGA agreement to extend the mandate of the SCP 10YFP (One-Planet Network) to 2030, IGES should collaborate with partners to re-activate the Sustainable Lifestyles and Education Programme to support city- and community-level efforts toward enabling sustainable lifestyles and livelihoods globally. It is also necessary to consider linkages with new international cooperation frameworks such as the Lifestyles for the Environment (LiFE) proposed by the Government of India, which holds the G20 Presidency (in 2023), and the G7 Platform for Net-zero and Wellbeing in Life proposed by Japan, which holds the G7 Presidency (in 2023). At the same time, in each country and community, the project aims to strengthen methods to use scientific findings, such as carbon footprints, to shape local government policies and promote grassroots initiatives that are closely linked to lifestyles. Furthermore, IGES will contribute to international partnerships that facilitate collaboration between SMEs and others providing products and services, local communities and civil society organisations to ensure that decarbonised products, services, infrastructure and behaviour options are made available to cities and communities around the world.

In FY2022, under the 1.5°C Lifestyle initiative, IGES worked with the citizens of Kitakyushu City, Kagoshima City and Odate City to develop a vision for a decarbonised lifestyle-enabling for each municipality. In Odate City, the project could incorporate citizens' wisdom into the process of formulating a local government action plan. IGES contributed to the final year of the EU's SWITCH- Asia programme Phase 2. It finalised policy research in the textile sector in Cambodia and policy guidance for the seafood sector in Viet Nam. Capacity building programmes were also conducted in both countries for government and industry stakeholders using the research findings. IGES initiated two new projects on sustainable living in FY2022. One project aims to apply behavioural science to the reduction of single-use plastic products at the retail and consumption stage. IGES administered a call for pilot projects in Asian countries and selected four project partners from the Philippines, Viet Nam, Thailand and Indonesia to implement projects to reduce the use and disposal of plastic products. The other project is action research in Japan, aiming to develop local visions for sustainable food contributing to a nature positive and net zero society.

c. Ending pollution and improving environmental quality

Managing pollution is crucial to improving human health and well-being as well as moving towards a pollution-free planet in line with the SDGs. Addressing waste, chemicals and air pollution is also linked to climate change mitigation, especially when action is taken against short-lived climate pollutants (SLCPs, e.g. methane and black carbon). Emerging waste, such as plastics and health-care as well as the implication this has for chemicals and pollution is a powerful motivation for sound management of chemicals and waste, as agreed on by the Member States at UNEA (United Nations Environment Assembly)-5.2.

In this regard, IGES, along with UNEP, ESCAP, the World Bank, Asian Development Bank (ADB) and others, will continue supporting national and local governments to develop integrated waste management strategies and policies considering the reduction of SLCP emissions, formulating evidence-based national plastic and marine litter action plans based on the 3Rs, as well as increasing resource efficiency and circularity while providing technical support to national and local governments in the region to strengthen institutional capacities and facilitate their implementation at the city level. To achieve this, IGES will continue its active involvement within the UNEP-CCAC (Climate and Clean Air Coalition)-Waste Hub and National Planning Hub in providing technical support and building capacities of developing countries in Asia (Indonesia, Cambodia, Myanmar, Pakistan, Sri Lanka) to reduce SLCP emissions from the waste sector, through managing food loss and waste, closing open dumps and reducing open waste burning. IGES also aim to integrate such measures into NDCs and other development plans. As for the plastic waste management, IGES will provide technical support to national governments in at least three countries in the region to build the capacity to establish sound data management, policies and monitoring systems to manage transboundary plastic pollution in close collaboration with UNEP and Economic Research Institute for ASEAN and East Asia (ERIA) Regional Knowledge Center for Marine Plastic Debris. IGES

will also engage with regional (ASEAN and South Asia) and global (International Negotiation Committee for Legally-binding Instruments for Plastic Pollution (INC), UNEA, G20, G7) policy dialogues for mainstreaming plastic pollution.

In FY2022, IGES Centre Collaborating with UNEP on Environmental Technologies (CCET) has continued to conduct evidence-based policy research, providing technical support, technical and capacity building to national and local governments, particularly in Sri Lanka, Indonesia (Fadang City), Myanmar, and Cambodia to formulate national and sub-national action plans for managing municipal waste including plastic waste and marine litter, healthcare and COVID-19 waste, thereby mitigating pollution, decreasing biodiversity and climate change impacts, increasing resource efficiency and promoting circular economy. CCET also contributed to several globally-recognised knowledge products including the waste and chemicals chapter of the *Sixth ASEAN State of the Environment Report*, *Global Waste Management Outlook 2* by UNEP and International Solid Waste Association (ISWA) , Assessment Report of Climate Impact of Black Carbon Emissions from Open Burning of Solid Waste, Training Needs Assessment Reports Towards Micro-Plastic Monitoring in Viet Nam and Sri Lanka. CCET conducted a series of training and capacity building and engaged in global policy dialogues such as Global Methane and Short-lived Climate Pollutants (SLCPs) Dialogue by CCAC and IPCC, global waste and chemicals pollution dialogues by IETC, Basel Rotterdam and Stockholm Convention Secretariat, and Strategic Approach to International Chemicals Management (SAICM). Through capacity development and technical support activities on waste management and plastic pollution prevention, CCET strengthened partnership with ADB and the World Bank.

For marine plastics and circular economy, IGES continued to support policy initiatives by ASEAN Secretariat and ASEAN member states in particular. For example, it continued to engage in National Plastic Action Plan Development in Myanmar and Cambodia, and a total six pilot cities were chosen for capacity development in evidence-based policy making for plastic pollution prevention. Under the Technical Working Group of Regional Knowledge Center for Marine Plastic Debris in ERIA (ERIA RKC-MPD), IGES published a report on "Building Data on the Plastic Value Chains in ASEAN Member States" as well as co-organised a webinar on Extended Producer Responsibility (EPR). IGES, ERIA and OECD agreed to develop an Asia-version of Global Plastic Outlook as a flagship publication on policy evaluation. IGES also finalised research in Viet Nam, Ghana, and Indonesia on how multi-stakeholder dialogue and process could facilitate actions against marine plastic litter and the formulation of circular economy policy in the context of developing countries. IGES also began to engage in the INC and organised a reporting session of INC1 at ISAP 2022. IGES also contributed to developing a Plastic Action Plan for Kanagawa Prefecture.

1.2. Highlights of impact generation

1.2.1. Impact Cases

In close collaboration with diverse stakeholders, IGES aims to generate "impact" that facilitates the transition towards realising sustainable societies. In its ISRP7, which began in FY2017, we set our target to have 25 successful cases annually. The target was met from FY2017 through 2020, with 25 (FY2017), 36 (FY2018), 35 (FY2019) and 37 (FY2020) cases.

IGES will aim to report 30 impact cases each year as one of the key performance indicators specified in ISRP8. ISRP8 will also aim for greater impact cases (three large/significant impacts and seven medium) and a variety of impact types by employing effective outputs and means (communications, networking, knowledge management) for the impact-making process at IGES.

In FY2022, SMO-KC received 34 impact cases in total. Out of 34 cases, seven cases were categorised as "Impact 1" (changes in policy, planning and practices) or large-scaled impact cases, and nine cases were

categorised as “Outcome 3” (uptake of IGES proposal and acted upon by target stakeholders) or medium-scaled impact cases(see Table 1).

Table 2: ISRP8 Key Performance Indicators for Impacts

Indicator	Baseline (ISRP7)	Annual Target	2021 Results	2022 Results	2023 Results	2024 Results
Total impact cases reported	25	30	40	34		
(Breakdown) Large-scale cases	-	3	8	7		
(Breakdown) Mid-scale cases	-	7	16	9		
(Breakdown) Other cases	-	20	16	18		
Indicator without Target	**Baseline (ISRP7)**	**Indicative Reference**	**2021 Results**	**2022 Results**	**2023 Results**	**2024 Results**
(Breakdown) International processes	-	n/a	17	14		
(Breakdown) Policy and institutional changes	-	n/a	32	29		
(Breakdown) Practical solutions	-	n/a	24	27		
(Breakdown) Media	-	n/a	9	12		
(Breakdown) Academic	-	n/a	13	16		

Below is a list of selected cases with high-level impacts (Impact 1 and Outcome 3) in FY2022.

Table 3: List of High-Impact Cases in FY2022

＜Impact 1 / large or significant impact cases＞

No.	Case title / Impact	Unit name
I-1	Further Development of the “Kanagawa Decarbonisation Vision 2050,”jointly prepared by Kanagawa Prefecture and IGES ♦ Kanagawa Prefecture re-organised its global warming countermeasures division and energy division, which had been divided into the Environment and Agriculture Bureau and the Industrial and Labor Bureau, and established a new “Decarbonisation Strategy Headquarters Office” with 70 staff members, in the Environment and Agriculture Bureau. ♦ Kanagawa Prefecture established a decarbonisation model region in Miura area and launched a research project.	Led by CE In collaboration with CTY

	♦ Kanagawa prefecture has established "Kanagawa Decarbonisation Promotion Council" to materialise the concept of "the Kanagawa Decarbonisation Vision 2050." ♦ "The Kanagawa Decarbonisation Vision 2050" was referred by the revised Plan for Global Warming Countermeasures by Kanagawa Prefecture (draft version). ♦ "The Kanagawa Decarbonisation Vision 2050" was referred by the revised Environmental Basic Plan (draft version).	
I-2	National Plastic Action Plan in Sri Lanka: A Practical Guide to Strategic Change in Managing Plastic Waste ♦ The project activities so far contributed to create a substantial impact in managing plastic waste in Sri Lanka as summarised below: (1) Strengthened institutional setup in managing plastic waste at national level: - A new unit within MOE (National Plastic Centre) was established to coordinate plastic waste management activities within the ministry in coordination with other stakeholders. - National plastic waste management inventory based on the material flow analysis was developed for monitoring of plastic waste generation in the country, etc. (2) Established sector-based policies and regulatory mechanisms to control/ reduce production of plastics: - Banning of selected single use plastic items and identify alternative products based on scientific evidence, etc. (3) Increased awareness and behaviour changes on sustainable practice of plastic use in selected sectors: - Zero plastic waste school programme: Three pilot schools demonstrated activities based on the whole school approach. National curriculums are developing to integrate the experience into formal education, etc.	Led by SCP-CCET In collaboration with CTY, AW, ISC, KUC, BRC
I-3	Key Regional Knowledge Player on Resource Efficiency and Circular Economy: Contribution to Adoption of G7's Circular Economy and Resource Efficiency Principles (CEREP) at G7 Summit and Environment Ministers' Meeting 2023 ♦ Circular Economy and Resource Efficiency Principles (CEREP) form a part of the official outcome/outputs of the G7 process in Japan 2023 including the Summit-level outcomes. ♦ SCP team has been involved in G7 and G20 processes for mainstreaming circular economy and resource efficiency. CEREP can be considered as a symbol of IGES's dedicated contribution to mainstreaming Circular Economy and Resource Efficiency in the context of the G7.	SCP
I-4	Becoming Regional Think Tank for Policy Research on Preventing Plastic Pollution and Promoting Circular Economy in ASEAN+3 and beyond	Led by SCP In collaboration with KUC, ISC, AW, BRC

	• IGES and ERIA are now recognised as leading think-tanks on policy research on marine plastics and circular economy. Recognition was made by OECD, the World Bank, World Economic Forum and UNOPS. • IGES's key recommendation in E-READI report titled "Circular Economy and Plastics" is now reflected into key actions of ASEAN Regional Action Plan on Marine Plastic Debris and the World Bank's SEAMAP programme.	
I-5	Contribution to the revision of Clean Wood Act • Clean Wood Act was amended in May 2023 including various significant changes partly as IGES recommended. The Act is the first law in Japan to require (not just promote) Due Diligence for businesses and can influence other policies on supply chain management (e.g. deforestation, human right etc.) in Japan. • IGES was formally invited to present in the "Study Group on Distribution and Utilization of Legally Harvested Wood" by the government (the Forest Agency, FA), and some of IGES recommendations have been taken up in the "Interim Summary". Based on these IGES recommendations, FA developed a set of Due Diligence guidelines, commissioned by IGES. • IGES was invitied to take part in the "Study Group on Distribution and Utilization of Legally Harvested Wood," one-on-one briefing, and was called upon to support the Japan Federation of Wood Industry Associations (JFWIA) as well as being asked to give presentations at seminars in China and Viet Nam, and signing an MOU with ITTO. In this way, IGES has been recognised by governments especially the FA and private business in Japan and overseas as one of the most expert and influential research institutes on timber legality in Japan	BDF
I-6	Japan Climate Leaders' Partnership (JCLP) successfully shared a sense of urgency and fostered positive momentum towards a credible and accountable net-zero transition in Japan • JCLP member companies (Ricoh, Murata) led renewable energy procurement through Virtual Power Purchase Agreement (VPPA). • NHK BS broadcast a documentary programme featuring JCLP on 9 April 2023. The programme was well received by viewers and it was rebroadcast. • An audience of more than 700 participated in a webinar featuring Michael Liebreich (Founder of Bloomberg New Energy Finance (Bloomberg NEF), global energy analyst and advisors to governments, the United Nations, and prominent energy companies) to learn about the most effective use of clean hydrogen.	BIZ

I-7	Improved environmental quality in ASEAN cities through better long-term city planning and higher capacity to implement transformative local actions, closely linked to the SDGs ♦ Under this project, various programmes have been conducted in nations/cities in ASEAN, for example: - Kep, Kampot and Pursat (Cambodia) have expanded the range of environmental good practices in respective Model Eco-Schools, from reducing litter and single use plastics, to encompass wider issues such as biodiversity conservation, rainwater harvesting, solar lighting and collection of recyclables. - Banjarmasin (Indonesia) has piloted Indonesia's first plastic-free fresh markets, which is expected to provide guidance and inspiration to other cities in Indonesia as well as ASEAN. - Banyuwangi (Indonesia) and Kuala Langat (Malaysia) have established the first community Waste Bank (waste recovery centre) and began piloting the composting of organic waste among nearby residents of local beaches/mangrove parks, etc. ♦ This project has directly engaged an estimated total of 180,519 individual beneficiaries across eight ASEAN Member States and 24 participating cities. This comprises representatives from national government agencies, local government, NGOs, community/citizen volunteers, academic institutions (particularly schools), private sector, media and others (including tourists and external visitors).	BRC

＜Outcome 3 / medium impact cases＞

O-1	Operationalisation of the CES-Asia consortium as a regional platform for developing model action programme for CES application towards greater resilient city regions in South Asia and Southeast Asia	Led by ISC In collaboration with CTY, AW, BRC, BDF, SCP, KRC, CE
O-2	Further involvement in the Climate Actions: Stakeholder engagement and formulating comprehensive regional (& city scale) climate strategies	Led by ISC In collaboration with AW, SCP, FIN
O-3	Interlinkages of the transition to a low-carbon society and achieving Sustainable Development Goals in Lampung, Indonesia	Led by ISC In collaboration with CTY, SMO

O-4	Article 6 implementation has been advanced with the establishment of the Paris Agreement Article 6 Partnership Center	Led by CE In collaboration with BRC, SMO
O-5	Sustainable Lifestyles & Livelihoods	SCP
O-6	Strengthening community resilience against multi-hazard risks and other climate change issues through partner collaboration of AP-PLAT	AW
O-7	Improved Water Quality Governance in WEPA Partner Countries through WEPA Action Program in Indonesia, Cambodia, and Myanmar	AW
O-8	Strengthening of local actions to accelerate a transition towards zero-carbon cities	Led by KUC In collaboration with CTY, FIN, KRC
O-9	UN Global Assessment Report on Disaster Risk Reduction 2022 – Contributing Paper	Led by BRC In collaboration with AW

1.2.2. Outputs

(1) Written publications

ISRP8 established three main targets for written publications. The first target is 150 strategic publications annually for impact generation, and it includes a range of publication types which can support diverse strategies to influence different target audiences. The second target is 100 academic publications. The third target is that 20 academic publications should have an IGES researcher as the first author. All three targets were met in FY2022, and the target for strategic publications was exceeded by about 10%, while the target for IGES first-authored academic publications was exceeded by 75%. (See Table 4-1. The main publication types covered by each target are indicated in the note to Table 4-1.) The breakdown of IGES first authored academic publications by publication type is indicated in Table 5. It shows that 20% of peer-reviewed articles had an IGES researcher as first author, while other publication types had a much higher rate of IGES first authors. The number of peer reviewed articles with Impact Factor over 3 published in CY2022 was 79, about 80% of the total, and about 20% of the articles were published in journals with an impact factor above 7

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Table 4-1: ISRP8 Key Performance Indicators for Strategic Outputs and Academic Publications and Impacts (with target)

Indicator	ISRP7 Target	ISRP8 Target	2021 Results	2022 Results	2023 Results	2024 Results
Number of strategic outputs*	100	150	226	167		
Academic publications**	30***	100	104	108		
Of which first-authored academic publications	-	20	45	35		

* Policy reports, policy briefs, briefing notes, commentary/op-eds, submission to policy processes, non-peer reviewed articles, etc.
** Peer-reviewed articles, books, book chapters, working papers, etc.
***This refers only to peer-reviewed articles.

Table 4-2: ISRP8 Key Performance Indicators for Academic Publications and Impacts (without Target)

Indicator without Target	ISRP7 Target	Indicative Reference	2021 Results	2022 Results	2023 Results	2024 Results
IGES flagship and priority publications	2	4 (FY2020)	5	4		
Number of peer reviewed articles with Impact Factor over 3	-	28 (Feb. 2020-Feb. 2021)	66 (CY2021, Scopus)	79 (CY2022, Scopus)		
Number of citations received in a calendar year by academic articles published in the past 5 years	-	714 (CY 2020)	1,433 (CY2021)	2,007 (CY2022)		
Annual increase in citations of academic articles from previous year	-	34% (Feb. 2020-Feb. 2021, Web of Science)	34% (CY2021, Scopus)	34% (CY2022, Scopus)		

Note: FY results are based on CY data from SCOPUS. SCOPUS includes peer-reviewed articles and other academic publication types.

