The Integrative Strategic Research Programme of IGES for the Sixth Phase (ISRP6)
External Review Report

September 2017

IGES

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1. Introduction to the Sixth Phase review

In order to ensure accountability of each research project and provide feedback to improve overall effectiveness, IGES has traditionally conducted a review at the end of each Phase by external experts.

The IGES external reviews examine to what extent studies and activities conducted in the Integrative Strategic Research Programme for the Sixth Phase (ISRP6) satisfied the original targets and intentions of the studies, and what meaningful impacts have been created in important policy processes. Also important, is how achievements made and lessons learnt in the ISRP6 could be properly reflected into the implementation of the following/current Phase (ISRP7, FY2017-2020).

In later phases at IGES, the scope has expanded significantly beyond research outputs to incorporate more discussion about engagement in important policy processes, networking and partnership with other stakeholders and research institutes, and generating impacts. The IRSP6 introduced a very clear visions for IGES to become an agent of change to contribute to making Asia and the rest of the world more sustainable. This made it clear that impact generation is IGES's most important objective. In addition, IGES's activities are guided by its *Medium-to-Long Term Strategy 2016-2025 (MLS)* approved by the IGES Board of Directors and Trustees in February 2016 with the following objectives:

- To elaborate the vision of the IGES, reconfirming the basic principles prescribed in the Charter for the Establishment of IGES, and its mission taking into account the value proposition of the institute;
- To set medium-to-long term goals for priority research areas, with a view to making significant progress in contributing to social transition through fulfilling the IGES mission, taking into account global and regional trends related to each area;
- To establish organisational strategies to meet the medium-to-long term goals; and
- To provide directions for an enhanced institutional basis to support the implementation of the strategy.

In the Sixth Phase review, an emphasis was made more on IGES-wide performance on impact generation and productivity rather than that of individual research units, and in so doing, reviews of the sections that are coordinating IGES-wide activities (Programme Management Office or PMO) and resource management (Secretariat) are included. The review was conducted soon after the ISRP6 was completed to retain the results as freshly as possible; however, there are a couple of sections where there are some details lacking due to key staff's absence after the entry of the new Phase.

2. Review Procedure

IGES prepared a self-evaluation report in which the results of the overall achievement were summarised by the PMO, accompanied by the summaries of individual groups' self-evaluation (Appendix B). The self-evaluation report was developed based upon the mid-phase review conducted internally in January-February 2015 as well as the FY2015 and FY2016 IGES Business Reports. The mid-Phase review report identified major impacts and outcomes generated in the first two years of the Sixth Phase (as of January-February 2015) and provided each group with recommendations for the remaining period. This process also brought about a few changes in research project team organisation within the group to respond to recommendations in part. The FY2015 and FY2016 Business Reports provided the details of the annual achievements made in the last two years.

The reviewers were provided with this self-evaluation report along with the ISRP6 plan that was approved by the Board of Directors and Trustees prior to the launch of the ISRP6, IGES Medium-to-Long Term Strategy 2016-2025 (MLS) and its annual reports (FY2013-2015) as a reference, as well as a few suggested questions for the review (Box 1). The reviewers examined the contents, and conducted the oral review sessions at IGES. The results of the oral review were summarised below and presented in the following section as the main part of this review report.

Box 1: Suggested questions for the review by IGES

I. Overall

Mission, strategy and priorities

- Are we headed in the right direction? Are we taking the right approaches?

Impact & outcome generation

- Overall impacts on international, regional, domestic policy processes? Are we responding to demands of policymakers & stakeholders?
- Are we partnering with the right stakeholders? Effective communications?
- Quantity and quality of outputs
- Effectiveness of use of financial and human resources

II. Group-specific

- Are we taking an effective influence strategy for intended impacts or outcomes?
- Are we responding to demands of targeted policymakers & stakeholders?
- Are we partnering with the right stakeholders?
- Are we influencing targeted policymakers sufficiently? Impacts on other targeted stakeholders? Monitoring the progress/results sufficiently?

(Above questions were modified from the previous review session.)

The external reviewers were selected with the criteria and approved by the senior management. The selection criteria include: (i) those who are independent and have neither held any position at IGES nor have been involved in any IGES projects in the ISRP6 (*neutrality*); those who are knowledgeable and professionally involved in the fields of sustainable development, environment or associated areas (*familiarity with the topics*); and those who hold positions to supervise or advise in the organisations (*management experience*). The list of reviewers is presented in the Appendix A.

The review session was held on 12 September, 2017 with the participation of the IGES Directors, Counsellor, and Special Research Advisor as observers. The review session agenda was suggested by IGES (Appendix A) and the three sessions were moderated by the IGES Senior Fellow. Overall achievement was presented with related statistics summarised by IGES (Introductory Session), followed by three thematic achievement by IGES research groups, namely, climate change, natural resources and ecosystem services, sustainable consumption and production, and SDGs-related activities (Session 1-3). Institute-wide operations and management were also discussed (Session 4). At the end of each session and Concluding Session, the Moderator summarised the key points raised in the discussion, and asked the external reviewers to see if any critical points were missing. The key findings and assessment were drafted with the aid of SMO and finalised by the reviewers (Section 3 of this report). The final review report was also presented at the IGES Board of Trustees held on 30 September 2017 at IGES.

3. Results of the review

The results of the review are presented in two sections: (i) overall matters and (ii) specific results in each thematic session (Session 1 to 4). For the former, although some of the comments and suggestions were expressed in a particular session, what is considered beneficial and useful for all IGES staff to commonly understand and take appropriate actions in the 7th Phase are put together and synthesised in a few categories. For the latter, mainly major comments and suggestions were summarised. It was suggested in the Introductory Sessions by the IGES Director and Special Research Advisor (observers) that all IGES staff members learn from the lessons from the previous Phase, i.e., what was planned at the outset of the Phase, what has been achieved and what has not, and why, to improve their performance, making the best of this evaluation.

3.1. Overall Results

Reviewers generally recognised and appreciated IGES's efforts in bringing about a transition to a sustainable society and acknowledged the overall achievement through shifting from output–based to more result/impact-oriented

activities. As there were quite a few discussions on how IGES should pursue making impacts and how to improve these, the overall results are summarised in two sections: (i) main comments and suggestions for effective impact-making, (i) main comments and suggestions for impact evaluation and reporting, and (iii) other overall suggestions for IGES activities.

Main comments and suggestions for effective impact making

- IGES is dealing with a vast range of research areas (in the case of this review, they were grouped into climate change, natural resources and ecosystem services, sustainable consumption and production, and SDGs-related areas) and therefore issues are quite extensive. Further efforts in sharpening focuses in each thematic area and identifying clearer pathways of impact-making from output or activity-level are advised.
  - ✓ There were variations across research groups in distinguishing outcomes/impacts from outputs.
  - ✓ To become a leading agent of change, developing or having a clearer theory of change will be useful to shape IGES activities. This may help formulating more systematic approaches in impact-making at IGES. Consequently, modifying the mode of operations or ways of enforcing/operationalising such approaches may need to be considered.
  - ✓ Each staff member should raise their awareness as to which part of the impact-making process they are working on.
- Synergies and collective efforts across groups are expected and encouraged for effective impact-making.
  - ✓ Combinations of activities or collaboration can create additional value-added in a cost-effective manner by leveraging IGES's wide-ranged activities.
  - ✓ Strategic Research Fund (IGES's own budget earmarked for IGES's unique research activities) can facilitate formulating such collaboration.
- Activities that conduct transformative research on the ground can be considered for impact-making.
  - ✓ Wuppertal Institute is one of the organisations leading in this area and is already conducting experimental projects ("real world laboratory"). IGES Directors have been invited to participate in the discussion and share progress at IGES.
  - ✓ Creating tools, for instance, used to be commonly considered as an objective at a research institute, but this may not be enough if impacts are in question. The same goes for impact-making through pilot projects. Impact-making may need further attention and follow through until it is materialised.
- IGES can grow to play a key role by acting as secretariat for initiatives where funds come in. IGES has already been serving such roles in several initiatives, but the scale has not been reached in the same way as by other organisations like WRI.
- It is worthwhile to revisit IGES mission to see to what extent the projects implemented by IGES made impacts on achieving sustainable society in Asia.
- IGES can consider a better packaging of its achievements to improve visibility.

Main comments and suggestions for impact evaluation and reporting

- The impacts have been reported in five categories (i.e., through proposals for improved policy, planning, or practice; (ii) through provision of guidelines; (iii) through provision of tools; (iv) through network operation; and (v) through pilot projects), yet some of them are considered generated through combinations of these elements. Studying reporting methods of impacts beyond these five categories is suggested to more clearly capture and report the impacts. Analysing the factors behind the successful impact cases is also useful.
  - ✓ Types of impacts may vary depending on the types of activities.
  - ✓ Agenda setting, awareness raising, and invitations as speaker at the important events can be also considered as impacts.
  - ✓ Qualitative indicators should be also considered in addition to quantitative ones.
- Evaluation of goal setting itself (intended impacts and others) is also useful.

Suggestions for IGES activities

- IGES can consider taking up major emerging challenges such as rising population, economic growth, and global political landscape.
- IGES should consider addressing the issue of equity in its activities.
  - ✓ Equitable distribution of benefits is of global importance in achieving sustainable society. In so doing, environmental philosophy may come in the scope.

- Lessons from Japan's experience can be useful in Asian countries' pursuit of sustainable development with a careful consideration of their applicability in a local context.

3.2. Specific Results at the Group Level

This section presents main comments or suggestions to the achievement or activities at the group level raised in the thematic sessions (Session 1 to 4). The reviewers generally felt that IGES engaged in a large number and wide range of activities and gave an overall favourable evaluation in their achievement (Session 1-3). They also acknowledged the general management-related challenges and IGES's countermeasures that are being taken.

3.2.1. Climate change-related activities (Session 1)

Main comments and suggestions

- Statement by a group of scientists organised by the LCS Network to COP21, a research paper on coal-fired power plants, Japan 2050 Low Carbon Navigator are noticeable examples of impact-making.
- A number of JCM-related projects also made significant impacts with contributions from IGES.
- It would be nice if IGES can tell how much progress has been made on the readiness for climate change in Asian countries. IGES noted that the accumulated knowledge and lessons from CDM is useful in implementing JCM and contributing to the Paris Agreement implementation through them.
- IGES made significant impacts on the private sector (industry groups) and local governments. IGES's swift decision to focus on non-state actors and to work with them was a successful move.
- IGES has been well-recognised in the area of climate change. Better packaging can improve the visibility of its achievements.
- IGES is expected to show a new framework to lead climate policies.

3.2.2. Natural resources ecosystem services-related activities (Session 2)

Main comments and suggestions

- REDD+, the projects newly funded by the Ministry of Agriculture, Forestry, and Fisheries, JCM guidelines, forestry governance, hosting and operating IPBES TSU-AP, water management projects with the UNESCO and World Bank, integrative projects on adaptation and disaster risk reduction are noticeable examples of impact-making.
- Promotion of integrative actions within the group under the umbrella of a landscape approach is appreciated.
- In some cases, how outputs led to impacts does not seem very clear. Having a clearer target audience is also advised.
- In general, the activities by this group seem so extensive that the name of the group (natural resources and ecosystem services) may not capture the whole range of activities. The larger the scope of the work, the more important that the group identifies its competitive edge.
- The research results from this group may be useful for revitalisation of rural economies in Japan although the group's activities are more focused on issues overseas.
- The group can further develop competence building upon the experience of science-policy research activities under the overarching bridge (landscape approach).

3.2.3. Sustainable consumption and production and SDGs-related activities (Session 3)

Main comments and suggestions

- IGES made a significant achievement in these areas. Mainstreaming resource efficiency, collaboration with UNEP. The report with Global Compact Network Japan (GCNJ) made a good impact on civil society.
- IGES should recognise the importance of paying more attention to the issue of inequality and empowerment of the stakeholders in achieving SDGs. IGES noted that it has been working on the issues such as gender as

one example of social co-benefits and green jobs, and developed a tool to assess synergies/trade-offs among activities achieving SDGs.

- Regarding the activities related to education for sustainable development (ESD), IGES noted that the component was moved from IPSS to PMO during the Phase, and the issue was addressed in a broader context of capacity development rather than in a narrow definition of education.
- To the question about the meaning of IGES acting as knowledge catalyst (SCP), IGES explained it with example activities in the 3R where IGES facilitated selection of key indicators with IGES's technical knowledge. It also noted that the group plans to focus on resource efficiency and transition to sustainable life style where IGES's competences match.