Table 5: Academic Publications with IGES as First Author

	Target	FY2021 Total	FY2021 First author	FY2021 % First author	FY2022 Total	FY2022 First author	FY2022 % First author
Academic publications (total)	20	104	45	43%	108	35	32%
Peer-reviewed articles	NA	71	20	28%	82	16	20%
Books	NA	5	4	80%	3	3	100%
Book chapters	NA	15	11	73%	13	9	69%
Research reports/working papers	NA	13	10	77%	10	7	70%

Four publications were designated as flagship/priority publications in FY2022. Two policy reports on *SDGs Progress Report 2023: Concrete Actions by GCNJ Companies and Organisations in Japan* (English version) and *SDGs Progress Report 2022: Survey Results on the Efforts of GCNJ Companies and Organisations (English version)* are part of bilingual annual series on Japanese business and SDGs. Two T7 policy briefs led by IGES researchers were published: "Putting Societal Well-Being at the Core of G7 Climate Strategies: Entry Points and Enabling Reforms", and "Critical Minerals for Net-Zero Transition: How the G7 can Address Supply Chain Challenges and Socioenvironmental Spillovers" (T7 is the official think tank engagement group of the G7).

Notable timely publications included a book chapter on "Overcoming the Climate Crisis and Achieving the SDGs: After COVID-19 and the Russian Invasion of Ukraine", and an issue brief on "Environmental and Sustainability Implications of the Ukraine War for East and South Asia: Sustainability and Decarbonisation Should Be Accelerated Not Paused." IGES also contributed to the T7 Issue Paper on "Integrated Approach for Well-Being, Environmental Sustainability, and Just Transition."

Further notable publications on SDGs included an IGES-led report by UNEP on "Strengthening the Environmental Dimension of the Voluntary National Reviews in Asia-Pacific: Lessons Learned and Ways Forward", and a peer-reviewed article on ASEAN countries' environmental policies for the Sustainable Development Goals (SDGs)." A notable publication on climate was a peer reviewed article on "Low-Carbon Lifestyles beyond Decarbonisation: Toward A More Creative Use of the Carbon Footprinting Method," "Nature-based solutions for climate change adaptation: A systematic review of systematic reviews," "National GHG inventory capacity in developing countries – a global assessment of progress," and Implications of Regional Droughts and Transboundary Drought Risks on Drought Monitoring and Early Warning: A Review."

Waste and plastic pollution were highlighted by various publications, including a peer reviewed article on "Assessing Economy-wide Eco-efficiency of Materials Produced in Japan" a policy report on "Building Data on the Plastics Value Chain in ASEAN Member States", and a book chapter on "Microplastics in Waste Water Treatment Plants."

Biodiversity-related peer reviewed articles included "Exploring bioproduction systems in socio-ecological production landscapes and seascapes in Asia through solution scanning using the Nature Futures Framework," "Transformative change of paddy rice systems for biodiversity: A case study of the crested ibis certified rice system in Sado Island, Japan," and Messaging Should Reflect the Nuanced Relationship between Land Change and Zoonotic Disease Risk."

IGES continued to emphasise submissions to policy processes in FY2022. Major ones included "Da Nang City Climate Action Plan - A conceptual framework for sectoral climate actions," "Action Plan on Integrated Solid Waste Management in Padang City (2023-2030)," "IGES submission to the first Global Stocktake," Japanese translations of CCET guideline series on intermediate municipal solid waste treatment technologies ("Composting" and "Waste-to-Energy Incineration"). Briefing notes on the status and interpretation of major global policy processes were produced, including the Post-2020 Global Biodiversity Framework (GBF) and CBD COP15 (English and Japanese), An Overview of IPBES-9 and the 2022-2023 Intersessional Period for IPBES, パリ協定・第 1 回グローバル・ストックテイク（GST）: COP27 における第 2 回技術的対話と交渉会合の結果 (*First Global Stocktake (GST) of the Paris Agreement: Results of the second technical dialogue and negotiation session at COP 27*), 気候変動への「適応」と「損失と損害」 に関する COP27 の結果速報 (*Preliminary report: the results of COP27 on 'Adaptation' and 'Loss and Damage'*), and G20 環境・気候大臣会合の結果を受けたコメント ～環境パートに関して～ (*Comments on the Results of the Environmental part at the G20 Joint Environment and Climate Ministers' Meeting*).

IGES made important contributions to four major assessment reports in FY2022 in various capacities. IGES contributed to two IPBES assessments, through one Coordinating Lead Author, one Lead Author,

and one Review Editor of the *Thematic Assessment of the Interlinkages Among Biodiversity, Water, Food and Health* ("nexus assessment"), and a Fellow of the *Thematic Assessment of the Underlying Causes of Biodiversity Loss, Determinants of Transformative Change and Options for Achieving the 2050 Vision for Biodiversity*. IGES has been coordinating the *Sixth ASEAN State of the Environment Report*. IGES is contributing to UNEP's *Global Environment Outlook* 7 (GEO-7) including two Coordinating Lead Authors and six Lead Authors.

IGES has continued to produce translated outputs. Last year 27 translations were produced (E→J: 23, J→E: 2, others 2). This was 11 less than in the previous year, including translations of both IGES and non-IGES publications, mainly due to fewer translations into non-Japanese languages. IGES translated the Club of Rome's new report "Earth for All: A Survival Guide for Humanity" into Japanese, which was published by Maruzen. Some translations of new editions of major UN reports into Japanese were continued from the previous years including UNEP's Adaptation Gap Report (Executive Summary) and Emissions Gap Report (Executive Summary). As a new initiative, a series of Japanese webinars to promote these translations was launched in FY2022.

Table 6: Translated Outputs

		FY2019	FY2020	FY2021	FY2022
By Language	English→Japanese	23	22	23	23
	Japanese→English	9	12	5	2
	Other language	0	3	10	2
By Type of Output	Non-IGES Outputs	16	12	12	16
	IGES Outputs	9	19	23	10
	Commissioned work	7	6	3	1
Total Translations		**32**	**37**	**38**	**27**

(2) Citations of peer-reviewed articles

IGES continues to make good progress in terms of citations to peer-reviewed journal articles as shown in Table 7. IGES tracked citations for seven years using two different calculation methods, one from the Web of Science (WOS) which tracks citations mainly in academic articles, and one using Google Scholar, which tracks citations in a much wider range of publications including "grey literature" and outputs by international organisations. From FY2021, results from WOS were replaced by the results from SCOPUS, since SCOPUS covers a wider range of publication types, including some books and book chapters. FY2021's comparison included the figures from both WOS and SCOPUS, but from FY2022, only the figures from SCOPUS will be reported. Citations from Google Scholar are also reported, but only for the articles listed in SCOPUS.

Citations of IGES Publications are presented in Table 7. IGES publications listed in SCOPUS had about two-thirds as many cumulative citations as calculated by Google Scholar (21,086) compared to SCOPUS (12,687), and Google Scholar is considered more appropriate for IGES since the target audience for IGES outputs is much wider than just the academic community, which is the focus of SCOPUS. Citations in Google Scholar increased by 5,156 between CY2021 and 2022, an increase of 32%, which was similar to SCOPUS citations which increased by 34%, based on 99 additional publications. The continued steady increase in the number of citations may be attributed to the increasing number of peer-reviewed articles as well as the increasing number of articles which are published in higher ranking journals such as *Nature Climate Change*, *Global Environmental Change, Sustainability Science, Journal of Environmental Management, Applied Energy,* etc.

Citations of IGES titles published in the previous five years in SCOPUS increased by 40% from 1,433 in CY 2021 to 2,007 in CY2022. Thus, newer titles published in the previous five years accounted for 63% of all new SCOPUS citations in CY2022, about the same as CY 2021, indicating that the newer articles have become more important compared to the older ones in driving the number of citations.

IGES does not track citations for all publication types because many are not included in SCOPUS and checking one by one on Google Scholar is very time consuming.

Table 7: Citations of IGES Publications

		WOS*	SCOPUS*	Google Scholar (WOS titles)*	Google Scholar (SCOPUS titles)*
Cumulative total articles	CY2020	430	525	(430)	NA
	CY2021	496	629	(496)	(602)
	CY2022		728		(728)
Articles yearly increase	CY2021	66	104		
	CY2022		99		
Articles percent increase	CY2021	15%	20%		
	CY2022		16%		
Cumulative citations	CY2020	5,800	7,094	10,914	
	CY2021	7,600	9,502		15,930
	CY2022		12,687		21,086
Citations yearly increase	CY2021	1,800	2,408		
	CY2022		3,185		5,156
Citations percent increase	CY2021	31%	34%		
	CY2022		34%		32%
Citations of titles published in the past 5 years in SCOPUS **	CY2020		714		
	CY2021		1,433		
	CY2022		2,007		
Percent increase in citations of titles published in the past 5 years in SCOPUS**	CY2021		101%		
	CY2022		40%		

Notes:

* For CY2020 and CY2021 results, approximate values were calculated in Feb. 2021, Feb. 2022 (WOS, GS) and July 2022 (SCOPUS). CY2022 approximate values were calculated in Feb.2023 (SCOPUS, GS).

**SCOPUS includes peer-reviewed articles and other publication types such as book chapters, etc.

(3) Strategic Research Fund (SRF)

In FY2022, 22 SRF projects were approved. As in FY2021, nearly all the proposals were accepted, although a few proposals were shifted to the SOF, and most did not receive the full requested budget. Therefore, most of the projects were on a relatively small scale.

A review of the FY2021 SRF was conducted in FY2022, and the results were positive, generally similar to the results found in the reviews of previous years. Overall, 43 completed outputs (including 16 peer-reviewed articles) were produced, about the same as 44 from the previous year's initial review), while there was significant progress (completed draft, submitted for review, or accepted for publication) on another 17 outputs. The number of funding proposals developed was 19, compared to 21 in the previous year, of which nine were accepted, one rejected, and nine were waiting for results at the time of the review. Some projects even achieved a certain level of impact despite the very short timeframe, and most made at least some progress, especially by making presentations, funding proposals, and building relations with collaborators, policymakers, and other stakeholders. Some were mentioned in the media, for example *NHK*, or cited in major assessment reports such as *IPCC AR6*, or presented at major global and regional events such as the HLPF and the Asia-Pacific Forum on Sustainable Development (APFSD). The results of one project contributed to the Comprehensive Plan of Sado City in Japan. Overall, the SRF served as an effective internal mechanism to support IGES's own research activities.

(4) Sustainability Science

IGES jointly manages the peer-reviewed journal Sustainability Science (published by Springer) with the University of Tokyo, and the editorial office is located at IGES. IGES President Kazuhiko Takeuchi is the Editor-in-Chief. The journal's impact factor increased decreased slightly from 7.196 in 2021 to 6.0 in 2022, and its 5-year impact factor also decreased slightly from 7.934 to 7.4. However, the journal has become more competitive as its acceptance rate decreased from 22% in 2021 to 18% in 2022. A total of 175 articles were published in 2022. The Managing Editor is an IGES researcher, and in 2022, 14 IGES researchers served as editors and 20 served as reviewers. IGES researchers published nine peer-reviewed articles in the journal in 2022.

1.2.3. Strategic Networking and Communications

Along with strategic and academic outputs, strategic networking and communications are indispensable elements for impact generation. IGES defines impact as tangible societal changes, as well as changes in individual behaviour, due to actions taken by IGES and its partners. In other words, the purpose of strategic networking and communications is to plan, coordinate and execute the operations necessary to deliver IGES messages in a way that stimulates people's thinking and behaviour. It is important to promote project planning and implementation with a clear view regarding their objectives and means. To this end, we should firstly clarify what kinds of changes are intended, then we should also deal with the question of 'to whom, when, and how key messages and recommendations derived from IGES research should be delivered' in the course of project planning and implementation.

Strategic networking allows IGES to not only build and maintain relationships with partners who share the same objectives, but also to leverage the strengths of each partner to enhance joint operations and create synergies. Depending on the characteristics of the partner, there are various types of networks, including those that contribute to the co-production of strategic and academic products and those that contribute to the creation and enhancement of opportunities to disseminate IGES messages and recommendations. These networks will form the basis for IGES strategic operations.

The purpose of strategic communications is to use IGES communication channels to deliver key messages and recommendations from its original strategic and academic publications, as well as main findings from important global assessments on the environment and sustainable development. IGES communication channels include but are not limited to online and face-to-face events convened by IGES and its partners, press releases and announcements, websites, newsletters and social media. External media such as newspapers, TV and radio programmes, and magazines are also utilised when considered viable and effective. Strategic communications are essential for impact generation.

In FY2022, IGES maintained and strengthened existing partnerships and networks with international organisations and their units, global and regional initiatives and programmes for impact generation. IGES also maintained and strengthened its strategic communications, aiming to reach target audiences in a timely and effective manner. The target audience reaction may manifest in different forms; however, the number of visitors to the IGES website and the amount of media coverage roughly reflects trends in target audience interests and responses. Table 8 (below) summarises key performance indicators for strategic networking and communications, including annual targets and expected achievements.

Table 8: ISRP8 Key Performance Indicators for Strategic Networking and Communications

Indicator without Target	Baseline (ISRP7)	Indicative Reference	2021 Results	2022 Results	2023 Results	2024 Results
MOU with key international organisations	10	Maintain	12	14		
Pageviews of IGES Website	1,080,000 (FY2020)	Annual increase by 20,000	1,404,461	1,140,774		
Media Coverage	250	300 (2021 target) and annual increase by 10	255	392		

In FY2022, the number of visits to the website is declining for the first time in several years. It is not that only specific pages or specific times of the year are declining, but a declining trend started to be seen from around May-June last year and has been consistently declining throughout the entire website since then. In addition, until the previous year, the website was evaluated as having worked well in attracting light interest groups searching for relevant keywords due to the high inflow from natural search, but this year, the inflow from such organic search has decreased. These facts suggest that public interest in the topics and keywords which IGES is focusing on may be waning. Furthermore, the decline in access from almost all regions outside the US, including Japan, suggests that this may not be a domestic-only trend. These and other factors, such as the war in Ukraine, may be behind the shift in international interest from environmental issues to security issues. On the other hand, the number of views on COP27- and G7/G20-related content has increased over the previous year. Furthermore, while Article 6-related content attracted more views in the previous year, the number of contents itself has decreased in the current year, which in turn has led to a decrease in the number of views. These facts suggest that, domestically, there is a pinpointed interest in specific topics.

In contrast to the decrease in the number of website views, media coverage has increased compared to the previous year. The main reasons for this were an increase in articles distributed by news agencies, such as Kyodo News, and an increase in exposure related to the UNFCCC COP compared to the previous year. The same applies to foreign language media, where the influence of a single article distributed via news agencies appeared across multiple media outlets. Whilst the strategy centred on special webpages, which we began to emphasise from the fiscal year 2021, saw no significant change in the number of

initiatives in 2022 compared to the previous year, there was a marked shift in operations focusing on using it as a strategic information dissemination hub. A notable example was the COP27 special webpage. Having been made public in September, the page served effectively as a reference source for the media. This meant that many COP-related articles, other than those reporting on IGES, followed the tone of our special page; it can be said that IGES took a thought leadership role, which is a more significant achievement than the number of exposures.

The above trends in IGES website views and media coverage show that the interest of interested groups has grown stronger and their need for information has increased, while the interest of the less interested groups has waned. As a result, the inflow of light interest groups has decreased and IGES has not been able to attract alternative groups. As contents that can certainly attract visitors has become apparent, it will be necessary to strengthen these contents in the future and ensure that they will not be missed, while at the same time developing information needs that are different from those of the past, such as biodiversity and circular economy. In addition, IGES actively uses a variety of distribution methods as a means of communicating information, such as blogs via “note,” audio content via podcasts and videos via YouTube, and will focus on attracting new domestic and overseas users by further strengthening these tools. Furthermore, in order to strengthen the linkage between the website and these various distribution tools, the marketing tool 'Shannon', which was newly introduced this year, will be used more effectively.

2. Governance

2.1. Summary of Financial Settlement[5]

Overview

The total revenue and expenditure in FY2022 were JPY 2,957 million and JPY 2,960 million respectively, resulting in a deficit of JPY 3 million. The amount of the deficit was withdrawn from the Deposit for Promoting Strategic Initiatives, consequently, the substantial balance was resulted in positive balance (Table 9 and 10).

Table 9: **Substantial Balance and Unrestricted Net Assets** (JPY million)

		FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
Fiscal Balance		99	26	▲ 72	▲ 19	86	▲ 3
Deposit for Promoting Strategic Inititatives	Withdrawal in total			72	19		3
	Reservation	99	26			23	
Substantial Balance		0	0	0	0	63	0
(Reference)							
Unrestricted net assets at end of year		971	994	922	903	989	986
（included in the above） Deposit for Promoting Strategic Inititatives		352	378	306	287	309	306

Breakdown of Revenue and Expenditure

Major items for both revenue and expenditure are summarised in Table 10.

Table 10: Breakdown of FY2022 Financial Results (JPY million)

	FY2021 (Result)	FY2022 (Result)	2022-2021 Difference
【Revenue】			
Contribution from MOEJ	500	500	0
Subsidies from Local Government	132	132	0
External fund for Projects	1,856	2,024	168
Others	96	83	-13
<Foreign exchange valuation gain>	<63>	<30>	<-33>
Total	2,584	2,739	155
Support for office rent by Local Government	210	218	8
Grand Total	2,794	2,957	163
【Expenditure】			
Operation Costs for Externally Funded Project	790	882	92
Operation Costs for Own Initiatives	74	90	16
Personnel Costs	1,366	1,513	147
Administrative Costs	268	257	-11
Total	2,498	2,742	244
Office rent supported by Local Government	210	218	8
Grand Total	2,708	2,960	252
Balance	86	-3	
(Reference)			
Project FVA Ratio (overall average)	64%	63%	

[5] Excluding APN, IPCC-TSU and JISE.