3.2.4. Institute-wide operations and management (Session 4)

Main comments and suggestions

- Substantial growth during the Sixth Phase in terms of both quantity and quality of the achievement was acknowledged. Impacts on non-state actors (the private sector, local governments, and media) were appreciated. Efficiency in producing outputs was also acknowledged. IGES noted that a certain level of productivity (publications) is considered important to maintain the visibility.
- It is important to increase those funds that are more flexible. Commissioned work is useful, but it has its limitations. The proposed project FVA would be helpful in selecting quality funding sources. Flexible funds can motivate researchers and improve their satisfaction. Individual donors can be considered as additional funding sources.

Appendix A: List of the Integrative Strategic Research Programme of IGES for the Sixth Phase (ISRP6) External Reviewers and Review Session Agenda

List of External Reviewers

(Alphabetical order)

- Dr. Tomonori Sudo, Associate Professor, College of Asia Pacific Studies, Ritsumeikan Asia Pacific University
- Dr. Tsuneo Takeuchi, Professor, Department of Social and Human Environment, Graduate School of Environmental Studies, Nagoya University

Review Session Agenda

12 September, Tuesday

Moderator: Dr. Hidefumi Imura, IGES Senior Fellow

9:15 Introductory Session: Overall achievement in the ISRP6
- Presentation by Mr. Hideyuki Mori, President of IGES (10 minutes)
- Q&A

9:45 Opening remarks
- Prof. Kazuhiko Takeuchi, Chair, IGES Board of Directors

9:50 Session 1: Review of climate change-related activities in the ISRP6
- Opening talk by Dr. Yuji Mizuno, Climate and Energy (10 minutes, including related activities by KRC, Green Economy, IPSS, KUC, and BRC)
- Discussion (30 minutes)
- Summarising discussion (10 minutes)

10:40 Coffee break

10:50 Session 2: Review of natural resources and ecosystem services -related activities in the ISRP6
- Opening talk by Dr. Henry Scheyvens, Natural Resources and Ecosystem Services (NRE) (10 minutes, including activities related to climate change adaptation and biodiversity by NRE and BRC, TKY and the IPBES TSU-AP)
- Discussion (30 minutes)
- Summarising discussion (10 minutes)

11:40 Session 3: Review of sustainable consumption and production (SCP) and SDGs-related activities in the ISRP6
- Opening talk by Dr. Yasuhiko Hotta, SCP and Dr. Eric Zusman, Integrated Policies for Sustainable Societies (10 minutes, including city-level activities by KUC, BRC, and City Taskforce, and SDGs- related activity by Green Economy)
- Discussion (30 minutes)
- Summarising discussion (10 minutes)

12:30 Lunch

13:10 Session 4: Review of institute-wide operations and management in the ISRP6
- Opening talk by Mr. Hideyuki Mori, President of IGES (10 minutes)

Discussion (30 minutes)

Summarising discussion (10 minutes)

14:00 Concluding Session

Key findings of the ISRP6 by PMO

Comments from the external reviewers

14:30 Closing remarks

Prof. Kazuhiko Takeuchi, Chair, IGES Board of Directors

Overview of the Session structure

Unit ↓	Climate Change-related (Session 1)	NRE-related (Session 2)	SCP & SDGs-related (Session 3)	Operations & mng (Session 4)	Concerning SDGs (Ref.)
CE	Mitigation				SDG13, 7
NRE		Forestry, Water, Biodiversity, Resilience, Adaptation			Various SDGs
SCP			Resource efficiency, 3R, 10YFP, waste management by IETC		SDG12
GE	Private sector (J-CLP), Research network (LCS, etc.), Tool (2050 Navigator), etc.		SDG Indicators		SDG8 and others
IPSS			SDG Governance, Co-benefit, City-level actions, Climate-gender		Various SDGs
KRC	Low-carbon tech transfer				SDG13
KUC	City-level actions (low-carbon)		City-level actions Waste management		SDG11, 13
BRC	Activities by UNFCCC-RCC	Adaptation, Resilience	City-level actions		SDG11, 13
BJN			Co-benefit/ Air pollution		SDG13
TKY		Biodiversity			Various SDGs
City Taskforce			City-level actions		SDG11
PMO				Operations, Networking	-
SEC				Management	-

[UNIT NAME]
CE: Climate and Energy; **NRE**: Natural Resources and Ecosystem Services; **SCP**: Sustainable Consumption and Production; **GE**: Green Economy; **IPSS**: Integrated Policies for Sustainable Societies; **KRC**: Kansai Research Centre; **KUC**: Kitakyushu Urban Centre; **BRC**: Regional Centre in Bangkok; **BJG**: Beijing Office; **TKY**: Tokyo Office; **IETC**: IGES Collaboration Centre with UN Environment on Environmental Technology; **UNFCCC-RCC**: UNFCCC Regional Collaboration Center; **PMO**: Programme Management Office; **SEC**: Secretariat

Materials provided to the External Reviewers

- Self-evaluation report prepared by IGES (Appendix B of this report)
- *ISRP6 plan, Medium-to-Long Term Strategy 2016-2025 (MLS)*
- IGES Annual report (FY2013-FY2015)

Appendix B: Integrative Strategic Research Programme of IGES for the Sixth Phase (ISRP6) Self-evaluation Report

This report was prepared by IGES for the ISRP6 external reviewers. Section 1 presents the institute's overall performance with key statistics as indicators (Section 1.1), selected impacts that IGES observed from its activities in each year (Section 1.2), and an overview of resource management (financial and human) during the Phase (Section 1.3). The last section also provides a summary of the third-party assessment on IGES's operations and management conducted in FY2016.

Section 2 presents group-level results for each group. The section provides original goals set in the ISRP6, intended impacts or outcomes, self-evaluation and recommendations at the mid-Phase review, followed by the final self-evaluation at the end of the Phase.

1. Overall performance of IGES in the ISRP6

1.1. Key statistics

1.1.1. Think Tank Ranking

International recognition of IGES is an indicator for IGES to assess how its work as an Agent of Change is recognised. As attention has been paid at IGES to focus on impact generation, it is expected that there will be more chances of getting better recognition, building partnerships, and/or receiving external funds.

The University of Pennsylvania, United States (US), released its annual ranking of global think tanks[1] for several important areas, including the environment. IGES was ranked 38th among environmental think tanks across the world in 2016, the same as 2015. This ranking was the highest for Japanese institutions (Table 1).

The International Center for Climate Governance (ICCG) in Europe ranked IGES 37th in the listing of world climate think tanks in June 2016,[2] which was the highest ranking among all Japanese institutions.

In June 2017, IGES was ranked 7th globally, and first in the area outside of North America and Europe.[3] According to an analysis of the indicators used in the ranking which were reported to the ICCG survey, there were five main likely factors in the significant increase in the ranking. First, there was an enhanced effort to more comprehensively report the number of organised events, which substantially increased. In particular, this year the number of unofficial side events organised or co-organised by IGES at the UNFCCC COP was reported in addition to the number of official side events. Second, the number of IGES peer reviewed publications increased, and the number of their citations increased significantly, as seen in Table 2 below. Third, the performance of the IGES website based on the Alexa ranking improved after upgrading the output database. As of this writing IGES' website is ranked 202,000 which shows as an improvement of 42,000 places. Fourth, IGES established a social media account (Twitter). Fifth, the list of activities and networks on the IGES profile was updated.

[1] 2016 Global Go To Think Tank Index Report (Jan. 2017)
[2] 2015 ICCG Climate Think Tank Ranking (June 2016)
[3] 2016 ICCG Climate Think Tank Ranking (June 2017)

Table 1: IGES in Rankings: FY2012 - FY2016

	FY2012	FY2013	FY2014	FY2015	FY2016
GLOBAL GO TO THINK TANK by University of Pennsylvania (Published in January of the same fiscal year)	48	48	38	38	38
ICCG Climate Think Tank Ranking by the International Center for Climate Governance (Published in July of the following fiscal year)	-	15	22	37	7

1.1.2. Publications

Outputs themselves are not usually considered to be impacts, but are important as tools for generating impacts. IGES produces various forms of publications based upon its strategic research and other studies. The total number of publications, including peer-reviewed (internally and externally) papers, articles and/or book chapters, contract-based papers, and others has been maintained within a certain range in the last four years (Figure 1). This is approaching four publications per one researcher.

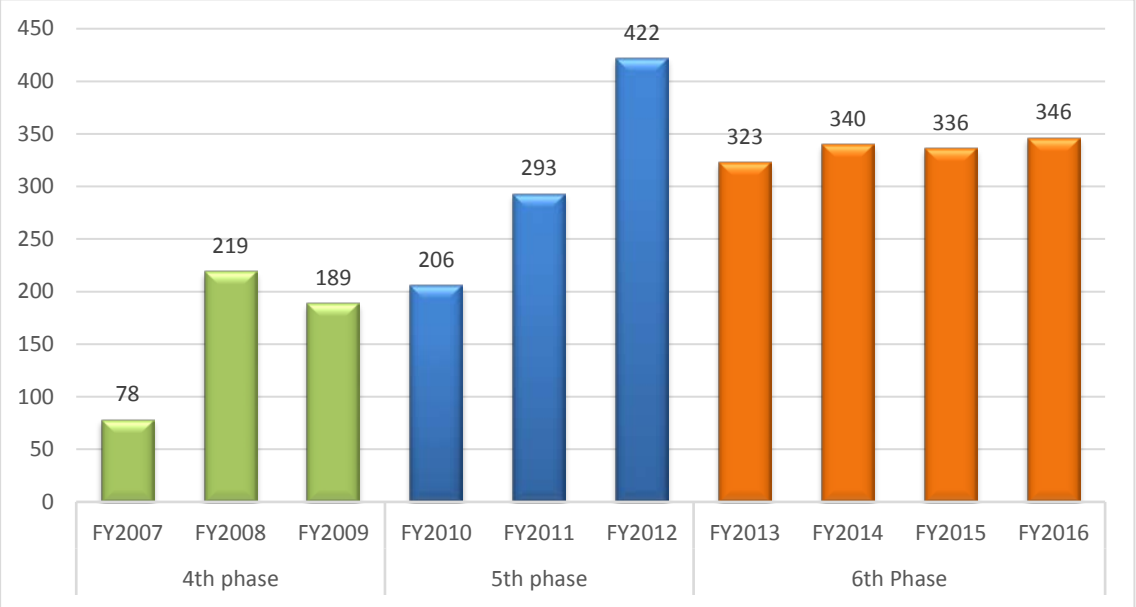

Figure 1: IGES Publications (FY2007- FY2016)
Note: FY2016 figures cover 15months (April 2016 – June 2017.)

IGES distinguishes "quality" policy publications, which undergo more extensive review procedures compared to others, as highlighted in Figure 2 below. These include IGES policy briefs, policy reports, and chapters contributed to similar non-IGES publications, excluding peer reviewed journal articles. ISRP6 set a target regarding the overall production of quality policy publications at 40 per year, and 160 for the phase. The actual numbers of such publications in the Sixth Phase were 46 in FY2013, 38 in FY2014, 71 in FY2015, and 37 in FY2016, and the total number of quality policy publications was 192 in the Sixth Phase. Thus, the overall target set by the ISRP6 on the number of quality publications was exceeded although this was largely due to the results of FY2015, as the annual target was not quite achieved in two of the four years.