On the revenue side, the overall volume of raised funds reached about JPY 2,024 million, in addition to the contribution from MOEJ (JPY 500 million) as well as subsidies and support from local governments including Kanagawa Prefecture, Hyogo Prefecture and Kitakyushu City (JPY 132 million). Major items for both revenue and expenditure are summarised in Table 10.

Under external funds, in addition to the domestic projects from MOEJ and others, IGES implemented various overseas projects funded by ClimateWorks Foundation, GIZ, ITTO, International Urban and Regional Cooperation (IURC) of the EU, JAIF, KR Foundation, SWITCH-Asia SCP Facility of the EU, UNFCCC, UNEP, UN-Habitat, UNU-IAS and others. Trend of sources of external funds (domestic or international) is presented in Figure 1.

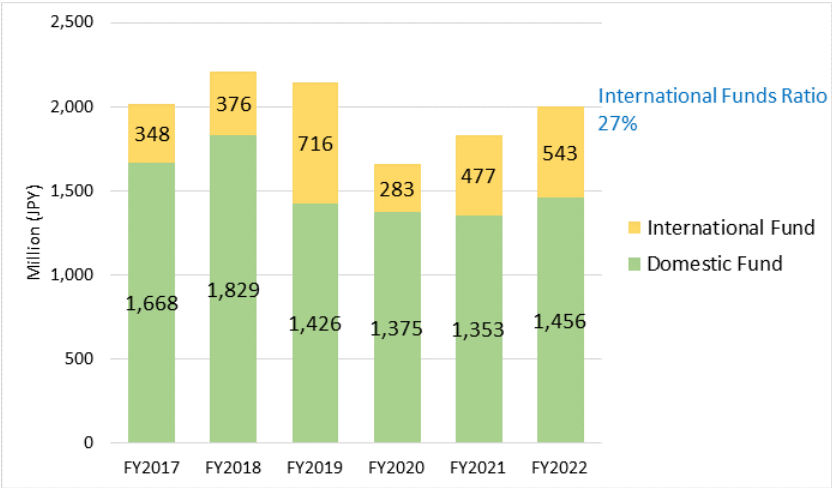

Figure 1: External Funds by Source (FY2017-FY2022)

In FY2022, while hybrids activities with combination of virtual/online and face-to-face have become more common in the international/domestic conferences, capacity building activities and on-site research activities, face-to-face activities have been gradually recovered and related costs for overseas travel and conferences were increased.

Personnel costs[6] were increased along the increase in the number of staff members, and administrative costs were slightly decreased from the previous year. The ratio of the administrative costs out of the total expenditure was 8.8%.

The project FVA ratio on average was maintained at over 60%, more specifically 63% at the settlement-base,[7] which contributed to securing the amount of FVA to allocate enough funding to human resources and others required to implement strategic research and operations.

The results of key performance indicators set for governance for ISRP8 are summarised in Table 12.

[6] In accounting, the incurred personnel costs are logged when the project is completed and corresponding payment is made. Thus, the personnel costs of FY2022 in Table 10 include those incurred for the whole period (including FY2021) in each project completed in FY2022, but it excludes those in the ongoing projects. For these reasons, this personnel costs (Table 10) do not directly reflect the number of staff members (Table 11).

[7] The average ratio of the projects for which revenue was recorded in FY2021. Projects for which FVA is zero by nature (APN projects, UNFCCC projects, grant projects, etc.) are excluded. See Notes to indicators [3] in the Table 12 for the definition of the project FVA.

2.2. Human Resource (HR) Management

SMO-PM continued its recruitment activities to acquire the human resources necessary for strategic research activities in the 8th phase. It also maintained capacity development opportunities for staff members under the secondment arrangement with other institutes, such as ERIA, JICA, ICLEI Japan and Kawasaki Environment Research Center and hosted interns and visiting researchers from other universities and institutions.

Continuing from last year, PM provided a special training opportunity with an invited lecturer to improve leadership and communications skills for Senior and Principal staff members, and organised other in-house seminars for capacity development and IGES operations as well as harassment awareness training session with all staff required to participate. PM also rolled out a mentoring programmes.

IGES D&I Taskforce, comprised of staff from PM and ISC, conducted focus group meetings and developed a draft *D&I Overarching Recommendations and Action Plan* of the Institute.

SMO-PM renewed/revised IGES *Guidelines for Teleworking* to further enhance both productivity and work-life balance, based on the experience gained during the COVID-19 pandemic. Childcare support certification (so-called *Kurumin*) and women's participation promotion certification (so-called *L-boshi*) were successfully maintained.[8]

Table 11: IGES Full-time Staff Members [1]

(Positions)

Categories		FY2021 (2022.6.30)	FY2022 (2023.6.30)	Ratio of Female staff
Professional Staff		158	161	52%
	Principal staff	29	29	24%
	Senior staff	59	58	50%
	Associate staff	41	44	61%
	Administration Specialist	21	23	87%
	Dispatched from other organisations	8	7	0%
Assistant Staff [1]		5	6	80%
Total: IGES Staff members (Full-time)		163	167	52%
Number of Administrative Staff [2] (Ratio of administrative staff in total staff)		13.8 (8.5%)	14.8 (8.8%)	68%

[1]: Temporary staff are excluded
[2]: Number of staff members at SMO Planning and Management after reflecting the actual contribution caused by concurrent appointment, etc.

The results of key performance indicators set for governance for ISRP8 are summarised in Table 12.

[8] *Kurumin* and *L-boshi* are certified by Labour Bureau of the Ministry of Health, Labour and Welfare in Japan.

2.3. Internal Management

PM continued to improve efficiency for internal administrative procedures. For accounting, an additional function (digital accounting slips) was added to the cloud-based system introduced in the previous year. For HR management, a cloud-based system was also introduced that has various HR related procedures including the year-end deduction adjustment, signing of employment contract, etc. SMO Technology Solutions Services (SMO-TS) team continued its support to maintain and upgrade IGES's website and its integrated databases (publication, projects, mission requests, various request-approval systems, etc.) and various communication tools. These cloud-based systems helped to increase the efficiency of operations and internal procedures regardless of the staff's location, and also to eliminate paper-based documentation and record keeping. SMO-TS also provided technical support to host various online events and video message recording in collaboration with KC and IGES research units.

IGES Facility Management team maintained and upgraded IT systems equipment, including staff personal computers and equipment in the conference room, and renewed outsourcing contracts (HQ cafeteria operation and HQ building and facility management) by bidding process. IGES Eco-Action 21 committee passed the mid-year audit of the environment management certificate (*Eco-Action 21* programme administered under MOEJ). The committee continued promoting and monitoring the reduction of CO2 emissions from energy use at IGES offices and from overseas mission travels (two major sources of emissions by IGES) (see notes under Table 12), including RE-derived electricity procurement through the group auction programme provided by Kanagawa Prefecture in FY2022.

In FY2022, PM conducted ISRP8 Mid-phase Review Meeting on 19-21 June 2023, which was attended by IGES management and all staff members, with the aim of a broader forward-looking discussion towards the next research phase (ISRP9) and beyond. PM continued strengthening institutional governance by updating/revising internal procedures, making them more transparent and in line with international standards and practices.

The key achievements in HR and internal management in FY2022 and the results of key performance indicators set for governance for ISRP8 are summarised in Figure 2 and Table 12, respectively.

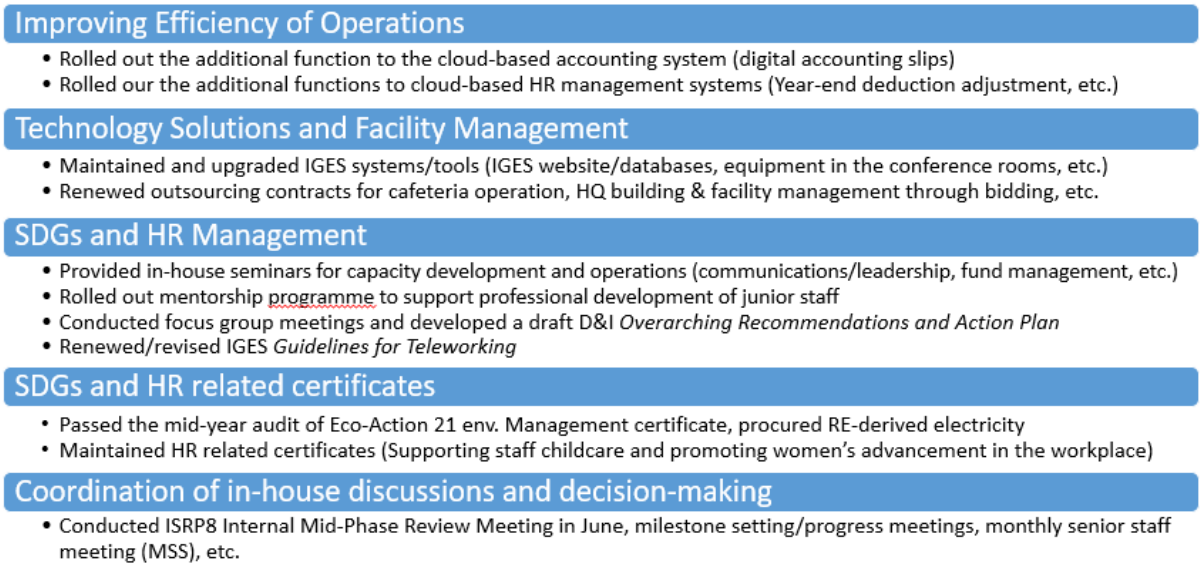

Figure 2: Key Achievements in HR and Internal Management in FY2022

Table 12. ISRP8 Key Performance Indicators for Governance

Indicator with Annual Target	Baseline (ISRP7)	Target for ISRP8	2021 Results	2022 Results	2023 Results	2024 Results
Core fund contribution from Ministry of the Environment	JPY 500 million	JPY 500 million	JPY 500 million	JPY 500 million		
Support from the three local governments (subsidies, etc.) [1]	Around JPY 135 million	Around JPY 135 million	JPY132 million	JPY132 million		
Volume of external funds (other than contribution and subsidies)	USD 20-25 million	USD 22-27 million	JPY1,856 million	JPY2,024 million		
Ratio of international external funds [2]	over 25%	as much as 40%	26%	27%		
Ratio of project financial value-added (FVA) (proposed budget-based) [3]	52% (FY2020 target)	55%	64%	63%		
Ratio of general administrative cost in the total expenditure [4]	9% (FY2020 target)	9%	10.1%	8.8%		
Ratio of administrative staff in total (Number)	11% (FY2020)	9%	8.5%	8.8%		
Ratio of taken annual leave	57% (FY2019)	80%	59%	58%		
Indicator without Target	Baseline (ISRP7)	Indicative Reference	2021 Results	2022 Results	2023 Results	2024 Results
Number of full time staff members	156 (FY2020)	160+ (plan) [5]	163	167		
Ratio of Tenure/Tenure-track staff in total	14% (FY2020)	50% [5]	48%	51%		
Ratio of female staff in management positions (Principal staff)	19% (FY2020)	30% [5]	24%	24%		
Rate of teleworking [6]	Standard frequency at 40% (FY2020)	Standard frequency at 40% (FY2021-22), approx. 50% (FY2023-)	44.9%	39.3%		
Overtime [7]	10.5 hrs (Monthly overtime hours per person in FY2019)	Continue to be reduced	8.4 hrs	8.4 hrs		
CO2 emissions reduction from energy use and overseas missions [8]	450.7 t-CO2 (Energy use, FY2020)	n/a	340.6 t-CO2 (Energy use)	292.0 t-CO2 (Energy use)		
Number of web-based systems introduced, replacing paper-based systems	-	No further paper-based systems [9]	4	4		
Staff Satisfaction Survey [10]	Conducted in 2019	To be conducted in 2023 (tbc)				

Note for indicators:

[1] Excludes support for HQ office rent from Kanagawa Prefecture and for KRC office rent from Hyogo Prefecture.

[2] The definition is changed from the 8th Phase, and funds provided by institutions located overseas and funds from international organisations are considered as “international external funds”.

[3] Project FVA is calculated as: revenue less project operating expenditures such as outsourcing and travel costs. This is the amount available for personnel and other expenditures necessary for IGES strategic research and operations.

[4] Excludes administrative costs for APN, JISE and TSU.

[5] Largely depends on the recruitment cycle (every four years in general) or promotion during the research phase (unscheduled). The target figure is set for ISRP8.

[6] The standard level of teleworking (non COVID-19) at the individual level was set at 40% in 2020 when IGES introduced teleworking. During FY2022, in response to the COVID-19 pandemic, the level was set at approx. 50%, and staff members with special needs (family or health needs) were allowed higher frequencies. The results (the average frequency of teleworking by all staff members) in FY2021 and FY2022 were 44.9% and 39.3%, respectively, based on attendance records of March-May 2022 and March-May 2023, respectively. In accordance with the change of the legal status of COVID-19 that had been lowered to "Class 5" on 8 May 2023, IGES reviewed and renewed its guidelines for teleworking. The revised guidelines went into effect in July 2023 in which the standard level of teleworking is set at approx. 50% to continue improving staff members’ life-work balance and their work efficiency.

[7] Overtime by staff members who are not under the discretionary labour system was applied. A flexible work hours system was introduced for staff members who are not under the discretionary labour system in FY2021.

[8] The volume of CO2 emissions from the use of office energy and flights for overseas missions is monitored and reported to the environmental management certification audit (*EcoAction 21*). COVID-19 pandemic made large impacts on CO2 emissions. In FY2022 the CO2 emissions from energy use at IGES offices (both electricity and gas at HQ, KRC, KUC, TSF, APN and JISE) were estimated at a total of 292.0t-CO2, reduced from the previous year by about 14%. Reduction came from continuous efforts to reduce energy use at offices and procurement of renewable energy (RE) derived electricity at the headquarters. After the electricity provider’s sudden withdrawal from the market from July 2022, IGES managed to procure RE electricity through the group auction programme provided by Kanagawa Prefecture, and the service will start in August 2023. The CO2 emissions from overseas travel (use of airplane, the other major source of emissions at IGES) was estimated at 407.7 t-CO2 (from 232 overseas missions), significantly increased from the previous year due to the relaxation of travel restrictions.

[9] Except for systems that are paper-based due to regulatory requirements.

In FY2022, new functions were added to cloud-based systems introduced for accounting and HR management. By the former, paper accounting slips were replaced by digital forms and became paperless. For the latter the year-end deduction adjustment for staff members and staff’s personal information change requests became online. In addition, applications for IGES Strategic Operation Fund (SOF) and hosting interns/exchange program participants also became online.

[10] Administered by Japan Productivity Center (JPC).

3. Summary of Achievement in FY2022

The overall achievement (self-evaluation) for FY2022 is considered to be successful. In terms of impact generation, a total of 34 impact cases including contributions to the G7 process in 2023 under the Japanese Presidency, have been reported, meeting the target of 30. Out of the 34 cases, there are several cases that are considered of particular significance, with nine reaching the level that IGES's actions were accepted and seven that brought about policy changes. Regarding outputs, the three targets (the number of Strategic Outputs, Academic Outputs and academic publications by IGES staff as first author) were met. IGES continued to publish a relatively high number of peer-reviewed journal articles, including some in journals with impact factors above 10. IGES has been strengthening strategic communications to deliver key messages and recommendations through various communication channels, and in FY2022 media coverage significantly increased. On the other hand, the number of website views dipped for the first time in several years. This trend is observed in almost all regions outside the US and may be affected by other factors, such as the war in Ukraine that may have shifted international interest from environmental issues to security issues.

As for governance, the necessary FVA were secured to support planned activities in the midst of a recovery from the impacts of the COVID-19 pandemic from previous years. The ratio of international funding to total funds in FY2022 was 27%, maintaining the same level of the previous year (26%). As a result of the continued efforts by staff members, IGES will launch several new projects funded by existing and new partner institutes such as MOEJ, Japan-ASEAN Integration Fund (JAIF), Green Climate Fund (GCF) and Wellcome Trust from FY2023. While it is generally perceived that economic activity is recovering, the degree of recovery and its implications on IGES business compared with pre-COVID-19 level is still not fully clear. At the same time, it is vital to adapt to various changing situations including geopolitical landscape and the interests of funding agencies in the region, and therefore, it seems appropriate and necessary to consider a gradual shift from an environmental think-tank to a sustainability think-tank to better respond to regional needs and to contribute to achieving sustainability in a more integrated manner. This also suggests that a more qualitative assessment may be useful for diversification of funding sources from overseas.

ANNEX 1. SUMMARY OF KEY ACHIEVEMENTS BY UNIT

1. Integrated Sustainability Centre and Four Issue Areas

1.1. Integrated Sustainability Centre (ISC)

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, 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 (APSFD) 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."

(1) Focus for Impact Generation in ISRP8 by Unit

ISC will work with stakeholders in Asia and the Pacific to accelerate progress on the SDGs and formulate an ambitious post-2030 agenda. ISC will work toward this objective by strengthening the science-policy-society interface. ISC's research and programming will combine science-based tools and methods (interlinkages analysis, scenario analysis and machine learning); socially-response governance models and strategies (polycentrism and metagovernance); and cutting-edge policy frameworks and solutions (e.g. Regional-CES, Triple-R framework, green recovery, just transition, co-benefits integrated NDC/VNR/National Biodiversity Strategies and Action Plans (NBSAPs), integrated local climate action/VLR/Local Biodiversity Strategies and Action Plans (LBSAPs)). This unique combination of tools and perspectives will be employed in concrete case studies and shared during key policymaking processes Asia Pacific Forum for Sustainable Development (APFSD)/ HLPF/UN General Assembly (UNGA), UN Environment Assembly (UNEA), and G7/G20), solidifying our position as a change agent on sustainability in Asia-Pacific and beyond.

(2) Major activities in FY2022

(a) The Governance, Inclusivity and Sustainability (ISC-GIS) team

ISC-GIS team promoted governance that accelerates progress and raises ambitions on the Sustainable Development Goals (SDGs). Because of the inherently interlinked nature of the SDGs, much of the work of the GIS team concentrated on governance that enable integration across different sectors or includes various segments of society in decision-making. Some of ISC's research explored how this can be achieved at the national level across Asia, while another stream looked at how Japanese businesses are making connections to SDGs in their planning. A third area of work focused on governance that can promote the co-benefits between climate change and other development priorities. A final set of activities examined forms of governance needed for a just transition in Asia.

Helping Japanese Business on the Sustainable Development Goals (SDGs)

In 2022, ISC promoted the integration of the SDGs into 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 SDG 5 (gender equality), 8 (work and human rights), 13 (climate change) and 16 (anti-corruption), and 12 (sustainable consumption and production). ISC is also leading the way in showing companies how work on emerging issues, such as supply chains and human rights. The SDGs GCNJ report has been cited in key policy documents such as Japan's VNR.

Promoting Just and Inclusive Transitions in Asia

In 2022, ISC published a paper and held a special session at ISAP on just transitions in Asia that explored the applicability of just transitions in Asia. The paper examines a diverse range of solutions centred on principles of inclusive, just and resilient societies in Asia. This work will be featured in new special issue of Sustainability Science in 2023.

Strengthening the Voluntary National Reviews (VNRs) and the Environmental Dimensions of the SDGs

In 2022, ISC published a report with United Nations Environment Programme (UNEP) that evaluated 50 Voluntary National Reviews (VNRs) produced by countries in the Asia-Pacific region between 2016 and 2021. The report includes recommendations on how VNRs can strengthen the implementation of the environmental dimensions of the SDGs, and is opening the door to work on emerging themes such as spillovers.

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

In 2021, ISC was 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 and other regions in governing the SDGs. The project will focus on establishing an effective methodology for the follow-up and review process 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 SDG guidelines, upcoming VNR and other SDG plans. This work is also creating opportunities to recommend reforms to countries outside Japan such as Denmark.

Advancing Co-benefits in Southeast Asia and Japan

In 2022, ISC worked with the International Institute for Applied Systems Analysis (IIASA), the Asian Development Bank, Clean Air Asia, Stockholm Environment Institute, the National Institute for Environmental Studies, and United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS) to promote policies and projects with co-benefits. Those activities are contributing to the development of New Haze-free Roadmap in Southeast Asia that can save at least 10,000 lives per year. ISC is also providing substantive inputs into a co-benefits action plan in Thailand and Philippines; and a new project funded by GIZ on a regional approach to co-benefits in Southeast Asia. In addition, ISC will begin working with three Japanese cities—Kawasaki, Niigata and Hachinohe—to incorporate health co-benefits in climate planning.

Contribution to the IPCC

ISC-GIS is contributing to discussions over the outline of Seventh Assessment Report of the IPCC Working Group Three—with an emphasis on synergies between climate change and sustainable development.

(b) The Quantitative Analysis (ISC-QA) team

ISC-QA has been at the centre of efforts to strengthen the science-policy interface in ways that contribute to a sustainable future. It uses strategic research, quantitative policy assessments, and practical policy recommendations to support sustainable planning in Asia-Pacific and beyond. Much of its work has focused on using IGES's SDG Interlinkages Tool to enhance integrated planning by illustrating the synergies/trade-offs among the SDGs and their targets. Additionally, ISC-QA uses scenario analysis (particularly Shared Socioeconomic Pathways (SSPs)) to help cities make urban planning sustainable.

Integrated Policymaking Using IGES' SDG Interlinkages Methodology

ISC-QA developed the SDG Interlinkages Tool (https://sdginterlinkages.iges.jp/visualisationtool.html) to facilitate integrated policymaking by identifying, quantifying and visualising SDG interlinkages. Covering 27 countries in Asia and Africa the tool has been accessed from more than 190 countries and has been featured in voluntary national reviews (e.g. Indonesia and Ghana). With funding from Google's AI for Social Good Program, a novel methodology was developed to automate systematic reviews of causal links among the SDGs by using artificial intelligence-based natural language processing- techniques. The methodology was applied to co-generate knowledge on climate–SDG interlinkages and support stakeholder engagement in Lampung, Indonesia. The research results have also contributed to a project on decarbonisation in developing countries.

Capacity Building Activities Using the IGES' SDG Interlinkages Methodology

ISC-QA contributed to several capacity building activities using the SDG Interlinkages Tool and macroeconomic modelling techniques. These include JICA's training programme for long-term strategies under the Paris Agreement, a JSPS seminar on understanding and addressing systemic risks from COVID-19, and the UN Partnership for Action on Green Economy (PAGE) training programme on a green and fair economic transformation.

Contribution to the Group of Seven (G7)

ISC-QA led the development of a T7 Policy Brief on putting societal well-being at the centre of G7 climate strategies. The brief was one of sixteen T7 Policy Briefs included in the Annex of the Think7 Japan Communiqué, and shared with Japan's Prime Minister Kishida to support discussions at the G7 Summit.

Long-term Scenario Analysis for Cities

ISC-QA developed socioeconomic pathways for cities by downscaling the global shared socioeconomic pathways (SSPs). One application of this approach involved efforts to support a climate action plan for Da Nang City with support from the MOEJ. The development process engaged local stakeholders in city departments. The result was the second edition of the Da Nang City Climate Action Plan, covering buildings, transport, energy, food and agriculture, water, waste management, and SDGs interactions. Another application of the SSPs involved working with Bhutan to analyse urban-rural elements in scenarios and estimate energy demand/supply capacity up to 2050.

Contributions to Other IGES Areas

ISC-QA contributed to several projects in other IGES areas. These include co-authoring a T7 Policy Brief on critical minerals and ADBI's publications on the role of Japan in developing a hydrogen society in Asia, co-organising a webinar on hydrogen and reviewing Bangladesh's draft Integrated Energy and Power Master Plan.

(c) The Circulating and Ecological Sphere (ISC-CES) team

ISC-CES team led projects and programmes for advancing an integrated approach to the Circulating and Ecological Sphere approach, Water-Energy-Food Nexus approach and Integrated Environment and Disaster Management (CES concept, WEF nexus) as practical approaches for localisation of global and national goals through collaborative research, knowledge generation, multi-stakeholder engagement and capacity development.

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

ISC collaborated with START International to establish a regional network to promote the CES approach in the Asia and Pacific region in October. In collaboration with CES-Asia consortium partners, ISC implemented projects in a number of cities, including Hachinohe in Japan, and Nagpur and Haridwar in

India, to facilitate the co-development of the CES Action Programme. Research results have been published in five journals and a Springer CES book project was launched. ISC-CES team further collaborated with IGES Kansai Research Centre (KRC) and Asia Pacific Network for Global Change Research (APN) on national workshops on the application of the CES approach in Indonesia, Thailand and the Philippines.

Contribution to the High-Level Policy Processes

ISC-CES promoted the CES concept through at important policy processes such as the G20, Global Climate and SDGs Synergy Conference, HLPF. ISC-CES also published a discussion note on the CES concept to facilitate discussion at the 3rd Global Climate and SDGs Synergy Conference.

Promoting the Water-Energy-Food Nexus

ISC-CES has been implementing international a collaborative project and publishing articles on this theme with partner institutes in Japan, India and Bangladesh.

(d) The Policy and Integration (ISC-PI) team

The ISC-PI team supported the development of Sado City's "Nature Positive Declaration" together with BDF. This declaration was shared at CBD/COP15 in Montreal by an officer from Sado City. ISC-PI also worked with Tokyo Metropolitan Government (TMG), and Saitama City to support Kuala Lumpur (KL) City in developing a "Carbon Neutral District" in Wangasa Maju area (northeast KL).

Support for "Decarbonization Leading Areas (脱炭素先行地域)" in Japan and Kuala Lumpur (KL)

ISC-PI worked together with CTY, Tokyo Metropolitan Government (TMG), Saitama City (since April 2022), University Technology Malaysia (UTM), Sustainable Energy Development Authority (SEDA) Malaysia to support Kuala Lumpur in achieving zero carbon by 2050 and developing "Decarbonization Leading Areas" in "Wangsa Maju." An ISC researcher continues to serve as acting chair of the MOEJ's "Evaluation Committee (評価委員会)" on "Decarbonization Leading Areas" in Japan.

The "3rd UN Climate and SDGs Synergy Conference" in Tokyo Japan

ISC-PI worked with ISC-GIS and other units to successfully compile the conference background note and 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.

(3) Selected publications

- Peer Reviewed Article "Synergies and Trade-offs between Sustainable Development Goals and Targets: Innovative Approaches and New Perspectives" (Sustainability Science)
- Policy Brief "Putting Societal Well-Being at the Core of G7 Climate Strategies: Entry Points and Enabling Reforms"
- Conference proceedings "Using Natural Language Processing for Automating the Identification of Climate Action Interlinkages within the Sustainable Development Goals" (Association for the Advancement of Artificial Intelligence's Proceedings of the 2022 Fall Symposium).
- 2nd Edition of Da Nang City Climate Action Plan as submission to the policy process in Da Nang City.

- Book“知りたい！カーボンニュートラル　脱炭素社会のためにできること(全4巻)”（あかね書房）
- Book”どれだけ出てるの？二酸化炭素ずかん”（汐文社）
- Intervention on Agenda Item 3 “Towards the 2023 Sustainable Development Goals Summit, Ministerial Segment” of the 10th APFSD on 27th March 2023 by IGES
- Peer reviewed Article “Assessment of Hydrological Response with an Integrated Approach of Climate, Land, and Water for Sustainable Water Resources in the Khari River Basin, India” (Anthropocene)
- Discussion Brief “Circulating and Ecological Sphere (CES) Concept for Integrated Actions towards Localization of Climate and Sustainable Development Actions” (The 3rd Global Climate and SDGs Synergy Conference)
- Peer reviewed Article “Towards Circulating and Ecological Sphere in Urban Areas: An Indicator-Based Framework for Food-Energy-Water Security Assessment in Nagpur, India” (Sustainability)
- Policy Report “SDGs Progress Report 2022: Survey Results on the Efforts of GCNJ Companies and Organisations”
- Peer reviewed Article “The Relationship between Female and Younger Legislative Representation and Performance on the Sustainable Development Goals (SDGs)”（Environmental Research Letters）
- Research Report “Strengthening the Environmental Dimension of the Voluntary National Reviews in Asia-Pacific: Lessons Learned and Ways Forward”

1.2. Climate and Energy (CE)

With particular focus on the Asia-Pacific region, the Climate and Energy team (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.

(1) Focus for Impact Generation in ISRP8 by Unit

CE will strive to generate impacts on (1) implementation of the Paris Agreement, in particular, the implementation, evaluation and updating of NDCs, the submission of biennial transparency report under the Transparency Framework, and contribution to Global Stocktake; (2) formulation of long-term zero emissions strategies and the implementation of short-term measures consistent with the long-term goals in Japan, and other Asian countries, including the practices of state and non-state actors toward the smooth and just transition, and (3) implementation of carbon pricing, JCM and other offset mechanisms to achieve net zero emissions.

(2) Major activities in FY2022

Operationalisation of the Paris Agreement

CE contributed to the adoption of the decision on Article 6 rulebook, as well as negotiations for and implementation of the Global Stocktake (GST) under the Paris Agreement by participating in COP27 as members of Japanese delegation. IGES started acting as the secretariat of the ‘Paris Agreement Article 6 Implementation Partnership Centre,’ which promotes the activities of the ‘Paris Agreement Article 6 Implementation Partnership’, launched at COP27 to support capacity building with regard to Article 6 of the Paris Agreement. 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 Ministry of the Environment, Japan (MOEJ). Furthermore, CE cooperated with the Japan Aerospace Exploration Agency (JAXA) to promote inputs from the Japanese satellite community into the GST. CE also played 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.

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 eight 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 seventh 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 continued to support an initiative of Asia Society Policy Institute for expanding emissions trading schemes in Asia. The latest movement on carbon pricing for the transition toward net-zero in Asia was summarised and disseminated, 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 conducted research on the risk of coal-fired power plants, publicly supported by Japan, to be stranded; a comprehensive study on policy practices and cooperation opportunities in oil and gas methane mitigation in Japan and ASEAN; cross-divisional joint research to develop a book on net-zero in Asia; research on technology co-innovation, to identify and propose alternative ways for strengthening technology collaboration among countries; research on critical minerals and the impact of supply and environmental spillover challenges on net-zero goals and, research on hydrogen economy in Asia and opportunities and challenges. Domestically, CE further carried out the simulation analysis of power grid system to achieve a zero-emission power system in Japan. 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.

To communicate national and international trends toward decarbonisation, CE launched the IGES Climate Change Webinar Series in April 2021 which has been conducted 49 times through June 2023, with a total of more than 12,000 people watching live.

(3) Selected publications

Peer-reviewed papers

- National GHG inventory capacity in developing countries – a global assessment of progress. Climate Policy. DOI:10.1080/14693062.2023.2167802
- 「電力システムの早期の脱炭素化に向けたトランジション・ファイナンスの現状と政策的課題」『地球環境』Vol.27 No.2.

Policy briefs/reports/discussion papers/working papers

- "実潮流に基づく電力系統運用シミュレーションを用いた日本の再生可能エネルギー実質 100%シナリオにおける電力需給構造分析" IGES Working Paper
- *"Securing Critical Minerals Supply Chains for the Clean Energy Transition*," T20 Policy Brief, India.
- "Critical Minerals for Net-Zero Transition: How the G7 Can Address Supply Chain Challenges and Socioenvironmental Spillovers", Policy Brief, T7, Japan.
- "Sustainable and Inclusive Solutions to Air Pollution and Climate Change in Southeast Asia: Participatory Governance, Social Co-benefits and Co-Innovation," Policy Brief, SEI, Stockholm.
- "Half of developing countries still struggle to report greenhouse gas emissions," Commentary, Carbon Brief.
- "M&E Frameworks for Capacity Building in Climate Transparency: A Comparative Review of Two Quantitative Approaches," Working Paper, CEEW.

Submission to policy processes

- Key priorities of non-state actors (NSAs) in Southeast Asia for the Global Stocktake (GST). Submission to the GST.
- IGES's submission to the GST.

Briefing Note

- 「パリ協定・第 1 回グローバル・ストックテイク（GST）： COP27 における第 2 回技術的対話と交渉会合の結果」

Data/Tool

- Data/Tool "IGES Biennial Update Report (BUR) Database"

1.3. Sustainable Consumption and Production (SCP)

IGES conducts policy analysis from the perspective of sustainable consumption and production (SCP) 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.

(1) Focus for Impact Generation in ISRP8 by Unit

SCP will boost IGES's standing as a vital and indispensable policy think-tank and development partner for ASEAN and ASEAN member states for circular economy, sustainable lifestyles and marine plastic issues. We want to be associated as having a publicly-recognised functional role in policy harmonisation and regional integration of Asia and the Pacific region. CCET will be a strategic partner of UNEP and other UN agencies operating in the Asia-Pacific region, as an instrumental arm for capacity development of national and local governments in emerging countries.

(2) Major activities in FY2022

Sustainable lifestyles

Under the 1.5°C Lifestyle initiative, IGES worked with the citizens of three cities in Japan to develop visions for decarbonised lifestyles and societies. In Odate city, the project incorporated the citizens' wisdoms into the process of formulating the local government's action plan.

IGES contributed to the final year of the EU SWITCH-Asia programme Phase 2. It finalised the policy research in the textile sector in Cambodia and policy guidance for the seafood sector in Viet Nam. Capacity-building programmes were also conducted in both countries for government and industry stakeholders using the research findings.

IGES initiated two new projects on sustainable living in FY2022. One of them aims to apply behavioural science to the reduction of single-use plastic products. IGES selected four project partners from the Philippines, Viet Nam, Thailand and Indonesia to implement projects to reduce the use and disposal of plastic products. Another project is action research in Japan, aiming to develop local visions for sustainable food contributing to nature-positive and net-zero carbon.

Mainstreaming Circular Economy

IGES continued to be involved in key international processes on circular economy and resource efficiency, including G7 Ministers' Meeting on Climate, Energy and the Environment, G20 Resource Efficiency Dialogue, International Resource Panel (IRP), OECD, and Global Alliance on CE and RE (GACERE).

IGES contributed to drafting of G7's Circular Economy and Resource Efficiency Principles (CEREP). SCP continued to act as the leading institute to synthesise country-relevant information for G20 MPL report & G20 RE dialogue portal site development. It contributed to developing the T20 Policy Brief on Circular Economy and Global Supply Chain, and the OECD's review of the United States' country Environmental Performance.

IGES is involved in several governmental committees in Japan to discuss policy measures, Circular Economy indicators, and industrial standards on circular economy. IGES continued to serve as the secretariat of Japan Partnership for Circular Economy (J4CE) and organised two public-private dialogue to increase motivation in the private sector to take up circular business models. J4CE also updated its publication on case studies of circular business models.

Marine Plastics and Circular Economy

IGES continued its support to ASEAN and ASEAN member states' policy initiatives. IGES was engaged in National Plastic Action Plan Development in Myanmar and Cambodia and a total of six pilot cities were chosen for capacity development in evidence-based policy making for plastic pollution prevention.

As a member of the Technical Working Group of the ERIA's Regional Knowledge Centre on Marine Plastic Debris (RKC-MPD), IGES published a report on "Building Data on the Plastic Value Chains in ASEAN Member States." It also co-organised a webinar on Extended Producer Responsibility (EPR). IGES agreed with ERIA and OECD to develop the Asia-version of Global Plastic Outlook as a flagship publication on policy evaluation.

IGES finalised a research in Viet Nam, Ghana, and Indonesia, on how multi-stakeholder dialogue and process could facilitate actions against marine plastic litter and Circular Economy policy formulation in the context of developing countries.

IGES also started to engage in International Negotiation Committee for Legally-binding Instruments for Plastic Pollution (INC) and organised a reporting session of INC1 at ISAP2022. SCP also contributed to Kanagawa Plastic Action Plan development.

Centre Collaborating with UNEP on Environmental Technologies (CCET)

IGES Centre Collaborating with UNEP on Environmental Technologies (CCET) has continued in conducting evidence-based policy research, providing technical support, technical and capacity building to national and local governments, particularly Sri Lanka, Indonesia (Padang City), Myanmar and Cambodia to formulate national and sub-national action plans for managing municipal waste, including plastic waste and marine litter, healthcare and COVID-19 waste.