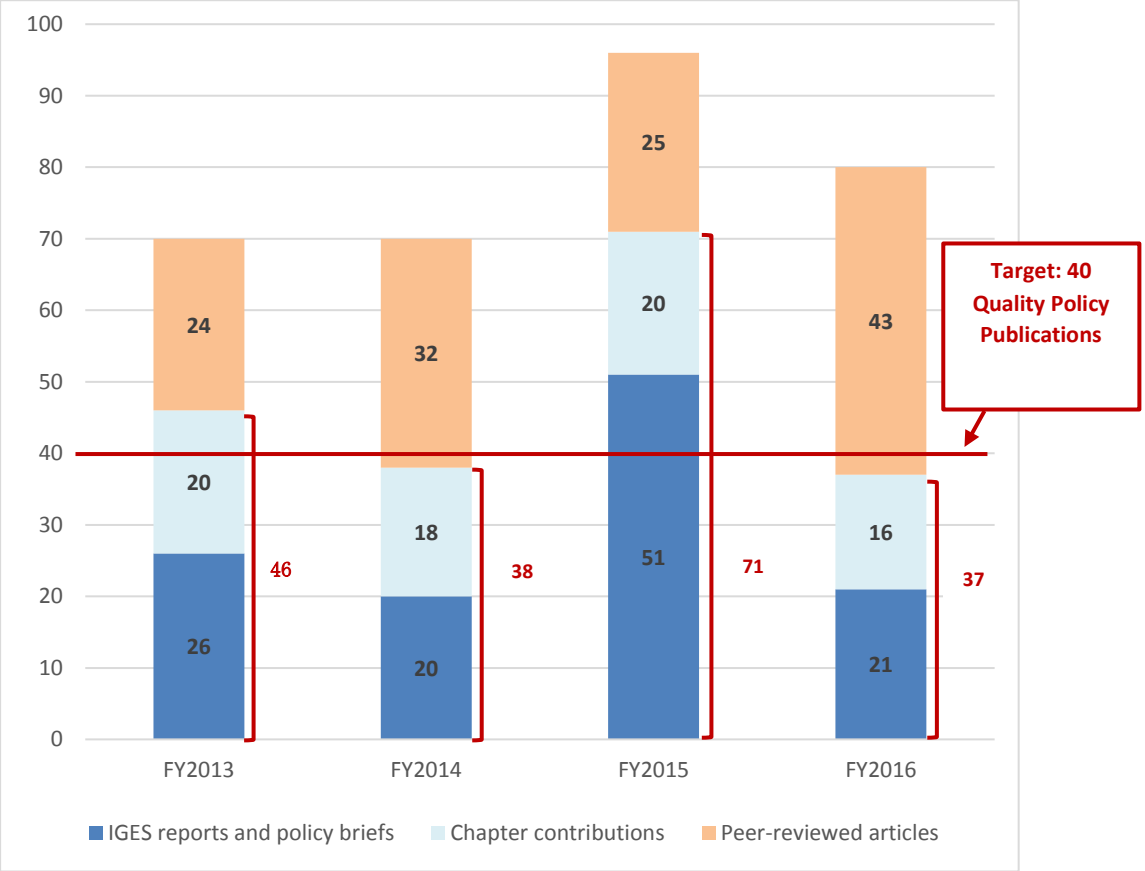

Figure 2: Number of 'Quality Publications' and Peer-reviewed Articles (FY2013 - FY2016)
Note: In FY2015, IGES reports included White paper chapters and Flagship chapters.
FY2016 figures cover 15months (April 2016 – June 2017.)

The number of academic peer-reviewed journal articles published was 24, 32, 25, and 43 for each of the four years of the Sixth Phase, totalling 124 (See Figure 3). There may be a trade-off between the number of academic papers and policy papers.

The substantial increase in FY2015 in the number of quality policy papers could be attributed to the publication of one White Paper and two flagship papers, which included a significant number of chapters. This indicates the importance of a strong commitment made by the institute to produce such substantial publications in time for major events and key international negotiations.

The decline in FY2016 may be explained by a shift towards other types of IGES outputs, in particular shorter policy papers, which could be produced more quickly such as issue briefs, briefing notes, and commentaries, as well as new types such as videos and e-learning materials, as well as a small decline in the number of researchers as shown in Figure 14 on page 29.

In the 7th Phase, a new simplified publication target will be used, namely "written policy and research outputs," aiming to produce 100 per year. On the one hand, the new target is more focused than total outputs, and excludes certain publication types such as commissioned reports, non-peer reviewed articles, and other smaller publication. On the other hand, it is broader and more flexible than quality policy publications, adding research reports, discussion papers, working papers, and issue briefs, so it can be interpreted as a kind of standard or average written output, excluding peer reviewed articles, which have a separate target of 30 per year. Figure 3 below presents the Sixth Phase figures for the new 7th Phase targets, indicating that an average of 88 "written policy and research outputs" and 31 peer reviewed journal articles have been produced each year over the last four years.

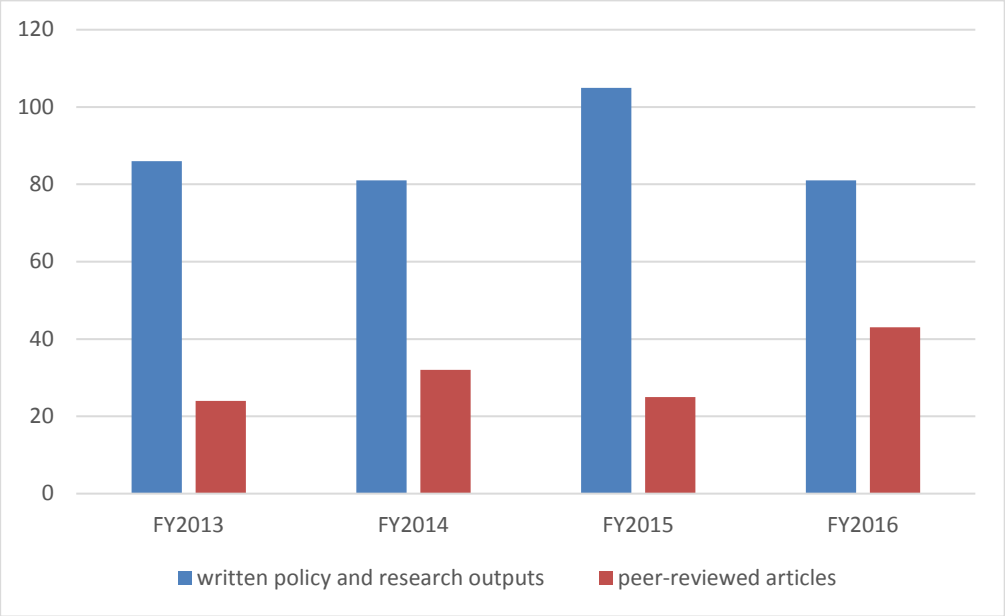

Figure 3: Sixth Phase Written Policy and Research Outputs
Note: FY2016 figures cover 15months (April 2016 – June 2017.)

The increased quality of IGES research has been demonstrated in several ways. For example, IGES researchers have steadily produced peer reviewed journal articles, including some in prominent journals such as the *Journal of Cleaner Production, Energy Policy, Applied Energy, Environmental Science and Policy, Journal of Environmental Management, Climate Policy*, and others.

IGES researchers also have made substantial contributions to major reports of international organisations such as UNEP, UNESCAP, OECD, ADB, ILO, etc., as well as other prominent research institutes such as World Resources Institute (WRI) and Adelphi. In some cases, these reports or outputs have been jointly published with IGES.

In addition, IGES was selected as one of the research institutes to contribute to JSTOR's new Sustainability Collection which includes the works of selected research institutes, NGOs and international organisations (i.e. grey literature) alongside a selection of relevant journals. Initially, the collection includes over 200 IGES publications (i.e. White Papers, Policy Briefs, Issue Briefs, Policy & Research Reports, and Working & Discussion Papers), and new publications will be regularly added to the collection. This will hopefully be a valuable way for IGES to better disseminate its publications to the academic community.

IGES has begun tracking citations of peer reviewed journal articles using both the Thompson-Reuters Web of Science (WOS) and Google Scholar. IGES produced a total of 425 peer reviewed articles between 1998 and 2016 which accounted for a total of 5,830 citations according to Google Scholar and 1,700 according to the WOS. The yearly increase in the number of citations between February 2016 and February 2017 was 436 as calculated by the WOS and 1,164 as calculated by Google Scholar, which is an increase of 34.5% and 24.9%, respectively from the previous 12 months. Other types of publications have also received a certain number of citations as calculated by Google Scholar, but it has not been practical to calculate these systematically.

Table 2: IGES Total Peer Reviewed Journal Articles and Citations Comparison of Web of Science, IGES Output Database, and Google Scholar 1998 - Present

	Number of Articles Cited			Number of Citations (WOS)			Number of Citations (Google Scholar)		
	As of Feb. 2016	As of Feb. 2017	Yearly Increase	As of Feb. 2016	As of Feb. 2017	Yearly Increase	As of Feb. 2016	As of Feb. 2017	Yearly Increase
Thompson-Reuters Web of Science (WOS)	157	187	+30	1,264	1,700	+436	2,958	3,824	+866
Articles from IGES Output Database but not included in WOS	68	97	+29	NA	NA		650	778	+128
Sub Total	**225**	**284**	**+59**	**1,264**	**1,700**	**+436**	**3,608**	**4,602**	**+994**
IRES	141	141	0	None were counted	None were counted	0	1,058	1,228	+170
TOTAL	**366**	**425**	**+59**	**1,264**	**1,700**	**+436**	**4,666**	**5,830**	**+1,164**

Notes:

- Citations as of Feb. 2016: Information based on WOS and the IGES Output Database was compiled in Jan. 2016. Google citations from IRES were compiled on 5 Feb. 2016.
- Citations as of Feb. 2017: Information was compiled on 1-3 Feb. 2017.

* International Review for Environmental Strategies (IRES) (2000-2007, all articles)

Notes on methodology

a. This count includes only peer reviewed journal articles. Books, White Paper Chapters, reports, book chapters, policy briefs, etc. are not included.
b. Articles by IGES Fellows, etc. are included in WOS and the IGES Output Database
c. All research related articles in IRES are counted (but not book reviews, etc.).
d. IRES articles are not included in the counts of WOS and the IGES Output Database

1.1.3. Download of IGES Publications

IGES has been expanding the "diversity" of its publications and outputs. Indeed, IGES is adding more success cases of working with non-state target stakeholders in particular, including sub-national governments, the private sector, the research community and media, and it is also gaining knowledge about what kind of knowledge products, tools or services are needed by these target stakeholders. It has been producing one of the most reliable databases on the clean development mechanism (CDM), and a similar database developed on reduction of emissions from deforestation and forest degradation, and conservation, sustainable management of forests and enhancement of forest carbon stocks (REDD+) in Asia. Furthermore, from FY2013 IGES started producing video materials of a few important selected IGES studies. Increasingly diversified products and services are also being made for the private sector and/or media, with which IGES collectively shapes and incorporates into messages to policymakers.

With the launch of an improved publications database in October 2016, publication download statistics measuring methodologies have changed. This change provides the institute with a ready ability to analyse the downloads IGES gets, and does a better job at eliminating automated traffic from the results. The monthly download chart (Figure 4) indicates the improved ability to remove automated traffic resulting in a lower baseline for download counting. It can be seen that download count averages were higher for FY2016 before the launch, and are lower since. February and March 2016 had abnormally high downloads, so it is difficult to predict the difference, but the improved system is beginning to improve downloads enough to negate the effect of the lowered baseline. The extra three months in FY2016 meant that overall

download counts were higher for the fiscal year, but April and May also surpassed the previous calendar year's download counts.

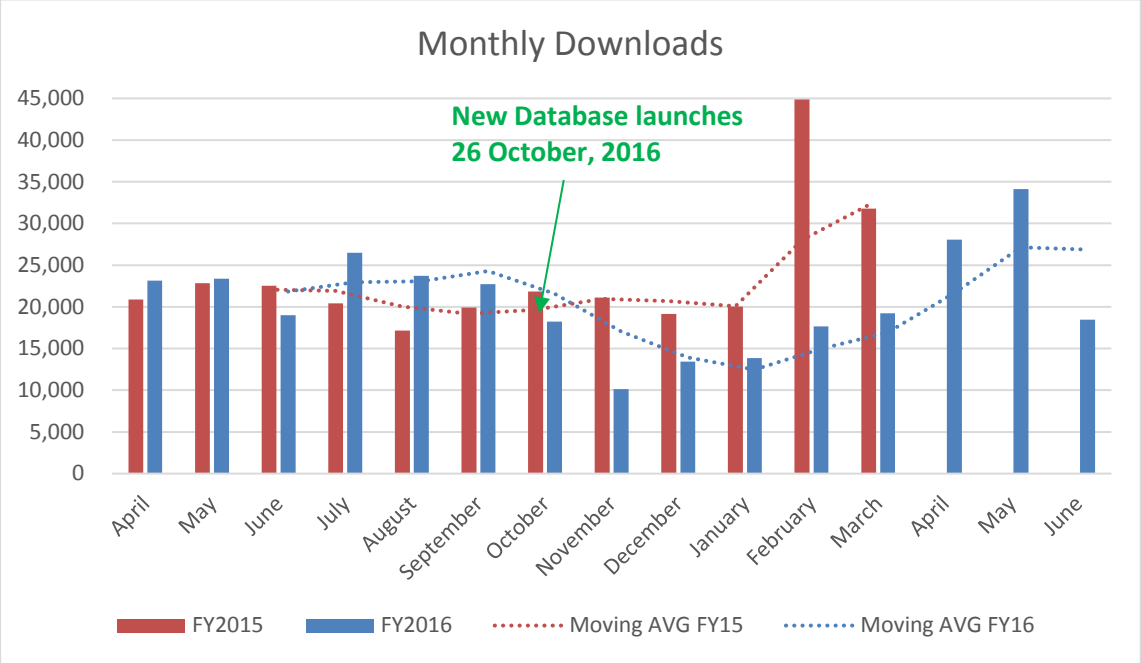

Figure 4: Downloads of IGES Publications (Monthly, FY2015-FY2016)
Note: FY2016 figures cover 15 months (April 2016 – June 2017.)