CCET also contributed to several globally-recognised knowledge products including Global Waste Management Outlook 2 by UNEP and ISWA, Assessment Report of Climate Impact of Black Carbon Emissions from Open Burning of Solid Waste, Training Needs Assessment Reports Towards Micro-Plastic Monitoring in Viet Nam and Sri Lanka. CCET conducted a series of training and capacity building and engaged in global policy dialogues such as Global Methane and Short-lived Climate Pollutants (SLCPs) Dialogue by CCAC and IPCC, global waste and chemicals pollution dialogues by IETC, Basel Rotterdam and Stockholm Convention Secretariat, and SAICM.

Through capacity development and technical support activities on waste management and plastic pollution prevention, CCET strengthened partnership with JICA, ADB and the World Bank enabling financing to implement the national and city waste management plans and innovative actions.

(3) Selected publications

Peer-reviewed Article

- "Making sense of (un)sustainable food: creation of sharable narratives in citizen-participating farming" (Sustainability Science)
- "Assessing economy-wide eco-efficiency of materials produced in Japan" (Resources, Conservation, and Recycling)
- "サステイナビリティ・サイエンスの展開−人新世の時代を見据えて−" (環境科学会誌)
- "Low-Carbon Lifestyles beyond Decarbonisation: Toward A More Creative Use of the Carbon Footprinting Method" (Sustainability)
- "Exploring the Opportunities and Challenges of ICT-Mediated Food Sharing in Japan" (Sustainability)
- "Ambitious EV policy expedites the e-waste and socio-environmental impacts in India" (Resources, Conservation, and Recycling)

Policy report

- "Building Data on the Plastics Value Chain in ASEAN Member States"
- "Improving Sustainable Consumption and Production in the Garment Sector in Cambodia"

Research Report

- "Guideline for Sustainable Consumption and Production in the Seafood Sector in Vietnam"

Technical Report

- "Guidelines for resource efficiency and cleaner production in Vietnam's Pangasius processing sector"

Policy Brief/Issue Brief

- "Embedding the circular economy in global value chains: strategies and frameworks for a just and effective transition"

＜CCET＞

Peer-reviewed Article

- "Life Cycle Assessment of Selected Single-Use Plastic Products towards Evidence-Based Policy Recommendations in Sri Lanka" (Sustainablity)
- "Analysis of Meandering River Morphodynamics Using Satellite Remote Sensing Data—An Application in the Lower Deduru Oya (River), Sri Lanka" (Land)
- "Current State of Microplastic Pollution Research Data: Trends in Availability and Sources of Open Data" (Frontiers in Environmental Science)

Book Chapter

- "Life-cycle assessment of membrane-based desalination technologies and alternatives" (Membrane Technology for Sustainable Water and Energy Management)
- "COVID-19 and Healthcare Waste Management (HCWM) in Myanmar: Perspectives from the Triple R (Response, Recovery, and Redesign)" (Health Care Waste Management and COVID 19 Pandemic: Policy, Implementation Status and Vaccine Management)
- "Sustainable Water Consumption in Building Industry: A Review Focusing on Building Water Footprint" (Lecture Note in Civil Engineering: 12th ICSECM)
- "Microplastics in wastewater treatment plants" (Advances in Biological Wastewater Treatment Systems)

Policy Report

- "Assessment of Climate Impact of Black Carbon Emissions from Open Burning of Solid Waste in Asian Cities"

Research Report

- "Study on Integrated Solid Waste Management: Padang City, Indonesia"

Briefing Note

- "Whole school approach to learn and educate plastic pollution in Galle City, Sri Lanka"
- "Partnership to reduce plastic use in the tourism sector in Galle City, Sri Lanka"

Discussion Paper

- Discussion Paper "Training Needs Assessment Report (TNA): Towards Microplastic Monitoring and Evidence-Based Policy Measures in Sri Lanka"

1.4. Biodiversity and Forests (BDF)

Biodiversity and Forests conducts team conducts problem-solving research and implementation in the Asia-Pacific region. BDF also aligns with and supports global biodiversity processes such as the Convention on Biological Diversity (CBD), the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), and the New York Declaration on Forests.

(1) Focus for Impact Generation in ISRP8 by Unit

BDF will formalise our contribution to international policy processes, including those of the CBD and the IPBES, through their official meetings and assessments. The post-2020 global biodiversity framework[9] and New York Declaration on Forests will be key processes with which to align. BDF will also contribute to promoting sustainable forest management with guiding key legislation at the national level, as well as frameworks for assessing biodiversity and implementing subsequent measures. We will contribute to an improved understanding of how to promote sustainable socio-ecological production landscapes and

[9] In December 2022, a new global biodiversity framework, "the Kunming-Montreal Biodiversity Framework (GBF)", was adopted.

seascapes (SEPLS), and to an understanding of how communities can be assisted in responding to degradation of key habitats.

(2) Major activities in FY2022

Responsible Timber Trading (Revision of the Clean Wood Act)

IGES has been contributing to the operation and revision of Japan's Clean Wood Act (Law Concerning the Promotion of the Distribution and Use of Legally Logged Timber, etc.). The Clean Wood Act was revised in May 2023 based on discussions at the "Study Group on the Distribution and Use of Legally Harvested Timber, etc." held in 2021, and IGES was invited to the Study Group twice to make recommendations. The "Review of the Clean Wood Act in Five Years (Summary)," which was based on the discussions in the study group, indicated the need for a guide to help businesses confirm legality in accordance with the Clean Wood Act. IGES was commissioned to prepare "Due Diligence Guidance for the Clean Wood Act," a list of risk assessment-related information websites, and a hypothetical case study of legality verification. These reports are posted on the "Clean Wood Navi" website operated by the Forestry Agency. This year, we also plan to support the creation of a guide for industry associations using this as a model.

Responsible Timber Trading (timber producing countries)

IGES conducted country studies on legal frameworks for timber production and trade in Austria and Canada as a project commissioned by the Forestry Agency. The country reports will be uploaded on the Clean Wood Navi website of the Forestry Agency to assist Japanese businesses in checking the legality of timber products. In addition, with funding from the ITTO, IGES conducted a project to analyse legal frameworks, timber supply chains, and practices of business entities in China and Viet Nam to promote legal and sustainable timber production and trade. The project produced a series of technical reports, two research papers for the ITTO's journal, and a seminar was held to present the findings. In addition, the project team was invited to give presentations in China and Viet Nam to share the survey results.

Through this project implementation, mutual understanding with ITTO was deepened. IGES concluded an MOU with ITTO to strengthen cooperation on the conservation and promotion of sustainable use of tropical forest resources, and has begun regular meetings with ITTO to explore further collaboration.

Supply chain of forest risk commodities

IGES conducted a study and analysis of supply chain structure and sustainability issues in palm oil production in Indonesia and coffee production in Viet Nam. Preliminary results of the study were compiled and published as an article in a food industry journal. The project has attracted praise, and requests for collaboration from another potential future partner, Climate & Company, a Germany-based outfit that works closely with the European Commission and is conducting supply chain studies in mostly South America.

Contribution to the international process on forests

The Forest Declaration Assessment Partners, of which IGES is a member, has published the 2022 Assessment Report, which reports on progress toward meeting global forestry goals. IGES also made a Japanese summary of the Assessment Report available to enhance understanding of the current status of the global deforestation problem in Japan.

JCM REDD+[10]

IGES supported MOEJ by providing advice for a JCM REDD+ project. IGES was also invited by the FA to be a committee member to discuss JCM guidelines for afforestation and reforestation and provided our knowledge

Contribution to International Biodiversity Processes

IGES staff continued working as experts on the IPBES nexus assessment and transformative change assessment. IGES also contributed to the external review of peer-reviewed documents for IPBES, TNFD and CBD. Some of these reviews provided the opportunity to suggest relevant IGES publications, which were subsequently cited in the reports. IGES also contributed to disseminating information on the IPBES and CBD processes and outcomes to Japanese audiences, including through the publication of a Japanese translations of the summary for policymakers of an IPBES thematic assessment report on the sustainable use of wild species, as well as of a methodological assessment on values, and through an online public symposium on biodiversity. Finally, IGES staff have authored the biodiversity chapter to the 6th ASEAN State of Environment Report and produced a set of about 100 UNEP factsheets covering 20 Asian countries and seven multilateral environmental agreements.

Advisory function to IPBES TSU

In FY2022 IGES completed its 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

An IGES staff member continued to work in Mauritius as part of a JICA team responding to a heavy oil spill from the bulk carrier vessel, MV Wakashio. Based on the data collection survey conducted at that time, the team launched the JICA Technical Cooperation Project in January 2022, to support Mauritius in building an integrated coastal ecosystem management system to contribute to restoring the ecosystem in a resilient manner. IGES formerly evaluated and visualised the area's coastal ecosystem services to improve conservation and monitoring plans and practices. More recent work intends to improve sustainability in the tourism sector by establishing a model village as a sustainable destination and introducing sustainable tours (e.g. coral plantation diving tours and mangrove kayaking). By doing so, it aims to prevent some "ecotourism" businesses from harming the coastal ecosystems, and attract sustainability-minded tourists. During FY2022, the IGES staff visited Mauritius three times and prepared the Ecotourism Action Plan to mobilise the necessary resources from the Mauritius Government and encourage them to implement required activities from 2023 onward.

Mainstreaming Biodiversity Conservation and Sustainable Management in SEPLS

IGES and partners supported five 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 59. A new Satoyama Development Mechanism (SDM) website was developed to facilitate interactive information exchange between the project implementers, the SDM Secretariat and a

[10] Reduction of Emission from Deforestation and forest Degradation, and Conservation, Sustainable Management of Forests and Enhancement of Forest Carbon Stocks

general audience. In addition, the SDM project results were publicised in a variety of ways, including at side-events at CBD-COP15 Part 2 and ISAP2022.

Contribution to the development of a new ISO standard on biodiversity

The International Organization for Standardization (ISO) set up a technical committee (TC331) on biodiversity in 2020 and the Government of Japan decided to actively participate in the process. IGES 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. Japan's responses to the three working groups on terminology, and measurement and monitoring, and strategic sustainable use have already been established in cooperation with relevant organisations, and IGES is preparing to lead the national response to a remaining working group on protection and conservation that are scheduled to be established in the future.

Business and biodiversity

IGES became a Forum member of the Taskforce on Nature-related Financial Disclosures (TNFD). Relating to this, IGES worked with MOEJ and others, to promote business engagement in this process. IGES also worked with Keidanren (Japanese Business Federation) Committee on Nature Conservation (KCNC) to conduct a survey of Keidanren member companies on their efforts in contributing to the new GBF and TNFD. The survey clarified potential contributions of businesses in different sectors to the new GBF targets and the progress of their responses to the emerging TNFD framework.

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 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 FY2022, the project organised international conferences and workshops, training seminars and summer school, 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, to better understand 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 FY2022, the project organised a workshop, stakeholder meetings, field surveys and online survey.

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 FY2022, IGES 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.

Development of an Integrated Assessment Model linking Biodiversity and Socio-Economic Drivers, and its Social Application (S-21)

The objective of this study is to develop an integrated assessment model integrating biodiversity, climate change, and other socioeconomic factors for future scenario analysis, and quantitatively estimate the impacts of response options for climate change mitigation and adaptation, and biodiversity conservation and restoration under different future scenarios. In addition, this integrated assessment model will be applied at the national and local scales. In FY2022, IGES led designing research institutional arrangement and research components and methods to make a full-fledged 5-year research project from FY2023.

(3) Selected publications

- Peer-reviewed article "Landscape products for sustainable agricultural landscapes"（Nature Food）
- Peer-reviewed article "The direct drivers of recent global anthropogenic biodiversity loss"（Science Advances)
- Peer-reviewed article "Towards a better future for biodiversity and people: modelling the Nature Futures"（Global Environmental Change）
- Peer-reviewed article "Messaging should reflect the nuanced relationship between land change and zoonotic disease risk"（BioScience）
- Peer-reviewed article "Spatial characterization of cultural ecosystem services in the Ishigaki Island of Japan: A comparison between residents and tourists"（Ecosystem Services）
- Peer-reviewed article "Transformative change of paddy rice systems for biodiversity: A case study of the crested ibis certified rice system in Sado Island, Japan"（Agroecology and Sustainable Food Systems）
- Article "ランドスケープ・アプローチ：サステナブルな食料生産のあたりまえ化に向けて"（明日の食品産業）
- Book Chapter "Forests, timber sources and supply chains of Myanmar: opportunities and constraints to ensure legal origin of timber"（Teak in Mekong for a Sustainable Future）
- Article "地域資本の可視化ーネイチャーポジティブ実践への基盤づくり"（農業と経済）
- Translation "IPBES 野生種の持続可能な利用に関するテーマ別評価報告書 政策決定者向け要約"
- Translation "IPBES 自然の多様な価値と価値評価の方法論に関する評価報告書 政策決定者向け要約"
- Translation "森林宣言評価　我々は 2030 年に森林の世界目標を達成できるか？"
- Article "ビジネスの観点で読む、生物多様性の重要論点と国際動向"（ニッキン ONLINE）
- Article "昆明・モントリオール生物多様性枠組の 3 つのポイント"（ニッキン ONLINE）
- Commentary "Does the Global Biodiversity Framework give due consideration to market mechanisms? "（Mongabay）

1.5. Adaptation and Water Area (AW)

To contribute to the realisation of a resilient and sustainable society, particularly in the Asia-Pacific region, AW will promote initiatives focusing on climate change adaptation and water environment measures. For climate change adaptation, AW will actively participate in international negotiations and policy processes and make policy proposals. AW will keep abreast of global efforts on adaptation and identifying international policy needs. Based on the findings, AW will work on priority issues on adaptation, including promotion of AP-PLAT, research on the integration of adaptation measures with disaster prevention,

climate mitigation measures, and biodiversity conservation, and work on locally-led adaptation (LLA), indigenous and local knowledge (ILK) systems, and transboundary adaptation. Regarding measures to conserve water environment, AW will actively promote WEPA's efforts as its secretariat to improve water environment governance in the Asia-Pacific region. In addition, AW will promote the deployment and proper management of decentralised wastewater treatment systems in the ASEAN region through a project funded by the Japan-ASEAN Integration Fund and address the issue of microplastics in rivers.

(1) Focus for Impact Generation in ISRP8 by Unit

AW will work closely with BRC for the successful full-fledged operation of AP-PLAT's capacity-building programme. For that purpose, we will keep strengthening the partnership with capacity building institutions and international initiatives in Asia and identifying the opportunities of collaborative works, promoting basic studies and developing adaptation tools and materials to lay down the foundation of the programme, and engaging in concrete capacity-building efforts, among others. AW will keep working on critical research and projects on adaptation, including monitoring and evaluation, ILK, Ecosystem-based Adaptation (EbA), transboundary adaptation, PWLM/PCLM, socio-hydrology, DRR-CCA integration, and compound risks. In addition, we will continue to contribute to international efforts on adaptation, including UNFCCC, IPCC, Paris Committee on Capacity-building (PCCB), PEMSEA, The Himalayan University Consortium (HUC), APAN Forum, and the Adaptation Without Borders Initiative (AWBI). AW will maintain its secretariat service for WEPA to achieve better water environmental governance in Asia. We also plan to work closely with ASEAN Secretariat and international partners to further promote a decentralised wastewater management approach in ASEAN countries and utilise this approach to address the challenge of emerging pollutants such as microplastics. It is expected that CES will become an institution-wide programme building on efforts for Nexus among others.

(2) Major activities in FY2022

AP-PLAT Partnership Collaboration and Development of AP-PLAT Capacity Development Contents

AW, in collaboration with relevant organisations, led development of the Asia-Pacific Climate Change Adaptation Information Platform (AP-PLAT) partnership for enhancing adaptation action by regional stakeholders. AW took the lead in holding an AP-PLAT Plenary meeting to discuss its future development. The meeting was attended by 52 representatives from various organisations, including government agencies, international organisations, research institutes, universities and private companies. Consequently "AP-PLAT Framework for Action 2023-2025" was adopted. With regard to capacity development activities under the AP-PLAT, IGES also supported holding the AP-PLAT Capacity Development Regular Meeting, which resulted in the adoption of "Strategy for AP-PLAT Capacity Development Program 2023-2025". IGES also produced guidebooks on compound and cascading disaster risk tailored in Bangladesh and Nepal. IGES also conducted the capacity development programme in these countries, utilising the e-learning material "Building resilience to compound and cascading disaster risks" developed in the previous year.

Contribution to global assessment report

A researcher from the AW team worked as a lead author for Chapter 3, Future interactions across the nexus of the thematic assessment of the interlinkages among biodiversity, water, food and health (nexus assessment), of the IPBES Nexus assessment report. In FY2022, the Second Order Draft of the assessment was prepared and now is under review. In particular, the contribution from AW is to showcase the nexus from water as an entry point in this assessment report. Researchers from AW are contributing as lead and/or coordinating lead authors for different chapters of the Global Environment Outlook 7 (GEO 7) of UNEP as a part of IGES-wide contribution.

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 at meetings held under the UN Framework Convention on Climate Change (UNFCCC) and provides support for international negotiations related to adaptation; at the 58th Subsidiary Body in June 2023, AW supported the Ministry of the Environment and engaged in negotiations on the Global Goal on Adaptation and other adaptation-related agendas. AW has also been following activities including high-level dialogues and relevant organisational activities on individual key themes (locally-led adaptation, disaster management, ecosystem, food systems, etc.). Through following international trends on adaptation and their development, AW made recommendations to the Ministry of the Environment on the future contribution of Japan in the field of adaptation. IGES researchers are engaged with the Adaptation Without Boundaries initiative, World Adaptation Science Program (WASP) and UNEP Global Adaptation Gap Report 2023 contributing to various assessment reports and policy briefs. In 2023, the team is contributing to the loss and damage chapter of the Gap Report, and developing policy briefs on the subjects of loss and damage and adaptation effectiveness.