There were more total publication downloads in FY2016 (15 months) than in FY2015 (12 months). The methodology change removes more automated traffic sources which translated into a slight decrease when comparing just the first 12 months. The higher download counts in the last 3 months of FY2016 seem to indicate that improvements to the site, and other factors are already overcoming the new methodology's lower baseline. (Figure 5).

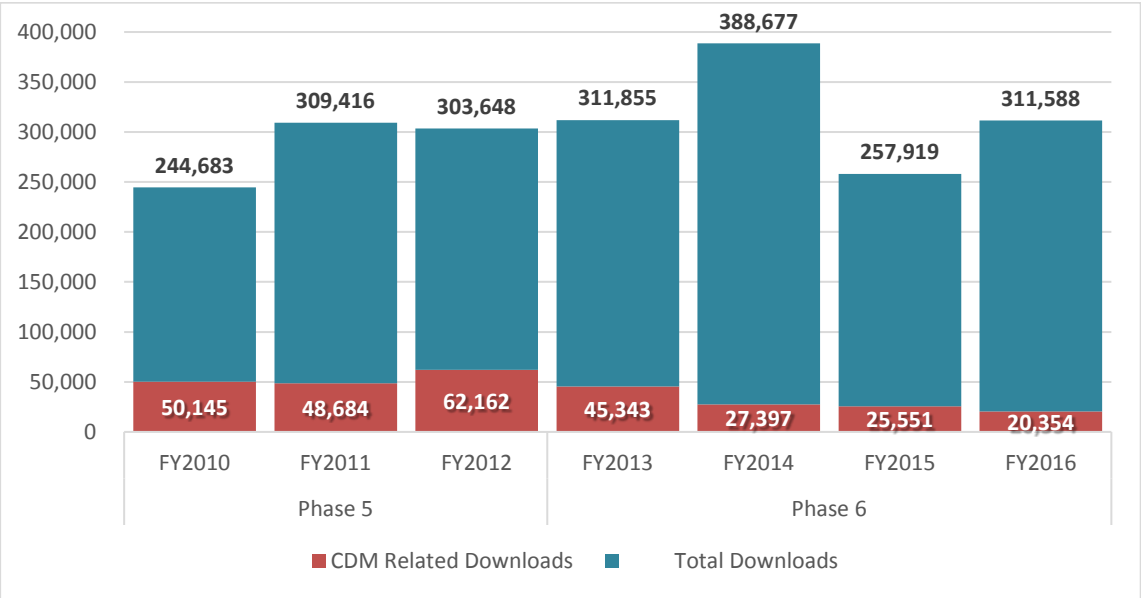

Figure 5: Downloads of IGES Publications (FY2010-FY2016)
Note: FY2016 figures cover 15 months (April 2016 – June 2017.)

Books, Reports, Chapters and Discussion/Working Papers make up about half of the publications downloaded from the publications database in both FY2015 and FY2016, but their share slightly decreased from being just over 50% of downloads to just under. In contrast, the share of downloads of Briefs, PR Materials, and Annual/Business reports slightly increased. (Figure 6 and 7).

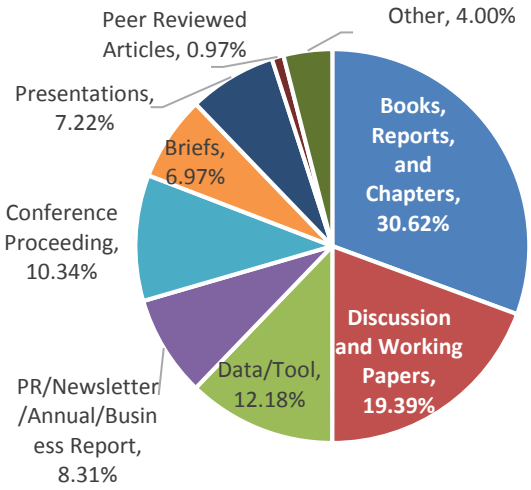

Figure 6: FY2015 Share of Downloads by Publication Type

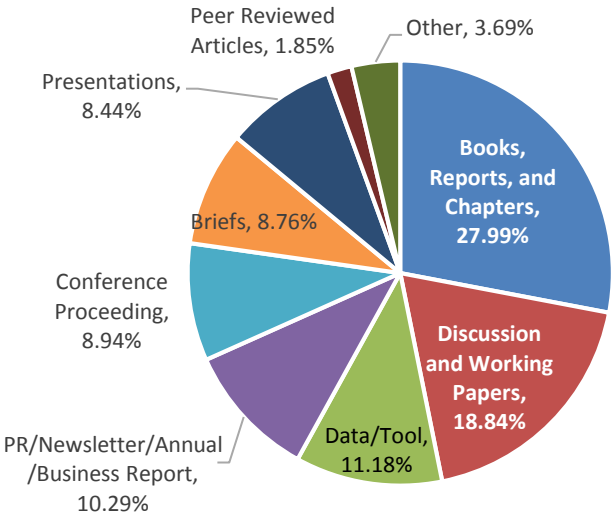

Figure 7: FY2016 Share of Downloads by Publication Type

The new publications database allows much more insight to be gathered into the download of IGES publications. As an example, the figures below show the top ten countries downloading IGES publications and sources for these downloads, respectively during the period after launching the new database (Figure 8 and 9).

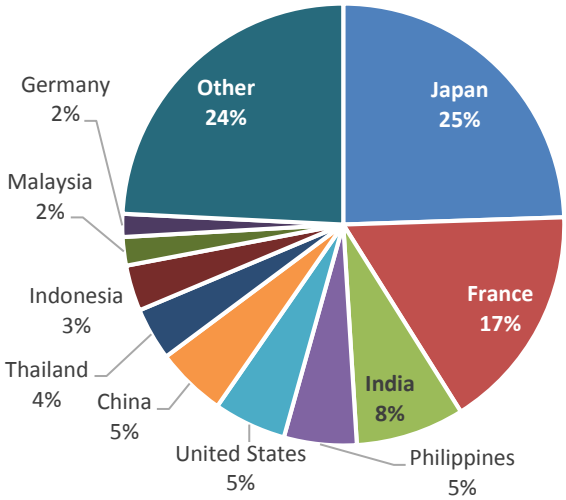

Figure 8: Downloads by Country (Oct 2016 – Jun 2017)

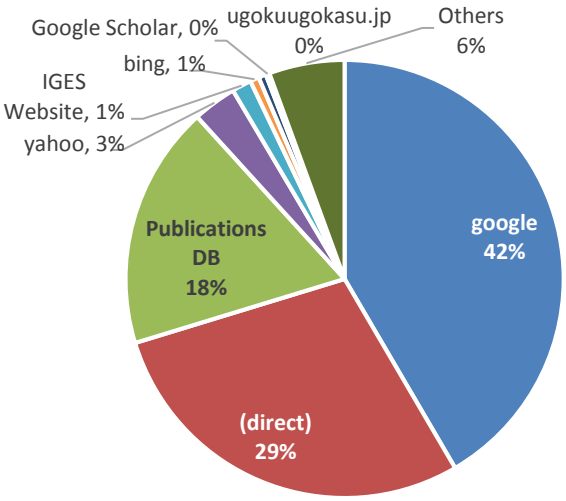

Figure 9: Download Sources (Oct 2016 – Jun 2017)

1.1.4. Media Coverage

Media coverage (newspapers, magazines, TV and radio broadcasts, web-media, etc.) in the Sixth Phase increased due to media outreach activities especially on the issues related to the adoption of the Paris Agreement at COP21 and the SDGs in 2015, as well as the Japan-China cooperation project for air pollution control (Tables 3 and 4). By taking timely and proactive actions such as holding media briefings and distributing press releases for COP21 and COP22 in collaboration with CE, Japan Climate Leaders' Partnership (Japan-CLP), and the Finance and City Task Forces, IGES succeeded in attracting much more media attention resulting in high exposure, especially in major Japanese newspapers such as the Nikkei, Yomiuri and Mainichi. For instance, media briefings held by IGES on 4 and 6 October 2016 were attended by journalists from the major media in Japan, and a special seminar in Tokyo in December 2016 featuring the latest reports from COP22 in Marrakesh early in the same month in cooperation with CE, Japan-CLP and ICLEI-Local Governments for Sustainability (ICLEI) received a record audience of 500 participants. Timely dissemination of IGES's briefing note on the 2016 US Presidential election and its implications for climate change also received several inquiries for further information, and researchers' comments on this report and ongoing actions by the US President against climate change were featured in several media articles. In April 2017, IGES, for the first time, organised a media briefing on business actions on SDGs in Japan. About 30 journalists participated resulting in more than 20 instances of media coverage. Moreover, the Beijing office conducted seminars and activities on Japan-China cooperation projects for air pollution control in Beijing that were featured in several major Japanese newspapers and introduced by many online newspapers in China. IGES website viewership has also been steadily increasing (Figure 10).

Table 3: Total Amount of Media Coverage in FY2012 - FY2016

Language	FY2012	FY2013	FY2014	FY2015	FY2016*
Japanese	90	104	117	199	236
Other languages	12	22	34	97	37
Total	102	126	151	296	273

Note: FY2016 figures are as of July 2017.

Table 4: Types of Media Coverage in FY2016

Language	Type	Number
Japanese	Newspaper	138
	Magazine	22
	Online	75
	TV	1
English	Newspaper	25
	Online	1
Other languages	Newspaper	11
	Online	0

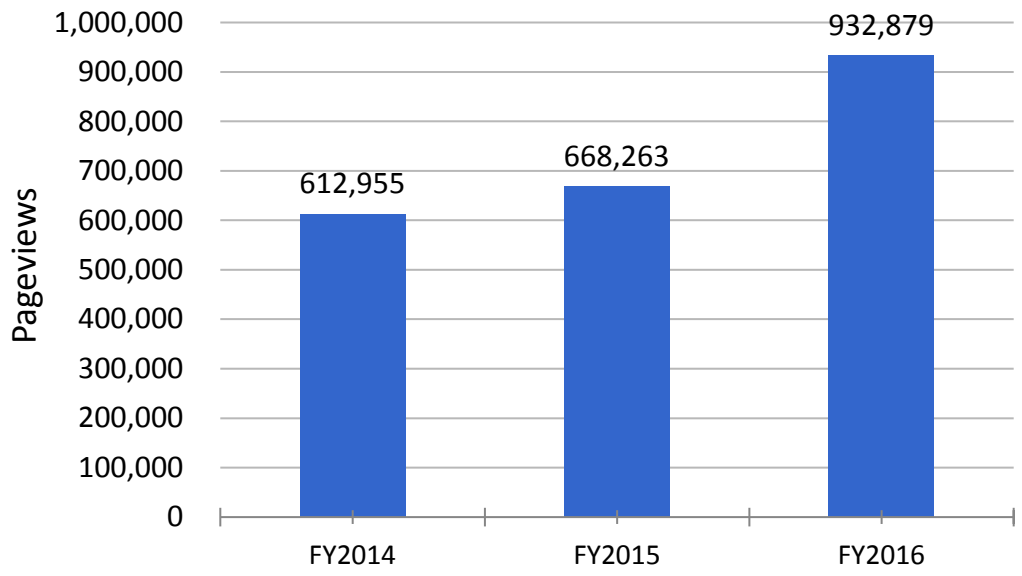

Figure 10: FY2016 IGES Website Total Pageviews

Note: IGES website include both IGES webpage and IGES publication page
FY2016 figure contains 15 months (April 2016 – June 2017)

1.1.5. Networking

IGES builds partnerships with key organisations for impact generation and organises the International Forum for Sustainable Asia and the Pacific (ISAP) to stimulate policy discussions with key stakeholders, both domestic and international. A number of participants increased drastically and ISAP2016 reached the highest of 1,100 participants. In the Sixth Phase, IGES finalised agreements with the International Council for Local Environmental Initiatives, International Labour Organisation, United Nations Economic and Social Commission for Asia and the Pacific, the International Institute for Sustainable Development (IISD), Rockefeller Foundation, and Tokyo City University; joined the United Nations Environment Programme Finance Initiative (UNEP FI) as a Supporting Institution; and assisted organising ISAP, and maintained communication with existing and emerging partner organisations (see details in the Outreach section).

Currently IGES hosts four UN collaborating centres, has partnerships with 11 international networks/initiatives that IGES hosts and/or serves as secretariat for, and has ongoing collaborative agreements or membership with nearly 40 organisations/initiatives (Annex 1).

1.2. Impact generation

In the preparation of its Medium-to-Long Term Strategy 2016-2025 (MLS), IGES developed a conceptual diagram on how impacts are generated by clarifying the relationships between outputs, outcomes and impacts. The impacts and outcomes are depicted as a series of rippled effects on key stakeholders, initiated by IGES outputs, typically IGES policy papers (Figure 11).

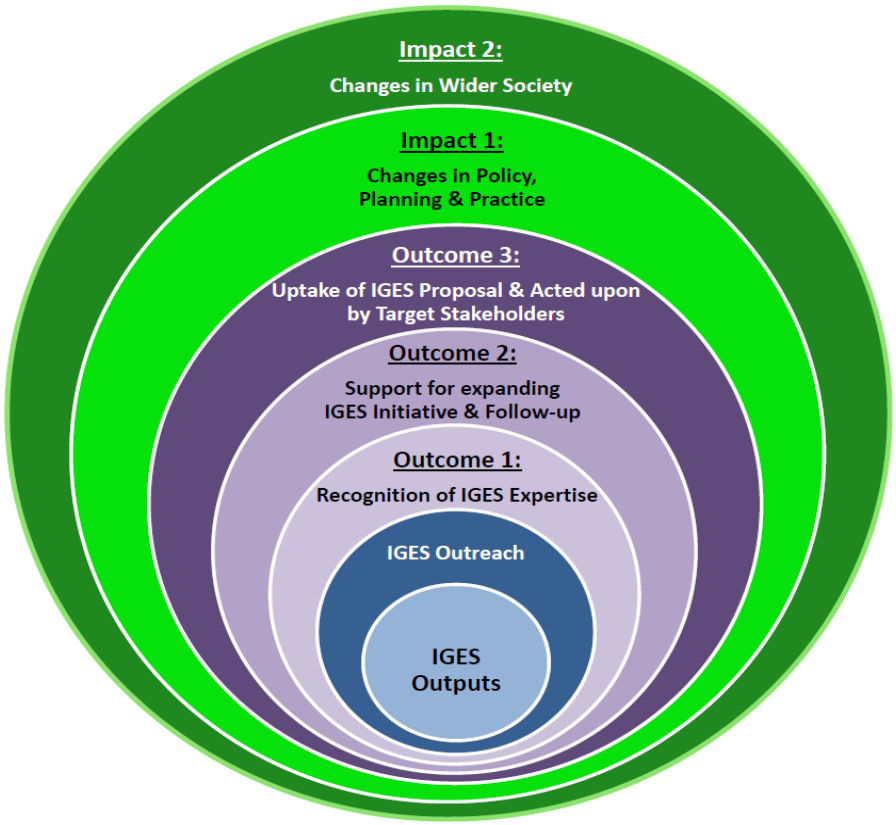

Figure 11: Rippled effects of IGES outputs with outreach activities

Each year during the Phase, all units identified and reported what they believed to be part of their influence or achievement, and the selected outcomes and impacts were summarised in IGES business report, annual reports and others to table at the IGES Board of Directors and Trustees meetings or to use to introduce IGES to key stakeholders or funding agencies. The Programme Management Office (PMO) categorised the reported impacts into five types according to what kind of products/services IGES provided to generate impacts: (i) through proposals for improved policy/planning/practice; (ii) through provision of guidelines; (iii) through provision of tools; (iv) through network operation; and (v) through pilot projects. The selected impact statements reported for each year during the ISRP6 are presented below. In an effort to report impacts with better clarity, the descriptions of impacts are more detailed in FY2015 and FY2016.

1.2.1. FY2013 Impacts

Type 1: Through proposals for improved policy/planning/practice

- **”Green Gift” Short-listed for Deliberation in the National Tax Reform Plan:**
  The IGES proposal ”Green Gift” provoked national level discussion on an innovative mechanism to mobilise personal assets for accelerating financing for low-carbon investment in Japan. It has

received considerable attention as a practical policy proposal and was included in items for deliberation in the FY2014 Taxation Reform Principles.

- **Draft UNEP SCP Strategy for Inter-UN-agency Coordination and Discussions:**
  UNEP mandated IGES to develop its Global Strategy for Sustainable Consumption and Lifestyles for the next 10 years for the use of inter-UN agency coordination and discussions.
- **IGES contributions to UNEP-PAGE's green economy-related assessment studies**
  IGES contributed to drafting and reviewing a total of 15 UNEP reports on green economy assessment, sectoral assessment and methodology development to support national-level decision making through policy processes of UNEP under the Partnership for Action on Green Economy (PAGE). Some of these reports have been used as inputs to drafting the national green economy strategies, such as in Kenya and Burkina Faso.
- **Japan Decided to Lead SLE Component of SCP10YFP:**
  IGES contributed to the Ministry of the Environment, Japan (MOEJ) in deciding on a major contribution to Sustainable Lifestyle and Education (SLE) component of the 10-Year Framework of Programmes on SCP (10YFP). Also the IGES president was requested to participate in the SCP 10YFP as a board member and representative of the Japanese government.
- **Thailand launched T-VER Program:**
  The Government of Thailand officially launched the "Voluntary Emission Reduction Program (T-VER)", for which IGES gave its support to government officials by way of a capacity building programme.

Type 2: Through provision of guidelines

- **UNFCCC EB on CDM Adopted Standardised Baseline:**
  The 76th meeting of the Executive Board of the Clean Development Mechanism (CDM) adopted the standardised baseline "Technology switch in the rice mill sector of Cambodia" which was established based on a joint proposal from the Ministry of the Environment of Cambodia and IGES.
- **Risk Assessment Guidelines for Chinese Tropical Hardwood Importers:**
  The IGES report "Managing forests as a renewable asset for present and future generations: Verifying legal compliance in forestry in Papua New Guinea" was used by The Nature Conservancy (TNC) to draft risk assessment guidelines for Chinese buyers of timber from Papua New Guinea (PNG).
- **A Core Set of Indicators on the 3Rs:**
  A core set of indicators on the 3Rs developed by IGES and its partners introduced at the 5th Regional 3R Forum in Asia and the Pacific. The indicators will serve as the basis for 3R policy development and implementation in respective countries in the region.

Type 3: Through provision of tools

- **A Wide Range of Stakeholders Use – IGES CDM Database:**
  IGES developed a number of CDM-related database series, and closely cooperating with UNFCCC Secretariat to synchronise the CDM data to enhance the quality of data and its analysis for the public. For example, Kansai Electric Power Company and Nissan Motor Company, as well as multi-lateral banks and the World Bank cited the IGES CDM Database for the estimation method of CER issuance.
- **Japan 2050 Pathways Calculator – a low-carbon scenario simulation tool:**
  A proto type of Japan 2050 Pathways Calculator (2050 Low Carbon Navigator) is being developed in collaboration with the National Institute for Environmental Studies (NIES) with support from the UK Embassy and Ministry of the Environment of Japan, as a low-carbon scenario simulation tool to help discuss and select among various options regarding energy supply and demand and GHG mitigation.
- **MRV on Transport-related GHG Emissions:**
  Tools and methods to measure, report and verify (MRV) transport-related greenhouse gas (GHG) emissions were developed and shared with five cities in the Asia Pacific; and a larger group of stakeholders via an e-learning short course.

Type 4: Through network operations

- **Thailand developed NAMAs Strategy (LoCARNet):**
  The government of Thailand developed their strategy on Nationally Appropriate Mitigation Actions (NAMAs) supported by the scientific knowledge provided from the Low Carbon Asia Research Network (LoCARNet) in collaboration with the Thai Greenhouse Gas Management Organization (TGO). IGES has been serving as the Secretariat of LoCARNet.
- **The city of Iskandar, Malaysia Implements a Low-Carbon City Plan (LoCARNet):**
  The city of Iskandar, Malaysia prepared and implemented a low-carbon city plan. LoCARNet provided supporting capacity for both the plan's development and implementation, as well as helping to establish collaboration among local universities and implementing organisations.
- **Asian Five Cities Develop Low-Carbon Action Plans (ASEAN ESC Model Cities Programme):**
  IGES supported the development of low-carbon action plans in Asian five cities (Surabaya, Indonesia; Ho Chi Min City, Viet Nam; Nonthaburi and Phitsanulok, Thailand; and Cebu, the Philippines)
- **GAN built upon prior Regional Initiative of APAN:**
  Initiated by UNEP, officially launched at the COP19, the Global Adaptation Network (GAN) consists of three sister regional climate change adaptation specialised networks: Asia Pacific Adaptation Network (APAN) and ones for Latin and Africa. IGES has been serving as the Regional Hub for APAN.

Type 5: Through Pilot Projects

- **Indian SME Pilots Japanese Low-Carbon Technologies:**
  A pilot project to test the feasibility of installing Japanese low-carbon technologies in Indian small and medium-sized enterprises was completed, which created the basis for further enhancement of technology low-carbon transfer/application. Technologies applied include Gas and Electric heat pomp technologies and a compressed air system.
- **Wastewater Treatment Model Facilities in Rural China:**
  Household-origin wastewater treatment model facilities have been installed in around 10 small towns in rural China, the findings from which will be reflected in the national guidelines.
- **China-Japan Inter-city Cooperation for Air Quality Improvement:**
  A draft framework of China-Japan inter-city cooperation for air quality improvement was developed and proposed to respective central and local governments.

1.2.2. FY2014 Impacts

Type 1: Through proposals for improved policy/planning/practice

- **"Green Gift" adopted in Japan – FY2015 Tax Reform Package:**
  The Government of Japan adopted the Green Gift Scheme proposed by IGES and will implement it through the FY2015 tax reform package. The scheme designed to support domestic renewable energy investment was listed in FY2014 tax reform package as an item for further consideration. A series of follow-up activities including a public symposium, policy dialogues, media coverage/articles and other PR activities has provoked a national level discussion and led to its adoption in the FY2015 package.
- **Taking the lead in UN Decade Programme – SCP 10YFP:**
  IGES was invited to play the leading role in guiding the Programme of Sustainable Lifestyle and Education (SLE) component of SCP 10YFP. IGES President continues to serve as a board member of SCP 10YFP on behalf of the Government of Japan.
- **OECD promotes EPR Policy:**
  Extended Producer Responsibility (EPR) policy has been promoted by OECD with updating of the OECD EPR Guideline for Working Party on Resource Productivity and Waste. IGES has been providing substantive inputs, such as provision of findings and recommendations from EPR case studies on the home appliance recycling law in Japan.
- **National Strategic Plan on Food Waste Management piloted in Malaysia:**
  National Food Waste Management Strategy was developed with longstanding support from IGES

and officially approved by the Ministry of Urban Wellbeing, Housing and Local Government in 2014 and will be sent to the Cabinet Office for final approval. The Strategy is piloted by selected companies in Malaysia for initial data collection.

Type 2: Through provision of guidelines

- **Mainstreaming of Community-based Forest Management:**
  Community-based Forest Management has been promoted in the region through the wide use of IGES tools and guidelines by the practitioners and training communities, such as the 'Training Manual on Community-based Forest Biomass Monitoring'
- **JCM Manuals Made Available in Vietnamese:**
  The Joint Crediting Mechanism (JCM) operation manual - a text book in flowchart style and the training manual for validation and verification applicable to all the signatory countries was developed by IGES and will be utilised for the operation of the JCM. Needs for the manual prepared in multiple languages requested by JCM participating countries. The manuals are now available in Vietnamese.

Type 3: Through provision of tools

- **The Japan 2050 Low Carbon Navigator Launched at ISAP2014:**
  The Japan 2050 Low Carbon Navigator was launched and is now available on the IGES website, attracting a wide-range of stakeholders, including governmental organisations (MOEJ and METI), the academia, the NGOs, and university students and related associations. The Navigator is designed as an easy-for-communication simulation tool supporting policy discussions/dialogues has been subject to many media coverage/articles since its launch in summer 2014.
- **ILO mapped Green Jobs Potentials in Selected Asian Countries:**
  The International Labour Organization (ILO) completed green jobs mapping in Malaysia, the Philippines and Indonesia. IGES joined ILO Green Jobs Programme and the Green Jobs in Asia and the Pacific Project to support ILO establishing their quantitative methodology for green jobs mapping and analysis, i.e. employment and environment-extended green DySAM.
- **Quick Assessment Tools for municipal solid waste and SLCP emissions:**
  Tools for quick assessment of municipal solid waste and Short-Lived Climate Pollutants (SLCP) emissions were developed by IGES and acknowledged under the CCAC Municipal Solid Waste Initiative (MSWI). Tools and capacity development workshops were designed to support municipal decision-making, through which co-benefit approach on climate and 3Rs nexus will be promoted at a municipal level.