Synergy between mitigation and adaptation towards a resilient net-zero ASEAN

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. In the first year of the study, the main adaptation elements and sectors to be considered in the transition to a society centered on renewable energy were identified, and a basic review of national adaptation plans (NAPs) and legal and institutional frameworks was conducted to prepare for fieldwork in the second and subsequent years.

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 FY2022, 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 16 peer reviewed journal articles, three book chapters, and 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, validation workshops etc. to present research outputs and a way forward.

Locally Led Adaptation (LLA)

AW has increased engagements on Locally Led Adaptation (LLA), which has been receiving increased attention since the 2021 Climate Summit, and especially after the Global Commission on Adaptation launched eight Principles on LLA. In this context, AW and APN jointly started a project on developing a model case of Locally Led Adaptation (LLA) as a direct contribution to the AP-PLAT capacity-building pillar covering South Asia (Nepal), South East Asia (Viet Nam) and the Pacific (Fiji). 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 31 March 2023. In the meantime, AW is exploring possibilities of regional partnership with renowned international initiatives and institutions such as Global Center on Adaptation (GCA)'s Global Hub on LLA, LLA Community of Practice as a new LLA endorsing organisation, 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 SRF projects mainly in collaboration with the Adaptation Without Boundaries (AWB) initiative, and several national partners in South and Southeast Asia. AW published 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.

A peer-reviewed journal article on regional droughts and implications for drought forecasting and early warning was also published. AW is developing a compendium of case studies on transboundary climate risks that highlight the factors resulting in TBRs under various contexts to be finalised during 2022-2023.

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 FY2022, the WEPA annual meeting was held in Siem Reap, Cambodia, and government officials from 13 countries participated in the meeting. In addition, AW continuously supported WEPA Action Programs in Cambodia and Myanmar, and Lao PDR in order to promote concrete actions for improving water governance in each country.

Integrated River Basin Management in ASEAN Countries

IGES, in collaboration with the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), is currently implementing a regional project pertaining to the State of River Basin (SORB) Reporting for river basins in ASEAN countries, with the objective of promoting the effective implementation of integrated river basin management (IRBM) in the region. Under this project, the team is currently developing a standardised and harmonised set of indicators for assessing the performance of IRBM programmes and initiatives, paving the way for the establishment of the Guidelines for State of River Basin Reporting System in ASEAN nations. This project's outputs will also provide a valuable tool for promoting sustainable water management and monitoring progress toward achieving the Sustainable Development Goals in the ASEAN region. These results will also facilitate the successful and efficient implementation of the GEF/UNDP/ASEAN Project on Reducing Pollution and Preserving Environmental Flows in the East Asian Seas through the Implementation of IRBM in ASEAN Countries.

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

In 10 ASEAN Member States (AMSs) over the past two decades, the proportion of households with access to improved sanitation facilities, such as septic tanks, has increased dramatically. However, sanitation involves more than just toilets. Consideration must be given to the entire sanitation service chain, including how to safely manage, treat, dispose of, and reuse treated wastewater and sludge, either on-site or off-site; using a centralised or decentralised system. Under a new initiative funded by the Japan - ASEAN Integration Fund entitled: "Strengthening Capacity Development for Local Governments in ASEAN to Tackle Microplastics and Water Pollution through Decentralized Domestic Wastewater Management Approach", AW is currently collaborating closely with the ASEAN Secretariat and AMSs to facilitate the establishment of a regional platform for the 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 eventually contribute to the achievement of relevant goals. A practical guidebook titled "ASEAN's Journey Towards Sustainable Sanitation: A Practical Guide to Decentralized Wastewater Management" is currently being developed based on the results of a multi-benefit "SDG6 Model City" pilot project currently being implemented in Bauang Municipality, La Union, the Philippines. This guidebook is expected to trigger a comprehensive transformation of the domestic wastewater sector in ASEAN countries on multiple levels. In addition, a series of technical capacity building workshops are being held for relevant stakeholders in ASEAN cities. Moreover, the project also facilitates the development and instruction of a standardised and harmonised protocol for monitoring microplastics in sewage treatment plants and receiving water bodies in ASEAN nations, which is an urgent and essential matter. It can contribute to enhanced data comparability, improved evaluation of wastewater treatment processes, more reliable data for policy development, and increased cooperation between ASEAN nations in the fight against microplastics pollution.

(3) Selected publications

Books/Book chapters

- "Water resource management through the lens of planetary health approach" (Water)
- "Microplastics in wastewater treatment plants" (Current Developments in Biotechnology and Bioengineering- Advances in Biological Wastewater Treatment Systems)
- "The globalization of local risks through globally interconnected industrial supply chains" (The Global Transboundary Climate Risk Report)

Peer-reviewed articles

- "Environmental non-migration as adaptation in hazard-prone areas: evidence from coastal Bangladesh" (Global Environmental Change)
- "Promoting global health transdisciplinary research for Planetary Health: Towards achieving the 2030 Agenda for Sustainable Development" (Journal of Global Health)
- "Hydrochemical indices as a proxy for assessing land use impacts on water resources: a sustainable management perspective and case study of Can Tho City, Vietnam" (Natural Hazards)
- "Nature-based solutions for climate change adaptation: A systematic review of systematic reviews" (Nature-Based Solutions)
- "Comparing the efforts, evaluations, perceptions, and wishes of citizens and governments regarding the MDGs and SDGs: a case study from Abuja, Nigeria" (Anthropocene Science)
- "Evaluating the Transformation of Urban River Water Quality from Receiving Urban Sewage to a Leisure Venue through an Economic Lens: A Case Study from Tokyo" (Earth)
- "Implications of Regional Droughts and Transboundary Drought Risks on Drought Monitoring and Early Warning: A Review" (Climate)

Policy briefs/reports/discussion papers/working papers

- Discussion paper "Leveraging Opportunities through Local Initiatives to Achieve Net Zero Emissions by 2050: A Case Study of Da Nang City, Vietnam"
- Technical paper "Climate Vulnerability of East Asia: Adaptation in the Region Can Provide Global Benefits"
- Proceedings "Understanding and Addressing Systemic Risks Behind the Socio-economic Impacts of COVID-19 in Japan and India: Developing a Roadmap for a Resilient and Sustainable Future"
- Issue brief "Environmental and Sustainability Implications of the Ukraine War for East and South Asia: Sustainability and Decarbonisation Should Be Accelerated Not Paused"
- Policy report "Improving Sustainable Consumption and Production in the Garment Sector in Cambodia"
- Research report "Guideline for Sustainable Consumption and Production in the Seafood Sector in Vietnam"

- Technical report “Guidelines for resource efficiency and cleaner production in Vietnam's Pangasius processing sector”
- Discussion paper “Training Needs Assessment Report (TNA): Towards Microplastic Monitoring and Evidence-Based Policy Measures in Vietnam”

Tools/learning materials etc.

- AP-PLAT Framework for Action 2023-2025
- Strategy Document for AP-PLAT Capacity Development Program 2023-2025
- Compound and Cascading Disaster Risk in Nepal: A Guidebook for Local Level Disaster Planning [in Nepali/English]
- Guidebook for Compound and Cascading Disaster Risk Management (Bangladesh) [in Bengali and English]
- Project Report of AP-PLAT Capacity Development Program on Compound and Cascading Disaster in Nepal
- Project Report of AP-PLAT Capacity Development Program on Compound and Cascading Disaster in Bangladesh

2. Three Taskforces

2.1. Business Taskforce (BIZ)

BIZ 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.

(1) Focus for Impact Generation in ISRP8 by Unit

BIZ will continue activities to exert influence on Japan’s Energy Mix Policy, more ambitious NDC for UNFCCC Conference of the Parties (COP), and to support adaption of carbon pricing in Japan. To create impact through the business sector, we will continue to work on increasing progressive companies as the Japan Climate Leaders’ Partnership (JCLP) members and to expand the needs of renewable energy through growing the size of RE100[11]/RE Action[12] membership. In addition, we will support companies in its decarbonisation in areas beyond renewable energy towards achieving net zero by 2050.

(2) Major activities in FY2022

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[13].

Empowering business coalition

JCLP has continued to expand in FY2022 and its membership increased from 216 to 242 (net increase of 26 companies).

[11] International business initiative committed to 100% renewable power, working to massively increase corporate demand for and delivery of renewable energy

[12] A new initiative in Japan for small and medium enterprises (SMEs), educational institutions, medical institutions, and local governments to declare switching to 100% renewable electricity by 2050.

[13] Since 2012, IGES has been appointed by JCLP as its Secretariat.

Decarbonisation of business practices

JCLP cooperated with Climate Group to support the participation of Japanese companies in RE100, EV100[14], and EP100[15]. The number of RE100 companies increased by eight in one year, now with a total of 80 companies. The total volume of electricity use[16] is about 6.1% of total electricity demand in Japan.

In addition, JCLP published the "Virtual PPA Guidance for Commodity Futures Act," which was examined through collaboration between companies on the demand and supply sides of renewable energy, and contributed to the adoption and dissemination of this method in Japan, and ultimately to the diffusion of renewable energy.

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 269 to 328 (net increase of 59 organisations).

JCLP and RE Action held their first symposium, which had been postponed due to the COVID-19 pandemic, to introduce advanced case studies of leading organisations to businesses, media, renewable energy companies, government ministries, and others. Kahori Miyake, co-chair of JCLP, spoke of the significance of working with large corporations, and Tadamori Oshima, special advisor to JCLP, expressed his determination to create a flow of political support for such initiatives. It also served as an opportunity for various stakeholders to unite and take action.

Policy engagement

JCLP has been committed to active policy engagement with the support of BIZ, which is the Secretariat of JCLP.

Specifically, BIZ supported the decision and dissemination of recommendations by JCLP for a fundamental transformation, including concrete policies for a transition towards decarbonisation, increased public awareness of climate science, and support for international negotiations. Examples of JCLP statements include: "Statement on the Transition to Zero Emission Commercial Vehicles (9 June, 2023)," "Statement Calling for Revitalization of Scientific Research to Clarify the Link between Extreme Weather and Climate Change (17 April, 2023)," "Policy Statement for the G7 Sapporo Ministers' Meeting on Climate, Energy and Environment and the Hiroshima Summit (28 March, 2023)," "Statement on the Growth-Oriented Carbon Pricing Architecture (1 November, 2022)" and "Statement on Ensuring Diversity of Renewable Energy Options (26 July, 2022)."

In addition, two JCLP parliamentary exchange meetings were held to inform diet members of the existence of companies that are proactive about decarbonisation and to promote the exchange of ideas and opinions. These exchanges also supported the establishment of the "Cross-Party Carbon Neutral Diet Members' League," a bipartisan parliamentary caucus that was subsequently established.

Moreover, the High-level Group of Experts on Net Zero Emissions Commitments of Non-State Entities, organised by the UN Secretary-General and with the participation of JCLP Co-Chair Kahori Miyake, released its recommendations on the credibility of net zero emissions declarations at COP27. BIZ supported the release of the recommendations and participation in the review meeting, as well as

[14] International business initiative aims to drive the transition to electro-mobility.
[15] International business initiative pledged to double the energy productivity of businesses.
[16] Reference figures including overseas offices.

translating the recommendations into Japanese and contributing to media coverage and recognition in Japan.

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

- "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
- "カーボンプライシングの活用に関する小委員会" at MOEJ
- "再エネ実装専門家ボードコアメンバー" at Tokyo Metropolitan Government

2.2. City Taskforce (CTY)

CTY 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.

(1) Focus for Impact Generation in ISRP8 by Unit

Aiming to encourage more cities to become carbon-neutral, resilient and sustainable, and to ensure credible policy planning and implementation of cities, we will continue to work closely with local and regional governments in Japan and overseas. It aims to provide necessary knowledge support, including methodologies in policymaking and implementation developed through scientific interpretation on the good practices of cities, especially those of Japanese local governments. To this end, CTY will work in close partnership with international organisations and city networks such as UNESCAP, UN-Habitat, ICLEI, and United Cities and Local Governments (UCLG). City-to-city collaboration and mutual learning is one of the core approaches CTY will take. Cross-unit collaboration within IGES will be strengthened more in the 8th Phase to address diverse and complex sustainability challenges of cities.

CTY will keep two main topics of its activities/research from the 7th Phase, namely climate change and the SDGs. Since more cities are now aiming for carbon neutrality by 2050, we will conduct research and activities that aims to provide policy support and capacity of local governments to address climate issues. SDG localisation also continues to be a priority topic. Through promoting mutual learning on localisation mainly through VLR, we will provide necessary capacity development support with our analysis of good practices on the integration of the SDGs in existing policy frameworks and governance, partnership building, and monitoring and evaluation systems. Specific SDGs will be addressed based on the needs of cities and the availability of external funds (e.g. waste, mobility, urban planning, etc.).

(2) Major activities in FY2022

Supporting SDG Localisation through Voluntary Local Reviews (VLRs)

In FY2018, 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. 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).

A new development on the SDG study in FY2022 includes a study on follow-up and review (FUR) of the SDGs at subnational level under the Environment Research and Technology Development Fund (ERTDF). Through interviews with leading cities in Europe and Japan and literature review, CTY is exploring opportunities and challenges of SDG localisation through the lens of FUR. This study continues until FY2024, and an interim finding of the study was included in the State of VLR 2023 that was published in July 2023 on the occasion at the HLPF.

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. This collaboration focused on sustainable building policies in KL and won the C40 Bloomberg Philanthropy Award (Building a Climate Movement) in October 2022. In FY2023, this collaboration was strengthened by the participation of the City of Saitama and extend its focus to decarbonisation at the neighbourhood level. CTY also 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. The Zero Carbon City International Forum 2023 was also organised through collaboration between the Ministry of the Environment, Japan, Office of Special Presidential Envoy for Climate, United States of America, and ICLEI in March 2022 to share experiences of leading cities in climate actions.

(3) Selected publications

- Peer-reviewed Article. "Contributions of the Voluntary Local Review Process to Policy Integration: Evidence from Frontrunner Cities" (Urban Sustainability)
- Journal Article. 「脱炭素実現を目指す交通・エネルギー政策とそれがもたらす豊かな交通社会（IATSS Journal)
- Conference paper. An Investigation about the planning intentions on the initial process of the area classification by the Yokohama City Government according to the Town Planning Act" (AIJ)
- Book Chapter 「自治体による自発的な SDGs 進捗レビュー「VLR」の動向」（「SDGs 白書 2022 人新世の脅威に立ち向かう！」SDGs 白書 編集委員会（編集）インプレス R&D）

2.3. Finance Taskforce (FIN)

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, FIN 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.

(1) Focus for Impact Generation in ISRP8 by Unit

FIN intends to provide practical solutions to generate impacts in the following three areas: (1) actual environmental benefits or impacts by green and sustainable finance, (2) shifting financial flows to decarbonised efforts in Japan, and (3) mobilising finance contributing to the SDGs at the local and

regional level (implemented, for example, through Regional-CES) in both Japan and the wider Asia Pacific region.

(2) Major activities in FY2022

Research and environmental improvement for practices of ESG finance

FIN has been engaged in commissioned work on green bonds from the Ministry of the Environment of Japan (MOEJ) since April 2017. In FY2022, 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 also contributed to finalising these revised guidelines. In addition, it supported the preparation of materials for the Study Group on Green Finance, which discusses scaling up and quality improvement of sustainable finance, organised by MOEJ. FIN also attended various international conferences on sustainable finance to gather information, including the 27th Conference of Parties of the United Nations Framework Convention on Climate Change (COP27) where as a cooperation organisation, FIN contributed to a seminar on sustainable finance at the COP27 Japan Pavilion organised by MOEJ and the Organisation for Economic Cooperation and Development (OECD).

(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 FY2022, FIN 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.

Shifting financial flows to decarbonization efforts in Japan

In order to mobilise the huge amount of funding required to deliver on the climate goals and 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. In FY2022, FIN focused on mainly two activities for this purpose:

(1) Stakeholder engagement through a new partnership with the Climate Bonds Initiative: In FY2022, FIN entered into a strategic partnership signing an MOU with the Climate Bonds Initiative (CBI) for the purposes of delivering engagement activities in Japan. As part of this initiative, IGES agreed on a part-time secondment of an IGES-FIN staff to CBI starting in September 2022 to manage CBI engagement activities in Japan. The engagement strategy for FY2022, developed based on detailed stakeholder analysis, has a three-pronged approach. The first pillar focuses on policy influence through engagement with policymakers. Transition finance industry roadmap reviews under the Ministry of Economy, Trade and Industry (METI) and the design of the forthcoming GX economic transition bond by the Japanese government have been identified as priority areas. The second pillar focuses on technical assistance to industry financing practices, working in cooperation with underwriters and verifiers. The third pillar focuses on support and engagement with investors to increase their visibility and influence toward the mobilisation of credible climate finance. Key activities delivered included a focused engagement and outreach week targeting the aforementioned stakeholders by CBI CEO Sean Kidney and a three-day transition finance online training session delivered to Japanese financial institutions.

(2) Regional ESG finance: FIN collected and consolidated information on ESG good practices by members of Principles for Financial Action towards a Sustainable Society which many local banks join, 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.

Green & Low carbon technology transfer between Middle East & North Africa and Japan

Since FY2021, FIN explored the need and feasibility through IGES Strategic Research Fund (SRF) 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. FIN then agreed to continue its collaboration and proceeded with practical steps toward establishing a Japan-MENA Business Matching Platform to facilitate green and low-carbon technology transfer. In FY 2022, FIN extended the partnership to include the Regional Center for Renewable Energy and Energy Efficiency (RCREEE), the inter-governmental organisation across pan-Arab countries, and held side events at TICAD8 and COP27 among key stakeholders to discuss the necessity and feasibility of the Platform. Currently, FIN is collecting necessary data about "Seeds" in Japan and "Needs" in the targeted MENA countries in terms of technologies, policies, financing schemes, networks, etc. related to green business development, while preparing to launch the Platform at COP28 (UAE, 2023).