Type 4: Through network operations

- **Y-PORT Center for Urban Climate Challenges:**
  Yokohama Partnership of Resources and Technologies (Y-PORT) Center was established with IGES as part of the platform along with the City of Yokohama, city network and private sectors in order to address emerging issue of urban climate change resilience in Asian cities while promoting city-to-city collaboration, knowledge sharing, and the implementation of pilot projects for smart and future cities.
- **IGES Centre Collaborating with UNEP on Environmental Technologies:**
  UNEP and IGES agreed to set up IGES Centre Collaborating with UNEP on Environmental Technologies with its initial focus on the Climate and Clean Air Coalition – Municipal Solid Waste Initiative (CCAC-MSWI)-related issues launched in 2015.
- **National Programmes in Action - ASEAN ESC Model Cities Programme:**
  ASEAN ESC Model Cities Programme provided a boost to the implementation of National ESC programmes in 8 ASEAN countries. Amongst others, Cambodia, Viet Nam and Myanmar have significantly strengthened their national activities.
- **Preparation of UNFCCC Regional Collaboration Centre in Asia:**
  The scope and activity of the regional collaboration centre for the UNFCCC (UNFCCC RCC) has been discussed since June 2014. A regional joint workshop by IGES-ADB-UNFCCC on the Market

Mechanism in Asia was successfully organised in Bangkok emphasising the importance of capacity building in the region.

Type 5: Through Pilot Projects

- **Silang-Santa Rosa River Basin Looks into Adaptation-Mitigation Integration:**
  Local governments at the Silang-Santa Rosa River basin in the Philippines initiated inter-municipality coordination to enhance local Comprehensive Land-use Plans with climate consideration, working together with IGES on a pilot project on integrated approach to mainstream adaptation-mitigation concerns into local development planning.
- **JICA-SIDBI Adopted Low-Carbon Technologies Commended by IGES:**
  JICA- Small Industries Development. Bank of India (SIDBI) included the heat pump technologies recommended by IGES in their financing eligibility list based on the success cases proven by IGES-TERI low-carbon technologies installment in Indian small and medium-sized enterprises
- **Asian Cities Pilots Low-Carbon Projects (JCM City-to-City Collaboration Scheme):**
  Advanced cities in Asia developed and implemented low-carbon projects through JCM city-to-city collaboration scheme and other arrangement mediated by IGES, namely Surabaya (Indonesia), Cebu (the Philippines), Cat Ba Island in Hai Phong (Viet Nam) and cities in Palau.
- **Wastewater Treatment Model Facilities in Rural China:**
  Eleven (11) model facilities were installed in nine regions, demonstrating the effective waste water treatment in rural areas in China. IGES served as an effective platform to facilitating stakeholder cooperation at local and national levels. Policy recommendations as inputs to national guidelines are under way.
- **China-Japan Inter-City Cooperation for Air Quality Improvement:**
  Ten (10) local governments in Japan started communication and cooperation with respective Chinese counterpart cities on air quality management, with substantive support from IGES.

1.2.3. FY2015 Impacts

Type 1: Through proposals for improved policy/planning/practice through publications and other means

- **IGES book entitled *Achieving the Sustainable Development Goals: From Agenda to Action* recommends governance reforms needed to achieve the Sustainable Development Goals (SDGs)**

  IGES published a book entitled *Achieving the Sustainable Development Goals: From Agenda to Action*. A review from the website 17goals.org (an initiative of over 20 universities, companies, Non-Governmental Organisations (NGOs), and experts for SDGs implementation) suggests that the book "offers an excellent and concise learning reference for why the SDGs exist, how they evolved, and how governments need to adjust course…to tackle them." Outreach activities following the book's publication led to training opportunities with Hitachi, Ltd.; capacity building activities with the Cambodian government and United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP); presentations for the Shanghai Academy of Social Sciences; collaborative research with Southern Illinois University; and possible follow-up work on national readiness for SDG implementation with Japan International Cooperation Agency (JICA).

- **Contribution to the discussion over the long-term negative impacts from coal-fired power plants on climate policy**

  Japan developed plans to increase coal-fired power plants, and IGES conducted and published a study on their negative impacts on the achievement of Japan's Intended Nationally Determined Contribution (INDC) – 26% emissions reduction by 2030 against 2013 levels – as well as the long-term goal of 80% emissions reduction by 2050, which is inscribed in the Cabinet-approved Basic Environment Plan. The paper pointed out that such construction plans made it difficult to achieve both mid- and long-term emission reduction targets. A summary of the paper was made by the Ministry of the Environment Japan (MOEJ) and circulated within the ministry. Comments by an IGES

researcher were featured in a major newspaper article (Mainichi Shimbun). IGES also received inquiries from the media including Reuters and Japan Broadcasting Corporation (NHK), and contributed to a special NHK documentary programme on the 21st Session of the Conference of the Parties (COP21). This report was also internationally circulated through the Open Climate Network led by the World Resources Institute (WRI).

- **Resource Efficiency Agenda mainstreamed in the international community**

Resource efficiency has been a key issue in decoupling improvement of well-being from material consumption. IGES has supported MOEJ over the years, and this issue has developed into one of the most significant sustainability issues in the international community such as United Nations Environment Programme (UNEP) International Resource Panel, Organisation for Economic Co-operation and Development (OECD) and SDGs, and was one of the key sustainability themes at the Group of 7 (G7) summit and G7 Toyama Environment Ministers' Meeting (EMM) held in May 2016 in Japan. Under Japan's G7 Presidency, IGES co-organised both a senior officials level meeting of G7 Alliance on Resource Efficiency and a public-open seminar on resource efficiency agenda in Japan. IGES assisted MOEJ to develop a background paper and draft outcome documents on resource efficiency agenda for G7 Toyama EMM. In the process, IGES published a policy brief on resource efficiency policy in European Union (EU) with recommendations to Japan to focus more on collaboration between manufacturing industries and recycling industries and addressing upstream issues such as design for material efficiency. The policy brief was featured in a top article of Japan Environment News (Kankyo Shimbun) in November 2015.

- **IGES integral to launching innovative Asia Pacific Clean Air Partnership (APCAP), providing policymakers with an authoritative voice on air pollution**

IGES researchers played a key role in collaboration between the APCAP science panel and the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC) on a regional assessment of atmospheric pollution in Asia. IGES also worked with Clean Air Asia to publish a Guidance Framework for Urban Air Quality Management in Asia to extend capacity building activities throughout Northeast and Southeast China in 2016.

- **Four Asian Cities developed the local resilience city plans with support from IGES**

As recently reaffirmed by the Sendai Framework for Disaster Risk Reduction, building resilient cities is urgently needed to face climate change and associated natural disasters. Working in line with this framework, Kitakyushu Urban Centre (KUC) provided technical assistance and capacity building opportunities to four Asian cities, namely Cebu (Philippines), Nonthaburi (Thailand), Ho Chi Minh City (Viet Nam) and Shanghai (China) to develop their local resilient plans in partnership with academic, private and citizen groups. The plans of Cebu and Nonthaburi, including both adaptation and mitigation measures, were officially approved by the respective city councils. Cebu has issued a city order to allocate 5% of the annual council budget for implementation. The actions and experience of these cities have been recognised as good practices at national and international levels. For example, Nonthaburi City was invited by ICLEI-Local Governments for Sustainability (ICLEI)-South Asia to share its experience at the Asia-Pacific Resilient Forum (2015). This study was conducted under the Environment Research and Technology Development Fund (1-1304) of the MOEJ.

- **Five cities developed municipal solid waste management plans/strategies to reduce Short-Lived Climate Pollutants (SLCPs) with IGES**

Management of increasing waste volume is a common concern in growing Asian cities. Integrated Solid Waste Management (ISWM) strategies which encourage waste reduction at source rather than later at the end-of-cycle are needed to reduce landfilled waste, open burning, increase income and reduce resource use, and improve the environment in cities. ISWM strategies can also contribute to the reduction of the emission of SLCPs. KUC, in collaboration with the CCAC and JICA assisted four Asian cities (Cebu (Philippines), Surabaya (Indonesia), Rayong City and Map Ta Phut (Thailand)) and

one African city Nairobi (Kenya) in developing ISWM plans/strategies based on their local conditions. In Cebu, the proposed Municipal Solid Waste Management (MSWM) plan and strategies were integrated into the city's 10-year solid waste management plan which started in 2013. Based on the plan, the city established material recovery facilities and composting in barangays and achieved 30% waste reduction target in 2015 when compared to the 2010 baseline. National governments of the pilot cities where initial work has been completed (Philippines, Indonesia and Kenya; Thai cities are still undertaking initial work) have shown great interest in scaling-up the activities in other cities with the technical assistance of KUC.

Type 2: Through provision of guidelines

- **Guide published to help policymakers in implementing Sustainable Consumption Policy**

IGES developed UNEP's *Sustainable Consumption Guide for Policymakers,* a major resource pack of 10-Year Framework of Programmes (10YFP) launched in June 2015 to clarify some of the most common myths surrounding sustainable consumption and provide practical guidance for developing sustainable consumption policies in Asia.

- **Contributed to development of Reduction of Emissions from Deforestation and Forest Degradation, and Conservation, Sustainable Management of Forests and Enhancement of Forest Carbon Stocks (REDD+) Guidelines for the Joint Crediting Mechanism (JCM)**

REDD+, which under the United Nations Framework Convention on Climate Change (UNFCCC) COP21 Paris Agreement will be part of the new global framework to combat climate change, has been included in the scope of activities for the JCM; however, the JCM lacks guidelines to develop, validate and verify REDD+ projects. Through a study group launched by the government, IGES contributed to the development of the necessary guidelines, providing inputs on methodologies, safeguards, and validation and verification processes.

Type 3: Through provision of tools

- **IGES's green economy/green jobs assessment contributed to the roadmap and policy formation in Malaysia, Kenya and Burkina Faso**

Shifting to green economy and eradicating poverty holds the key to achieving sustainable development, and national governments are seeking policies that bring multiple benefits including stronger economic growth and job creation. IGES provided quantitative green economy/green jobs assessment to support decision-making at the national level through policy processes of UNEP under the Partnership for Action on Green Economy (PAGE) and through International Labour Organization (ILO)'s Green Jobs project. ILO-IGES report on green jobs mapping study was used for developing relevant policies and a roadmap on green jobs in Malaysia. The Kenya Green Economy Assessment Report (UNEP, 2014) to which IGES provided technical review was referred to in the Kenya Green Economy Strategy and Implementation Plan (GESIP) adopted by the Kenyan Government in May 2015. IGES also contributed to UNEP Burkina Faso Green Economy Assessment Report which is being used as an input to the national green economy development planning process.

Type 4: Through network operations and engaging with target stakeholders

- **Wide media coverage of IGES regarding COP21**

IGES contributed to international and domestic discussion on climate policy before and after COP21 and succeeded in widening its domestic media coverage through publishing timely publications including an IGES Flagship Report on Climate Change, as well as holding media briefings. Such media coverage includes comments and commentaries in newspapers including Asahi Shimbun, Yomiuri Shimbun, Sankei Shimbun, Kyodo News and Seikyo Shimbun, and appearance on an NHK special

documentary programme on COP21 and on an online documentary programme. These comments and commentaries largely called for prompt policy action including carbon pricing toward decarbonisation, which could set a counterargument against the status-quo approach advertised by some research groups in Japan. Key ideas proposed by the Flagship Report, such as a five-year cycle for ratcheting up climate actions, were also discussed at various international policy processes, including UNFCCC side event (June), International Forum for Sustainable Asia and the Pacific (ISAP) (July), and policy research dialogues in China and India (June and October). Collaborative research with a European research institute with possible funding from EU is being considered.

- **Supported policy recommendations from businesses to be articulated to the major decision-makers. They have contributed to Japan's climate action plan to commit to 80% greenhouse gas emissions reduction by 2050.**

  IGES has served as the secretariat of a business coalition on climate change and supported its actions. Policy recommendations on Japan's INDC and the climate action plan were articulated, which had called for 80% reductions of greenhouse gas emissions by 2050. This was effectively delivered to the major decision-makers. Narratives on climate change from economic and business perspectives from business leaders and IGES attracted strong interest from media resulting in more than ten instances of media coverage during and after COP21. The business coalition also created partnerships with international groups such as We Mean Business (coalitions of eight major business groups that have links with more than 1,000 companies) which aims to accelerate transition to a green economy. This has increased the opportunities to participate in the international decision-making processes.

- **International Research Network for Low Carbon Societies (LCS-RNet) released its position statement for COP21**

  Members of the LCS-RNet sent out the message document, "A moment of truth for climate and sustainable development", to COP21 which was signed by 217 climate change scientists including 74 authors, chairs and co-chairs of the Intergovernmental Panel on Climate Change (IPCC), prominent development economists and five former ministers from 47 countries covering all regions (as of October 2015). This position paper illustrated the roles of scientists from various disciplines, from countries with different development stages and diverse cultures and expressed their common views on the urgent need for climate action including the enhancement of domestic policies and implementation of financial mechanisms as well as technology and development opportunities for developing countries (http://lcs-rnet.org/wp-content/uploads/2015/10/Declaration-def_rev.pdf). The position paper was cited by three French media outlets (i.e. Le Monde, Mediapart, and Libération) and uploaded onto the website of France Stratégie.

- **Improving access to experience-based adaptation knowledge for Asia-Pacific governments**

  Experience-based, tacit knowledge on climate change adaptation is often hard to elicit and capture among government officials and practitioners. Through an innovative email-based discussion format introduced and led by the Regional Centre (Bangkok) (BRC), over 700 people across Asia and the Pacific gained greater access to that critical knowledge. Since FY2013, BRC introduced a new, convenient way to get government officials, fund managers and other development partners talking to each other. Ten email discussions – called the Exchange Series – have been conducted since late 2013 covering topics ranging from how national governments are integrating gender into adaptation project design to finding out the challenges city officials face in getting money for urban adaptation projects. Subscribers to the Exchange Series more than doubled from 258 in March 2014 to 786 in October 2015. Through these discussions, recognition of Asia Pacific Adaptation Network (APAN) and IGES also increased among key stakeholders as these regular discussions take place with BRC playing a leading role. (The Exchange Series is a work commissioned by the US Agency for International Development (USAID) Adapt Asia-Pacific project to support APAN and IGES BRC is the sub-contractor for the project's knowledge management component.)

Type 5: Through Pilot Projects

- **Developed flood-hazard maps and countermeasures to improve Comprehensive Land-Use Plans (CLUPs) in the Philippines**

  To develop understanding on appropriate models to support the integration of adaptation into local government planning, IGES is implementing a pilot project with four local governments – the cities of Biñan, Cabuyao and Santa Rosa, and the municipality of Silang – in the Silang-Santa Rosa Sub-Watershed, the Philippines. The local governments have used IGES technical support to develop their flood-hazard maps and countermeasures and incorporate these into their CLUPs. Project data was also incorporated in the Santa Rosa local climate change action plan.

- **IGES facilitated Indian companies to adopt low-carbon technologies**

  Ten Indian companies adopted Japanese energy-efficient technologies including air compressors and steam management and control system, which will lead to Greenhouse Gas (GHG) emissions reduction. With training provided to the Indian experts/energy auditors by IGES in partnership with the Energy and Resources Institute (TERI), 13 sites are now considering to install Japanese air compressor technology under UN-GEF-SIDBI (Small Industries Development Bank in India) programme.

- **IGES helping women in Asia harness climate finance for gender responsive mitigation activities**

  Out of 4,000 surveyed Clean Development Mechanism (CDM) projects, only five were recognised as bringing additional benefits to women. This is part of larger problem: women have limited access to climate finance even though they engage in many activities that emit GHGs and tend to spend money on items with wider development benefits. As part of an Asian Development Bank (ADB) project, IGES is working with SNV Netherlands Development Organisation to help women gain more access to climate finance in Southeast Asia. Through the project, IGES is helping the Gender and Children Working Group (GCWG) in Cambodia's Ministry of Agriculture, Forestry and Fisheries (MAFF) prepare proposals for climate finance. IGES is also supporting Laos Women's Union in mainstreaming gender into the Laos Climate Action Plan, and helping women acquire training to construct biodigesters and sell biogas in Viet Nam. IGES assisted the ADB in publishing capacity building materials from the project entitled *Training Manual to Support Country-Driven Gender and Climate Change* (http://www.adb.org/publications/training-manual-country-driven-gender-and-climate-change).

- **Helping to develop "Environmentally Sustainable Cities" in eight Association of South-East Asian Nations (ASEAN) countries**

  The implementation gap, i.e. how to translate theory into practical actions at the city level is a common challenge among cities in Asia. Since 2010, BRC and KUC have helped a total of 31 local governments selected in eight ASEAN countries – Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Thailand and Viet Nam – in developing new skills and knowledge to improve the living environment and have assisted spreading such effective local practices within their countries and across the region. For example, in 2014 Lao PDR established a pilot college-managed, decentralised wastewater treatment system and manual as a nationwide rolling-out strategy. Over three years (2011 - 2014), Phnom Penh (Cambodia) managed to reduce plastic bag use in supermarkets by about 20% through large-scale public awareness campaigns and new regulations (weekend ban), which is being spread to Siem Reap. Da Nang (Viet Nam) trained and established voluntary environmental protection citizen units in three 'Model Environmentally Friendly Residential Communities', which resulted in cleaner, greener public areas. In Indonesia, Lamongan and Balikpapan innovated new models of 'Waste Banks' (where citizens exchange recyclables for cash) with health insurance schemes, enabling the poorest people to benefit from basic medical services. (These activities are implemented by BRC/KUC in partnership with the ASEAN Secretariat and local governments through the ASEAN Environmentally Sustainable Cities (ESC) Model Cities Programme.).

- **The IGES Beijing Office represents the Government of Japan (MOEJ) and started official environmental cooperation between the Governments of Japan and China for improving air quality in China**

  Since FY2014, the Beijing Office has been serving as the overall coordination platform for Japan-China inter-city cooperation project and to promote cooperation between local governments in Japan and China for improving air quality in China. However, cooperation between the two central governments stalled for political reasons. In FY2015 Beijing Office first concluded a Memorandum of Understanding (MOU) on cooperation for FY2015 with the Sino-Japan Friendship Centre for Environmental Protection under the Ministry of Environmental Protection of China (MEP) and then led the two central governments to verbally agree on cooperation at the Japanese and Chinese Environmental Ministers' Meeting on 29 April 2015. It organised a seminar on Japan-China inter-city cooperation on 15 September 2015 to inaugurate the cooperation with Chinese cities designated by the MEP. The event received interviews from five Japanese TV stations and informed seven Japanese newspapers. Following this, cooperation between the two central governments has been enhanced.

- **The Beijing Office to launch cooperation on technology to monitor Super Low Density (SLD) gas emissions from coal-fired power plants that serves the national interests of Japan**

  This cooperation was requested by the Director General of the MEP at a policy dialogue in March in 2015, and the Beijing Office plans to implement it under the Japan-China inter-city cooperation scheme funded by the MOEJ with support from the Japan Environmental Technology Association and other organisations. The introduction of the Japanese standard for SLD gas monitoring technologies will help pollution control in China and is expected to benefit Japanese manufacturers on the technology side. At the end of March 2016, the Beijing Office made an interim report on this cooperation and submitted recommendations to the MEP. The MEP will refer to these recommendations when they revise the technical guidelines.

1.2.4. FY2016 Impacts

Type 1: Through proposals for improved policy/planning/practice through publications and other means

- **OECD published its Updated Guidance on Extended Producer Responsibility**

  The Organisation for Economic Co-operation and Development (OECD) published its updated policy guidance on Extended Producer Responsibility (EPR), titled Extended Producer Responsibility: Updated Guidance for Effective Waste Management, in September 2016. IGES contributed to the process of drafting this new guidance by providing Japanese case studies as well as overall comments. IGES helped OECD's outreach to policymakers in Viet Nam by organising a special session on EPR at the 3rd the 3R International Scientific Conference on Material Cycles and Waste Management (3RINCs) meeting held in Hanoi in 2016. IGES and National Institute for Environmental Studies (NIES) collaborated to publish Japanese summary of the guidance in December 2016.

- **Resource Efficiency Agenda was mainstreamed in international processes such as G7**

  Resource efficiency has been a key issue in decoupling improvement of well-being from increase in material consumption. IGES has supported the Ministry of the Environment, Japan (MOEJ) over the years, and this issue has developed into one of the significant sustainability issues in the international community such as the United Nations Environment Programme (UNEP) International Resources Panel, OECD and Sustainable Development Goals (SDGs), and it was recognised as a key sustainability theme at the G7 summit and the G7 Toyama Environment Ministers' Meeting (EMM) held in May 2016 in Japan. With substantial inputs also from IGES, the G7 Environmental Ministers adopted the

Toyama Framework for Material Cycles. In addition MOEJ, United Nations University – Institute of Advanced Studies (UNU-IAS) and IGES organised a Workshop of the G7 Alliance for Resource Efficiency on synergies between Decarbonisation and Resource Efficiency.

Type 2: Through provision of guidelines

- **GHG mitigation efforts were accelerated through the JCM in many partner countries**

  IGES facilitated the introduction of low-carbon technologies and carbon credits building through Joint Crediting Mechanism (JCM) with IGES's technical support for evaluating the greenhouse gas (GHG) emissions reductions at the national and sub-national levels. The JCM added a new partner country, the Philippines (January, 2017), and IGES contributed to the registration of 12 JCM projects in Bangladesh, Indonesia, Mongolia, Palau and Viet Nam, and the development and official approval of 24 JCM methodologies (in Bangladesh, Cambodia, Costa Rica, Ethiopia, Kenya, Indonesia, Mongolia, Myanmar, Saudi Arabia, Thailand and Viet Nam). In addition, IGES contributed to credit issuance for eight JCM projects (in Indonesia, Mongolia, Palau and Viet Nam). At the sub-national level, IGES also developed two JCM projects in collaboration with Yokohama City's Y-PORT Center (introduction of efficient pumps at a water treatment facility in Danang city, Viet Nam and at an eco-airport, waste-to-energy project and waste treatment project in Batam city, Indonesia). The progress in low-carbon technology adoption through JCM was featured in several news articles.

Type 3: Through provision of tools

- **The Water and Environment Partnership in Asia (WEPA) database contributed to good governance in water environment management**

  IGES has been acting as the WEPA Secretariat to facilitate knowledge-sharing through this extensive database. IGES also undertook a study that provides unique data on the pollution load of piggeries in Viet Nam, and improved the WEPA database, which in FY2016 had over 100,000 hits from Asian developing countries.

- **Highlighted the impacts of Indonesia's NDCs on the country's labour market by applying IGES's quantitative assessment**

  Implementing the Paris Agreement and the Nationally Determined Contributions (NDCs) will positively or negatively affect other sectors of a country's economy. The labour market is a major area of significant concern. Following a request from the Parties during COP19, the International Labour Organization (ILO) commissioned IGES to develop and apply a quantitative analytical methodology based on the computable general equilibrium (CGE) model for assessing the labour market implications of the NDC in Indonesia. The findings are very important and significant for streamlining and adjusting the country's climate policies by taking into account the implications on labour market conditions. Throughout the study, relevant governmental agencies (for example, the planning commission of Indonesia (BAPPENAS)) as well as other stakeholders were consulted for review/feedback. It is expected that the findings of the study will help Indonesia to reduce potential adverse effects of climate policies on the labour market. While the current model developed by IGES is customised for Indonesia, the modelling framework can be used for similar studies in other countries.

Type 4: Through network operations and engaging with target stakeholders

- **Supported businesses to deliver their voice through policy recommendations as well as through active participation to the climate policy-making process. Important contribution was made to Japan's Preparatory Plan for the National Long-term Low-Carbon Development Strategy.**

  As the secretariat of a business coalition, GE has supported companies as an important non-state actor to engage with the Ministry of Environment's Long-term Vision Sub-committee on Climate Actions to represent a forward-looking business perspective in Japan. This was where the basis of Japan's Long-term Low Carbon Development Strategies was discussed. GE contributed in the creation of ambitious recommendation, which explicitly spelled out the importance of having a 'carbon budget' as the basis of strategy, the need for 'drastic reduction' as well as 'carbon pricing'.