Financing for Decarbonisation at the City Level

In May 2021, the EU and Japan announced a Green Alliance to accelerate the transition toward a climate-neutral, circular and resource efficient economy over the next decade. Under this Alliance, IGES co-hosted with the Delegation of the EU to Japan the "EU-Japan 100 Cities Dialogue on Climate Change Action" event in January 2023. In the event, as one of the sessions, best practices and solutions were shared on financing city-level decarbonisation projects and activities. As part of MOEJ's commissioned work, IGES, as project leader, coordinated to develop a JCM model project to introduce renewable energy at the factory level and a business matching framework under the framework of city-to-city cooperation between Yokohama City and Da Nang City, Viet Nam. IGES also made policy recommendations toward decarbonisation in Da Nang including raising the level of ambition of energy efficiency and conservation and renewable energy targets.

(3) Selected publications

- Issue Brief “Japan Sustainable Finance Policy Update May 2022 – August 2022”
- Commissioned Report “令和 4 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”
- Discussion paper “Leveraging Opportunities through Local Initiatives to Achieve Net Zero Emissions by 2050: A Case Study of Da Nang City, Vietnam”
- Article “Revisions of Sustainability-Linked Loan Principles – discussion and background” (in Japanese)
- Factsheet “Japan Green Finance State of the Market - 2021”
- Article “Special Contribution: COP27 commentary: financial institutions adhere to 1.5°C target despite energy crisis” (Nikkin ONLINE (in Japanese))
- Article “Special Contribution: Private finance trends at COP26 to keep in mind before COP27 - with a focus on GFANZ” (Nikkin ONLINE (in Japanese))
- Article “Special Contribution: Regional financial institutions as key players in delivering impact’ (a three part article) (Nikkin ONLINE (in Japanese))
- Article “New front-runners toward carbon neutral: Middle East and North African countries” (Nikkin ONLINE (in Japanese))

- Issue Brief "On the publication of the revised version of the Green Bond Guidelines and other guidelines in Japan - Recommendations for further market expansion." (in Japanese)
- Project Document "How to Operationalize a Green Business Matching Platform Between MENA Countries and Japan?"

3. Five Satellite Offices and IPBES-TSU-IAS

3.1. Kansai Research Centre (KRC)

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.

(1) Focus for Impact Generation in ISRP8 by Unit

KRC will continue promoting technology transfer in India, Thailand and other countries where opportunities arise. Activities in India are expanding to the areas of pollution management focusing on air pollution caused by thermal power plants and energy-intensive industries, whereas the focus in Thailand is on energy saving of industries and buildings in association with the Japan Platform for Redesign: Sustainable Infrastructure (JPRSI). Collaboration with Hyogo Prefecture is expanding as well, ranging from designing a woody biomass utilisation business model in Hokusetsu region, supporting cities pledged to be carbon neutral by 2050, to designing a decarbonising road map, matching private companies with service providers of renewable energy power purchase agreement (PPA), and promoting decarbonised society development among university and high school students.

(2) Major activities in FY2022

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 January 2023 a seminar was held at the Japan-India Environment Week in New Delhi for introducing JITMAP activities as well as superior performance and life cycle cost advantages of Japanese environmental technologies to government agencies, experts such as energy assessors, and business people. A seminar was held with the aim of promoting the diffusion of the technology through the introduction of case studies of the introduction of the technology. The JITMAP activities were also presented at an exhibition booth which was visited by the Minister of the Environment, Akihiro Nishimura. In February 2023, a seminar on 'Promotion of Japan-India Cooperation in Environmental Technology' was held in Pune, Maharashtra, for government agencies and business people from Maharashtra to exchange views on how Japan, India and JITMAP should cooperate to overcome environmental problems such as air pollution in Maharashtra. The outcomes of this seminar and JITMAP activities were published in the newsletter of SAMEEEKSHA, a platform for small and medium enterprises in India.

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 FY2022, with the full cooperation of TERI, KRC contributed to the preparations for the Japan-India Environment Week in New Delhi in January 2023, and a survey was conducted to identify technical assistance projects in the field of air pollution.

Regional Circulating and Ecological Sphere (Regional-CES) Projects

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. In FY2022, the Hokusetsu Satoyama Regional Circulating and Ecological Sphere Forum 2023 - Exciting Satoyama in the Future - was held at Tokurinji Temple in the Hokusetsu region, to promote this project to a wider audience. The forum was also broadcasted online. In addition, KRC held national workshops in three Asian countries to promote the concept of Regional-CES with the support of the Asia-Pacific Network for Global Change Research (APN). In October 2022, a national workshop entitled “Promotion of the Regional Circulation and Symbiosis Sphere (Regional-CES) Concept for Resilient and Sustainable Communities in Thailand" was held in Bangkok, and a national workshop entitled "Strengthening Urban-Rural Linkages for Localisation of the SDGs through Integrated Regional Planning and Inclusive Action" was held in Depok, Indonesia, in May 2023.

Contribution to Environmental Policy of Hyogo Prefecture and Local Municipalities

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. In FY2022, the Hyogo RE100 project was implemented to collect basic information on the actual status of renewable energy introduction by small and medium-sized enterprises and to support the launch of the 'Hyogo RE100' website as an information dissemination tool. In addition, the Awaji City Renewable Energy Promotion Study was carried out for promoting consensus building and zoning for the introduction of renewable energy in a way that pursues benefits for the region, such as conservation of the local environment, regeneration and effective utilisation of devastated farmland and revitalisation of the local economy. In February 2023, Hyogo Prefecture, Kobe University, Sumitomo Mitsui Banking Corporation, Kobe Shimbun and IGES signed a collaborative partnership agreement with the aim of promoting decarbonisation in Hyogo Prefecture, and with this partnership collaborative initiatives on themes such as utilisation of carbon footprint are ongoing.

Next Generation Capacity Development projects

KRC planned, drafted and moderated the six-day 'Hyogo High School Environmental and Future Leaders Development Project' organised by Hyogo Prefecture and the Hyogo Environmental Advancement Association. A total of 29 participants from 10 high schools in the prefecture took part in the programme, which included lectures by experts, group discussions and site visits to renewable energy projects. In the final session, each group presented its message to society on a wide range of themes, including solar sharing, Satoyama in the near future, high-tech countryside and environmental taxation. In addition, KRC collaborated with the Kobe University’s Econo-Legal Studies (ELS) programme to a series of lectures with 12 sessions on the theme of a decarbonised society in the first semester of FY2022.

(3) Selected publications

- Policy brief for T7 “Critical Minerals for Net-Zero Transition: How the G7 can Address Supply Chain Challenges and Socioenvironmental Spillover”

- Conference paper ”耕作放棄地への太陽光発電導入ポテンシャルに関する分析 : 淡路市の事例からの示唆”
- PR Material “Japan-India Technology Matchmaking Platform (JITMAP) Promoting the Environmental Technology to Indian Industries Application of Japanese”
- 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 (Ver3)”

3.2. Kitakyushu Urban Centre (KUC)

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, aiming 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.

(1) Focus for Impact Generation in ISRP8 by Unit

KUC continues to bolster local actions in the area of zero-carbon, circular economy, green growth, and the SDGs. KUC will further explore ways to contribute to the institutionalisation of a sustainability concept in city policies and practices in Asia-Pacific cities; the dissemination of information on the global trend of environmental agenda to local stakeholders in Kitakyushu and Kyushu region; as well as the local coordination in transition to zero-carbon cities, circular cities, localising the SDGs as a local hub in Kitakyushu and Kyushu region in this area.

(2) Major activities in FY2022

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 the best approach for supporting local governments and how to effectively implement an urban carbon mapping tool. In addition, considering the fact that residents must make lifestyle changes to transition to a zero-carbon city, KUC conducted awareness-raising activities for youth and encouraged further dialogue with local stakeholders in Kitakyushu and Kagoshima by holding a "1.5ºC Lifestyle Workshop ", with a view to creating a template of the workshop that can be deployed in other municipalities. Besides this, 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" (22 projects were adopted in FY2022). 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. Zero-carbon scenario development using the Asia-Pacific Integrated Model (AIM) was also conducted regarding the Hai Phong City- Kitakyushu City collaboration. KUC has been playing a role of 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.

Evolving Sustainable Waste Management Practices

With the aim of building a resource-circulating society at the city level, KUC provided various activities. 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 the Japan-ASEAN Integration Fund (JAIF). KUC assisted a project in charge of conducting waste surveys and capacity building in three cities in Cambodia. Furthermore, KUC established a network and trust with key EU players in the Circular Economy field and contributed to organising a World Circular Economy Forum 2022 High-level Side Event in collaboration with Holland Circular Hotspot. Lastly, KUC is participating in the JICA Partnership Programme in Davao City to properly implement a waste disposal process in collaboration with the city and local residents in a coastal area where municipal solid waste collection, transportation and recovery are not properly carried out. In Japan, KUC contributed to organising the "Kitakyushu Circular Economy Vision Promotion Commission" which is a local platform in transition to a circular economy.

Promoting Green Growth and Localising the Sustainable Development Goals (SDGs)

KUC has been organising the Kitakyushu SDGs Training programme annually since 2019, which is an English-speaking programme to learn and observe actual SDGs good practices on the local ground. For FY2022, the 4th SDGs Training Programme was organised for 10 international university students in March 2023, in Kitakyushu City and Goto City. The students learned about the Frontrunner Practices of Creating Synergy Effects of Renewable Energy under the Zero Carbon Cities framework. KUC has been engaging in the OECD's SDGs localisation programme, "A Territorial Approach to the SDGs," with Kitakyushu City acting as one of the pilot cities. KUC served as the local team for Kitakyushu City and contributed to the development of a good practice collection, "Tool Kit" and 5th anniversary publication. Moreover, KUC has begun to co-implement a new SDGs Business Verification Survey with Private Sector of the Japan International Cooperation Agency (JICA), "Disseminating Japanese Technologies to Extinguish Forest and Peatland Fire using Environment Friendly Soap-based Fire Fighting Foam" in Central Kalimantan Province, Indonesia" with a leading SDGs company in Kitakyushu City, Shabondama Soap Ltd. As a new initiative, KUC led a discussion with the City of Kitakyushu to design a newly establish SDGs Certificate Programme (tentative title), which promotes SDGs management at local SMEs and sustainable finance at local financial institutes. KUC also served as a local member of several local committee meetings and provided lectures and workshops for an increasing number of schools, universities, civic organisations, and private companies across a wide range of stakeholders in Kyushu.

(3) Selected publications

- Proceedings "Kagoshima 1.5℃ Lifestyle Workshop" (in Japanese) (IGES)
- Fact Sheet "Citizen Participation for Solar Energy Development in the EU – Case Study from Vienna, Austria" (IGES)
- Brochure "City-to-City Collaboration for Zero-Carbon Society 2022" (MOEJ)
- Proceedings "Boosting Circular Economy in Africa through hubs" (WCEF)
- Research Report "Mechanism to customize a suitable EPR model for plastic packaging waste in the Philippines" (UN-Habitat)
- Training or Learning Material, "Marine Litter Learning Kit: A Facilitator's Guide" (UN-Habitat)
- Peer-reviewed Article "Performance of Takakura composting method in the decentralised composting center and its comparative study on environmental and economic impacts in Bandung city, Indonesia" (International Journal of Recycling of Organic Waste in Agriculture)

3.3. Regional Centre in Bangkok (BRC)

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

(1) Focus for Impact Generation in ISRP8 by Unit

BRC intends to create the following impacts: (1) increase the capacities of ASEAN governments to develop and implement climate change adaptation policies and projects though ASEAN project on disaster risk reduction by integrating climate change projection into flood and landslide (2nd phase) and AP-PLAT, (2) adopt know-how driving clean development and mobilise resources for regional engagement in climate change activities by implementing several projects of the UNFCCC-IGES Regional Collaboration Centre (RCC), (3) improve environmental compliance and enforcement of pollution control practices in 18 Asian member countries of Asian Environmental Compliance and Enforcement Network (AECEN), and (4) improve environmental quality in ASEAN cities through better long-term city planning and higher capacity to implement transformative local actions, closely linked to the SDGs by proposing and conducting ASEAN SDGs Frontrunner Cities Programme (2nd phase).

(2) Major activities in FY2022

Climate Change Mitigation

The UNFCCC-IGES Regional Collaboration Centre (RCC) provides multifaceted support to facilitate the implementation of the Paris Agreement. RCC organised two webinars to support the publication of NDC and LT-LDS Synthesis Reports. 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 Caucasia. On market mechanisms, RCC assists the countries in the Asia-Pacific region to enhance capacity for the implementation of Article 6 and supports ASEAN countries, Pakistan, and Mongolia in exploring the options for utilising 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 project on Disaster Risk Reduction by Integrating Climate Change Projection into Floods and Landslide Risk Assessment (ASEAN DRR-CCA Phase 1, 2018-2021) output contributed to the regional and global efforts on disaster risk reduction, including its Contributing Paper to the Global Assessment Report 2022 (GAR2022), two guidelines endorsed by ASEAN countries, and receiving 3rd Mountain View Award for Best Impact Generation. Project website [http://aseandrr.org].

The proposed continuation project extends from ASEAN DRR-CCA Phase 1, designed to widen the application of methodologies and approaches to integrate CCA impacts into river designs in selected case study areas, as well as to develop specific risk assessment outputs relevant for specific priority vulnerable sectors for further aiding in better risk communication. The concept was succeeded in the AADMER Work Programme 2021-2025 as Priority Programme 1: Risk Assessment and Monitoring - aimed to enhance ASEAN capacities to forecast, assess and monitor multiple risks using science-based, climate-responsive, and innovative approaches as well as strengthen ASEAN systems on multi-hazard early warning and risk communication.

In FY2022, BRC focused mainly on (1) facilitating coordination of mutual cooperation among AMS and pilot host countries, (2) facilitating the review and appraisal of Phase-2 to ensure link with the new ASEAN Work Programme, (3) supporting joint meeting and other opportunities for increased interaction, cooperation and publicity namely: a) 41st ASEAN Committee on Disaster Management Meeting, b) 10th ASEAN Ministerial Meeting on Disaster Management (AMMDM) and ASEAN Day on Disaster Management (ADDM), 17-20 Oct 2022, Bangkok, c) Thematic Capacity Development Workshop – Insights into Mainstreaming Disaster Risk Reduction in Urban Centers, 6 Sep 2022, d) Open Session of the ACDM Working Group Meeting, 15 Feb 2022, e) ASEAN Secretariat – IGES Meeting, 26 Aug 2022 and f) ISAP Thematic Track 3, 29 Nov 2022.

In addition, BRC contributed to Capacity Development Program of the Asia-Pacific Adaptation Information Platform (AP-PLAT) together with AW. Under MOEJ commissioned work, BRC prepared a document entitled "Strategy for AP-PLAT Capacity Development Program 2023-2025" in order to define the direction of future activities, and developed two e-learning modules. BRC also organised AP-PLAT capacity development regular meeting with partner organisations to enhance networking activities. For outreach activities, AP-PLAT sessions were organised at COP27 and Water Security and Climate Change Conference.

Localising the SDGs in ASEAN Cities

In FY2022, the project proposal for the ASEAN SDGs Frontrunner Cities Phase 2 (SDGs-FC 2) was approved by Japan's Ministry of Foreign Affairs with funding from the Japan-ASEAN Integration Fund (JAIF). From Sep 2022 – Jan 2023, the project team initiated the project by preparing for the 1st Regional (Inception) Workshop, which was eventually co-organised with the Government of Malaysia on 10 -11 Jan 2023 in Seberang Perai, Penang, Malaysia. The Workshop also included the 1st Project Steering Committee meeting which endorsed the proposed project activities by 12 cities in eight ASEAN Member States, as well as common priority topics for future regional activities, regional monitoring & evaluation framework/indicators and follow up activities. Subsequently, the project team focused on one-on-one consultations with each National and City-level Project Focal Points to develop full-fledged Project Action Plans for implementation in FY2023.

Environmental Compliance and Enforcement and Sustainable Consumption and Production (SCP)

In FY2022, AECEN took proactive approaches and engaged in discussions with its partners, including USEPA, Environment and Climate Change Canada, IUCN World Congress, AELERT, UNEP, European Network for Prosecutors on the Environment (ENPE), Environmental Law Institute (ELI), and other enforcement networks to strengthen long-term collaboration through the quarterly International Network for Environmental Compliance and Enforcement (INECE) Leadership Group meetings, while also identifying new partners, including local governments and academia. AECEN also led fundraising for environmental compliance and enforcement, environmental governance, and marine plastic pollution projects, including the APAC Sustainability Seed Funded through the Asian Venture Philanthropy Network to implement the "Zero Plastic Waste Island (Closed Island Plastic Recycling System)" Project, Asia Gender Equality Fund to "Support Women's Empowerment through Improved Environmental Compliance and Governance and Technological Support in Samut Sakhon," Combating the Input for Marine Litter in the Greater Mekong Region for "Marine Debris Framework - Regional Hubs around the Globe" (Marine:DeFRAG) programme funded by the German government, a Global Environment Facility (GEF)-funded project on "Plastic Waste Management and Behaviour Change in Thailand," and a WWF project "Accelerating and Scaling up City-level Best Practices from Asia for the Global Plastic Treaty Recommendations."

(3) Selected publications

- Submission to Policy Process "Voluntary Local Review 2022: The Implementation of the UN Sustainable Development Goals in Nakhon Si Thammarat City Municipality"
- Submission to Policy Process "Strategy for AP-PLAT Capacity Development Program 2023-2025"
- Commission Report "Viet Nam National Carbon Market"
- Article "ASEAN Success Stories"
- Training material "E-learning modules on adaptation (2 modules)"

3.4. Tokyo Sustainability Forum (TSF)

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.

(1) Focus for Impact Generation in ISRP8 by Unit

TSF will continue to contribute to the impact generation of IGES by providing a comfortable and safe office environment for IGES staff. In particular, TSF will strengthen its support for online meetings and remote work, which are rapidly increasing at TSF in the era of "new normal." TSF will also support IGES Management in attending online international conferences to showcase the latest findings of IGES.

TSF will strive to improve its operations with regular feedback from IGES staff. In addition, TSF will hold seminars and workshops to enhance the collaboration between IGES and national agencies such as MOEJ, as well as non-national stakeholders including the private sector and local governments. TSF will provide necessary assistance to IPBES-TSU-IAS and ICLEI-JAPAN and conduct activities to strengthen the collaboration with them.

Furthermore, TSF will work on projects in cooperation with relevant IGES teams on Biodiversity and emerging issues that do not fall under the scope of other units. In particular, with regard to Environmental Impact Assessments, TSF will actively work on necessary surveys, development of information platform, and bilateral support to strengthen the Environmental Impact Assessment systems and implementation in Asian countries in support of the overseas business expansion of Japanese companies.

(2) Major activities in FY2022

IPBES Technical Support Unit

TSF continued to host the IPBES-TSU-IAS, and supported its work, including the development of a thematic assessment report on invasive alien species.

Support for preparations to hold the 2nd Asia Parks Congress

The 2nd 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 of Japan. TSF also set up a working group on "Nature-based Solutions (NbS)", including preparations for the draft NbS promotion guidebook, and conducted survey of trends in meeting of protected areas abroad etc.

Contribution to the development of a new ISO standard on biodiversity

In cooperation with the Japanese Standards Association (JSA), IGES manages the National Mirror Committee, whose operation is a prerequisite for Japan's participation as a voting country in the Technical Committee on Biodiversity (TC 331) run by the ISO. The TSF, together with the BDF, analyzes ISO documents, liaises with related organizations, supports discussions at ISO plenary meetings, and assists with voting and decision-making to support the discussions of National Mirror Committee and ensure effective voting.

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, adapting to changing conditions with the COVID-19 pandemic.

(3) Selected publications

- FY2022 Report on the commissioned work of research and support for dissemination related to cooperation of protected areas in Asian regions

3.4.1. IPBES-TSU hosted at Tokyo Sustainability Forum

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.

(1) Major activities in FY2022

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 FY2022, the TSU supported the Secretariat at the 9th session of the IPBES Plenary (IPBES-9; July 2022, Bonn, Germany) and organised the fourth SPM meeting (October 2022; Santiago, Chile and online). Additionally, it coordinated with the assessment experts in responding to comments received in the additional SPM review which took place between July and September 2022. The TSU then submitted a draft assessment report to be considered for approval at IPBES-10 (August-September 2023).

Funding for TSU operations is provided by the UNEP Trust Fund, matched by contributions from the Ministry of the Environment, Japan.

3.5. Beijing Office (BJG)

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).

(1) Focus for Impact Generation in ISRP8 by Unit

As the Integrated Coordination Platform between the governments/cities/companies of Japan and China, BJG will conduct the model projects introducing air pollution control technologies etc. with co-benefits effect, whose outcomes will be disseminated and promoted on the markets in the Asian region including China. By doing so, BJG will contribute to materialising a decarbonised society, and will support environmental business between Japanese and Chinese companies.

(2) Major activities in FY2022

Promoting Co-benefits of Better Air Quality and CO2 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.

In FY2022, in order to deploy good results obtained from some of the model projects implemented in China, IGES engaged in discussion and coordination with relevant parties in Japan and in third countries (Indonesia, Malaysia etc.), to consider the possibilities of developing model projects using the Joint Crediting Mechanism (JCM) scheme. IGES also conducted site surveys at candidate companies in Indonesia and Malaysia for implementation of model projects.

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)

(3) 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
- Book "Xiaoliu's China Environment Watch II" published by Kankyoshimbunsha Co., Ltd. in November 2022

4. Strategic Management Office (SMO)

As a mechanism to effectively promote strategic research and the impact generation of outputs in the Integrative Strategic Research Programme for the 7th Phase (from FY2017), the former Programme Management Office (PMO) and Secretariat were merged to create the Strategic Management Office (SMO). The SMO is charged with three functions: Knowledge and Communications (KC); Research and Publications (RP) and Planning and Management (PM).

4.1. Knowledge and Communications (KC)

(1) Major activities in FY2022

Strengthening the institutional impact generation capacity

In the ISRP8 which began in FY2021, an institutional target was set to make 30 intended impact cases each year. It was also deemed that the scale of impacts will become larger than before. SMO-KC works to promote the strengthening of the institutional impact generation capacity by focusing on the following points.

- Institutional operations at selected international processes (UNGA/HLPF/APFSD, UNFCCC-COP, CBD-COP, UNEA, G7/G20, T7/T20, etc.)
- Institutional strategic publications (IGES messages, submissions to international/domestic processes, commentaries, knowledge brokering products, Japanese translation of selected sustainability / environmental assessment reports, etc.)

- Institutional strategic networking (Serving as a Secretariat amongst research institutes, strengthening institutional linkage incl. MOUs with UN and selected international organisations.)
- Institutional campaigns and events (ISAP, post COP seminar, etc.)
- Facilitation of planning/planned impact generations (Monthly meetings for cross-unit operations, President awards, SOF, etc.)
- Public Relations (Press release, media seminars, webinars, IGES owned media (web, newsletter, SNS), etc.)
- Strategic Communications (Communication Planning, Op-Ed., special webpage, commercial publication, etc.)

Main achievements are provided in Section 1.

4.2. Research and Publications (RP)

(1) Major activities in FY2022

Direct contribution to research and research outputs

- To directly produce and contribute to publications, RP conducted research on issues related to SDGs, climate and sustainability science. Main publications included an issue brief on "Overcoming the Climate Crisis and Achieving the SDGs: After COVID-19 and the Russian Invasion of Ukraine," T7 Issue Paper on "Integrated Approach for Well-Being, Environmental Sustainability, and Just Transition", a peer-reviewed article on ASEAN countries' environmental policies for the Sustainable Development Goals (SDGs), and a book chapter "A Clean Air Sustainable Development Goal (SDG)." RP contributed to 14 peer reviewed articles on biodiversity as a co-author.
- RP coordinated the following externally funded projects:
  - Sixth ASEAN State of the Environment Report (JAIF)
  - ASEAN Climate Change Strategic Action Plan (JAIF)
  - Suishinhi S-21
  - e-Asia (with BDF)
  - MOEJ project on sustainability assessment indicators
  - Keidanren project on biodiversity
  - Belmont Forum "ABRESO" (with BDF)
  - Suishinhi 1CN-2006 (with BDF, CE, AW)
  - Kakenhi (with BDF)
  - World Fish (with BDF)
  - JICA capacity building project
  - *Sustainability Science* editorial office (Springer)
- RP contributed to UNEP's GEO-7 (Global Environmental Outlook 7) as a CLA.
- RP contributed to the IPBES Nexus assessment as a CLA.
- RP contributed to UNFCCC reviews of Ireland's 5th Biennial Report and 8th National Communication.
- RP coordinated and/or contributed to several translations (Japanese/English) of major reports such as the Club of Rome's Earth for All: A Survival Guide for Humanity, UNEP's Adaptation Gap Report (Executive Summary) and Emissions Gap Report (Executive Summary), and Future Earth's 10 New Insights in Climate Science.

Institute-wide research management

- RP managed the SRF application process. RP also conducted a review of the achievements of the FY2021 SRF projects and is in the process of reviewing the FY2022 projects.

- RP compiled the institute-wide publication plan with the list of planned outputs, and coordinated reporting on actual outputs. RP also compiled the citation statistics for peer reviewed journal articles and analysed the impact factors of journals in which IGES researchers publish articles.
- The Publication Policy was maintained, and RP also continued to manage the publication approval process.
- RP managed the editorial office of the peer reviewed journal *Sustainability Science*.
- RP supported the process for selecting the IGES President's Award for Best Publication.

Research-related support

- RP managed the Library including maintenance of database subscriptions.
- RP provided editing services, including both English and Japanese, not only for research outputs but also for communications and management-related documents.
- RP coordinated translation services.

Institute-wide achievements regarding outputs are indicated in Section 3.

4.3. Planning and Management (PM)

Major activities in FY2022

Planning and Management streamlined the procedures in planning and decision-making simultaneously taking consideration of appropriate resources management (financial and human) and provided corporate management services to maintain the organisational status and interest, and to support research activities through five functions: (i) Planning and Evaluation, (ii) Information and Communication Technology (ICT) Systems, (iii) Financial Management, (iv) HR Management, and (v) General Administration.

Main achievements are provided in Section 4.

ANNEX 2: KEY ACHIEVEMENT BY OTHER PROJECTS FOR PUBLIC-INTEREST PURPOSES

1. 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 greenhouse gas (GHG) emissions and removals;
- To encourage the widespread use of this methodology by countries participating in the IPCC and by signatories of the United Nations Framework Convention on Climate Change (UNFCCC).

In FY2022, the total amount of the funds received was JPY 218 million (including JPY 150 million from the Government of Japan, JPY 7 million from Temporary restricted IPCC Japanese special funds), while the total expenditure was JPY 218 million, resulting in a positive balance.

At the 59th Session of IPCC (July 2023), Mr. Takeshi Enoki of IGES was elected as Co-Chair of the TFI for the IPCC 7th assessment cycle (5-7years from the end of July 2023), which ensured that the IGES will continue hosting the TSU during that cycle.

(1) Development, Maintenance and Improvement of IPCC Inventory Software

The IPCC Inventory Software[17] helps inventory compilers to estimate emissions and removals of greenhouse gases according to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (2006 IPCC Guidelines). In FY2022, 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 the Users' Guidebook and add-ons. TSU has attended a number of events to present the software.

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

The IPCC EFDB[18] 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 FY2022, 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 database and increase its use.

(3) Production of Reports to Supplement or Refine the IPCC Inventory Guidelines

TSU had 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, in FY2021 with virtually holding the 3rd expert meeting in April 2022. Therefore, the TSU did not plan any specific activities during FY2022 to prepare for production of the Methodology Report on SLCF when its business plan for FY2022 was submitted in May 2022. However, in accordance with the agreement by the IPCC

[17] https://www.ipcc-nggip.iges.or.jp/software/index.html
[18] https://www.ipcc-nggip.iges.or.jp/EFDB/main.php

reached at its 57th Session in September 2022, TSU worked to collect nominations of experts from IPCC member governments, etc. for selection of invitees to the Scoping Meeting for the Methodology Report on SLCF which will be held during FY2023.

The TSU organised an Expert Meeting on Use of Atmospheric Observation Data in Emission Inventories in September 2022, and produced a report with relevant outcomes of the expert meeting. The outcomes of the meeting will inform the future refinement of the IPCC Inventory Guidelines.

Furthermore, TSU worked on corrigenda for the 2006 IPCC Guidelines and their 2019 Refinement.

(4) Inventory Internship Programme

In FY2022, this programme was not implemented.

(5) Collaboration with Other Organisations

In FY2022, TSU continued cooperation with other organisations on inventory-related matters such as the National Institute for Environmental Studies (NIES) of Japan and the Global Forest Observation Initiative (GFOI). For example, TSU contributed its support to inventory-related capacity building programmes implemented by the NIES by participating to the 19th and 20th Workshops on Greenhouse Gas Inventories in Asia, and provided a test exercise at GFOI plenary on how to use the IPCC Inventory Software for reporting GHG emissions and removals from UNFCCC REDD+ activities.

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

2. 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, in 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.

As a summary of its financial status, the overall expected revenue in FY2022 is JPY 257 million, and the expenditure is JPY 286 million, resulted in a deficit of approximately JPY 29 million. The main reason for this deficit was the resumption of business activities prior to FY2021, which had been stalled due to the COVID19 pandemic, and increased payments for grants and travel and transportation expenses. The amount of the deficit was withdrawn from the Deposit for Promoting APN Projects and consequently, the substantial balance was resulted in positive balance.

APN conducted the following activities in FY2022.With the recovery from the COVID-19 pandemic, APN is returning to pre-COVID operations, holding the first face-to-face Steering Committee (SC) meeting in three years.

(1) Collaborative Regional Research Programme (CRRP)

To contribute to the development of policy options that respond to global change from the scientific perspective in the Asia-Pacific region, the 49th Steering Committee Meeting of APN approved funding to support nine regional research proposals under the Collaborative Regional Research Programme (CRRP). These were selected from the APN FY2021 Call for Proposals for support in FY2022.

(2) Scientific Capacity Development Programme (CAPaBLE)

To build the scientific capacity in research on global change and sustainability in developing countries, the 49th Steering Committee Meeting of APN approved funding to support 10 proposals under the Scientific Capacity Development Programme (CAPaBLE). These were selected from the APN FY2021 Call for Proposals for support in FY2022.

(3) Direction and Activities of APN

i. Subregional Committee Meetings and Proposal Development Training Workshops

Subregional committees (Temperate East Asia, Southeast Asia, South Asia and the Pacific) have been established to discuss challenges, as well as research and capacity development needs common to the subregion. Three subregional committees planned to hold their committee meetings in FY2019, FY2020 and FY2021; however, they were postponed due to the COVID-19 pandemic. In FY2022, with the easing of travel restrictions, the 10th South Asia Subregional Committee (SA-SRC) Meeting was held in person in Sri Lanka in November 2022, and the 13th Southeast Asia Subregional Committee (SEA-SRC) Meeting was held in person in Thailand in May 2023. The Proposal Development Training Workshop (PDTW), which aims to develop the capacity of early-career professionals to compete for research funding, was held back-to-back with the SA-SRC Meeting and the SEA-SRC Meeting, respectively.

ii. Enhancing strategic relationships with relevant organisations

To enhance strategic relationships with global change and sustainability organisations, the Collaborative Framework for Scientific Cooperation was signed with the North Pacific Marine Science Organization (PICES) in February 2023 and developed a collaborative research agenda. In addition, the Memorandum of Understanding (MOU) with the Alliance of International Science Organizations (ANSO) was signed as the basis for joint activities between the two organisations in March 2023. APN made courtesy calls to the Asia office of the Stockholm Environment Institute (SEI) in Thailand in October 2022, and to the National Research and Innovation Agency of Indonesia (BRIN), the United States Global Change Research Program (USGCRP) and the National Science Foundation (NSF) in May 2023.

iii. Collaborative Projects with IGES

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

(4) Contribution at Environmental Forums

i. Contribution at International Science-Policy Forums

APN attended the UNFCCC COP27 in Sharm El Sheikh, Egypt, in November 2022 and had the opportunity to chair, moderate and present at two side events, including an event at the Japan

Pavilion with AP-PLAT, IGES and NIES, titled “Formulation and Implementation of National Adaptation Plans (NAPs) in the Asia Pacific – Establishing a System to Promote Adaptation Towards the Achievement of the Global Goal on Adaptation (GGA).” APN also made presentations and contributed to discussions in a number of other international forums held in person/online/hybrid.

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 of environmental issues among the residents of Hyogo Prefecture. In FY2022, APN and the Graduate School of Disaster Resilience and Governance, University of Hyogo, jointly organised a hybrid-style session on "Climate Change and Disaster Reduction" at "Bosai Kokutai 2022" in HAT Kobe in October 2022. In addition, APN and the Hyogo Prefectural Government jointly organised a hybrid-style seminar on "SDGs International Forum for Realising a Decarbonised Society" in Kobe in December 2022.

3. 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 FY2022, JISE implemented the following activities, including training and information collection and provision on forests, nature regeneration and ecology.

As a summary of its financial status, overall revenue in FY2022 was JPY 57.6 million and the expenditure was also JPY 57.6 million, resulting in a good balance. The revenue includes JPY 11,640,940 by reversal of the JISE Operating Funds.

(1) Research Projects

On the international research front, JISE, with receiving external grants, planted pot seedlings of the local potential natural vegetation component species identified through ongoing vegetation surveys and forest conservation research mainly in Malaysia and Kenya, investigated their growth behaviour, analysed the growth data of regenerated forests based on the planting data obtained, and published the results in international journals and at the Ecological Society of Japan. The results were published in international journals and at the Ecological Society of Japan. In order to promote the restoration of degraded forests and the support to the reforestation of village forests, JISE identified useful tree species that contribute to local reforestation and specifically promoted the breeding of local seedlings in consideration of biodiversity, in collaboration with IGES Biodiversity and Forests Area (BDF). In Lao PDR, JISE developed and implemented an analytical method for elementary school children's experience of nature and their relationship with living organisms, and worked to support learning programmes and collect drawing data for approximately 2,400 children at 41 elementary schools. In the Philippines, JISE focused on reforestation activities that had been carried out in collaboration with ethnic minorities and their supporters at a former mine development site, and worked to evaluate the benefits gained by the residents.

On the domestic front, JISE carried out research on environmental conservation forests, which included 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 “JISE REPORT.”

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 Nagano, Akita and Iwate.

(2) Capacity Building

JISE conducted an "Environmental Study" programme to promote understanding of the immediate environment through observation of nature and living creatures. Based on the practice of project, JISE developed teaching materials and programmes to promote environmental understanding, and published the results in the journal. From the viewpoint of preventing the spread of COVID-19 infection, the first half of FY2022 was held online, with many children participating, and in the second half of the fiscal year, face-to-face learning sessions in the open air were resumed. In addition, research staff members participated as instructors in hands-on classes at elementary schools in Yokohama City and in the Akishima City environmental activity leader training course.

(3) Interaction

JISE Open Forum was held online in June 2023 under the title "Research and Practical Approaches to Global Warming" aiming to provide an opportunity to reconsider global warming from both ecological and engineering perspectives. The theme of the open workshop was "Creating Satoyama in Cities: "Nature Positive" and Future Green Public Policies based on local practices." The speakers were JISE researchers and external parties, who reported and discussed their past activities in the region. In both cases, online presentations were used to attract participants from a wide range of fields, including students, business representatives, and residents of remote areas.

(4) 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 publication "JISE REPORT" (two issues), which reports field surveys and practical activities for ecosystem conservation.

Annexed Detailed Statements

As there are no "Important Matters Supplementing Business Description" as stipulated in Article 34, Paragraph 3 of the Enforcement Regulations of the Law Concerning General Incorporated Associations and General Incorporated Foundations, no annexed detailed statements are included.