- **More companies adopted Japanese low-carbon technologies and/or best operating practices in India, Thailand and Viet Nam**

  Eight Indian companies, two Thai companies and three Vietnamese companies adopted IGES's recommendations on implementing Japanese low-carbon technologies and/or best operating practices at their sites, which led to actual energy saving and GHG emissions reductions.

- **Environmental cooperation between the Governments of Japan and China for improving air quality in China further progressed**

  Since FY2014, the Beijing Office (BJG) has been serving as the overall coordination platform for a Japan-China city-to-city cooperation project and to promote cooperation between local governments in Japan and China for improving air quality in China. FY2016 was the third year of this project and tangible outputs were achieved. The Beijing Office promoted cooperation between 11 Japanese local city governments and 17 Chinese local city governments, as well as cooperation with the Ministry of Environmental Protection of China (MEP). In FY2016, significant progress was made with joint research between Kitakyushu city and Shanghai city and other local cities. In February 2017 a meeting was held in Shanghai city to report the interim result of the joint research. Also, a model project started between Jiangsu Province and Fukuoka Prefecture, which aims to reduce CO2 and Volatile Organic Compounds (VOC) emission from factories. In June 2017, BJG organised a training session on VOC for two days in Beijing. More than 100 participants attended the session, half of which were technical officers from the Chinese local cities.

Type 5: Through Pilot Projects

- **Sustainable Development Goals (SDGs) localised in eight ASEAN countries**

  Since 2010, BRC and KUC have been at the forefront of promoting innovative 'bottom-up' actions of cities through two initiatives implemented jointly with the Association of South-East Asian Nations (ASEAN) Secretariat: (i) ASEAN Environmentally Sustainable Cities (ESC) Model Cities Programme; and (ii) the East Asia Summit (EAS) High-Level Seminar (HLS) on Sustainable Cities. The Model Cities Programme is presently in its 3rd phase since 2016 and has so far supported 40 cities in eight countries: Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Thailand and Viet Nam. These Model Cities enlisted over 50,000 persons to pilot good practices and appropriate technologies and systems. In FY2016, Model Cities continued to expand their actions from traditional topics such as solid waste management, water & sanitation and air pollution to emerging topics such as local data revolution, green energy (such as small-scale solar), model green schools, environmentally-friendly tourism and urban resiliency. Both the Model Cities programme and the 8th HLS held in Chiang Rai, Thailand on 8-9 February 2017 were re-designed to strongly promote the localisation of the SDGs. For example, a series of national SDGs workshops were organised to raise its awareness.

Model Cities were encouraged to map their local actions to the 17 SDGs especially with the use of quantitative indicators.

- **National and local waste management related laws and guidelines have been developed in the Philippines with technical support of IGES**

  As a result of continuous technical support provided by IGES, the Philippines government issued "the Guidelines Governing the Establishment and Operation of Waste to Energy (WtE) Technologies for Municipal Solid Wastes (NSWMC Resolution No.669, Series of 2016)" in June 2016. In addition, Cebu City (Philippines) has developed its Special Waste Management Bylaw (related to hazardous waste) with IGES's support, and received council approval for the first time in the country.

1.3. Resource Management

IGES managed to secure a continued core fund of JPY 500 million from the Ministry of the Environment, Japan (MOEJ) and a slightly decreased amount of financial support from relevant sub-national governments in Japan (Figure 12). In FY2014 a Finance Committee was set up to continue regular monitoring of the financial state of the institute and prompted necessary actions to keep the balance sound. In FY2015, although it successfully raised a larger volume of funds in total than FY2014, IGES was left with a smaller discretionary portion of raised funds, particularly from some large competitive project funds from MOEJ, due to stiff competition and the nature of projects that require a large portion of outsourcing outside IGES's expertise. As a result, IGES recorded a financial deficit at approximately JPN 16 million.

On the other hand, the efforts to fundraise from international sources have contributed to diversifying funding sources at IGES. FY2016 recorded an increase in the ratio of international funds to the total external funds (Figure 13), and a similar trend continues to the new Phase. IGES introduced an online accounting system (Budget Control System or BCS) not only for accounting purposes both at the institute and project levels but also for human resources management.

IGES manages two types of its own internal funding mechanisms for investment and increasing impact generation, namely *Strategic Research Fund (SRF)* and *Strategic Operation Fund (SOF),* in the previous phase and in FY2015, respectively. The former supported for impact making activities such as organising workshops and other events or staff's participating in the important policy processes. The latter supported and encouraged IGES's own research activities and publications. Both funds were considered important for IGES to demonstrate the effective and meaningful use of the core fund.

Figure 12: Total revenues (FY2007-FY2016)

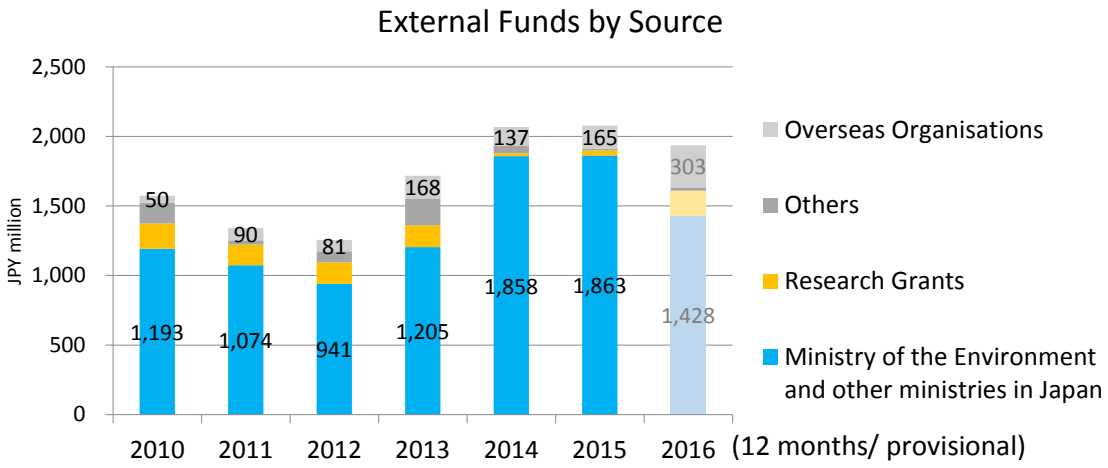

Figure 13: External Funds Breakdown (FY2010-FY2016)

The ratio of research staff has remained around 60% of the total staff (local staff at Bangkok Regional Centre in Bangkok and Beijing Office are excluded) during ISRP6 (Figure 14). To respond to the increased volume of non-research activities (such as organising workshops/conferences, translating works, and coordinating often as part of commissioned work) as part of impact making activities, IGES introduced a few Programme Officer positions to deal with increasing amount of non-research work in FY2013. IGES's own mid-phase evaluation conducted in February 2015 stated that the overall IGES management should be made more efficient, to keep the number of non-research staff members under control.

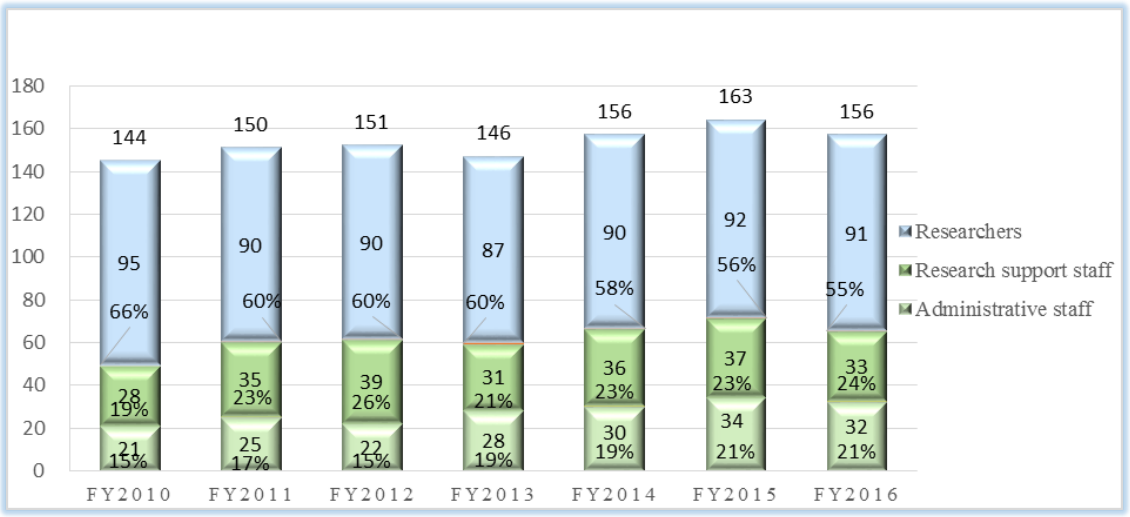

Figure 14: IGES Staff Composition (FY2010-FY2016)

In FY2016 a third party assessment on IGES's operation and management was administered by the Japan Productivity Center (JPC). The assessment was done in three layers, i.e. financial analysis, work volume, staff satisfaction; the latter two analysis were based on the survey by staff. The assessment was the first of its kind IGES has ever conducted for institute-wide management. The results of the JPC assessment in 2016 showed that there was room for improvement and revealed the following challenges:

(1) Financial analysis results (FY2011 – FY2015)

- Along with a decrease in contributions from MOEJ ('core fund') and in subsidies from local governments, coupled with an increase in external funds, the ratio of external funds out of the total income increased from 56% in FY2011 to 70% in FY2015, the ratio of the core fund and subsidies per person among all staff decreased.
- It is necessary to secure a balance between income and expenditure within projects financed by external funds , considering all operational costs, personnel costs and general administrative costs.
- In the meantime, effective utilisation of core funds becomes more important, and there is an increasing need to have strict management on the performance of IGES own projects and other investment activities.
- The project financial value-added (FVA) ratio of external funds (Box 1) improved over the past five years (from 30.8% in 2011 to 43.4% in 2015), but this declined from 2014 to 2015. The institute will probably reach a limit for any improvement if it uses only the current measures for cost reduction.
- The productivity of project FVA for all staff has improved twofold over the past five years (labour share, which is the reciprocal side of productivity), but declined from 2014 to 2015. The institute will probably reach a limit for any improvement, using only the current measures.
- Although the general administrative costs ratio has decreased gradually over the past five years (from 22.4% in 2011 to 20.7% in 2015), further reduction will require the development of a more efficient administrative structure, which does not directly link with business volume.
- In order to strengthen the institute so as to withstand a possible reduction in the core fund, it is necessary to increase the project FVA ratio of external funds, and gradually reduce the administrative costs ratio.

Box 1: Definition of IGES '*project financial value-added (FVA)*'

IGES applies the concept of a "value-added" which is commonly used for corporate financial management, to the project or group level (when aggregated) financial management (namely "*project financial value-added" or 'project FVA'*). Its ratio to the total project revenues (project FVA ratio) is used as an indicator of fund availability for IGES's strategic activities.

Project FVA is calculated as: revenue minus project operating expenditure such as outsourcing and travel costs available for personnel and general administrative expenditures.

(2) Work volume survey[4] results

- Looking at work hours throughout the institute, only 67% is spent on direct work. 33% is spent on indirect work, which should be reduced substantially. For instance, referring to an excellent private company's case, the indirect work ratio could be reduced reasonably to 25%.
- Among researchers, the ratio of core work,[5] which directly contributes to impact generation, is only less than 50%, so it is necessary to explore measures to increase this ratio.
- In addition, it is necessary to review the breakdown of general administrative work which accounts for 18% of administrative staff's work, and to explore measures to reduce that work.
- The same project management and other management work are handled one time and again by a few staff members. Clear distinction of responsibilities has to be developed for each position to avoid duplication and any other inefficient situations.

(3) Staff satisfaction survey results

- Relationships with other colleagues, workplace environment, and worthwhileness of work show high satisfaction, and efforts to maintain these high evaluation points are required.
- Satisfaction with the system of personnel evaluation and treatment is relatively low, and it is necessary to improve them in terms of fairness.
- Satisfaction with lack of personnel against work volume seems also relatively low, and it is necessary to review the work volume and personnel allocation in order to balance the workload.

1.4. Overall self-evaluation

During the Sixth Phase, IGES intensified its efforts to advance impact generation by shifting its approach from output-based to outcome-oriented. Operations have been scaled up with increased funds particularly from external sources including those from overseas organisations and an associated increase in human resources. IGES also developed its Medium-to-Long Term Strategy 2016-2025 that helps guide the institute in achieving its mission and positioning strategically itself in a changing environment.

Below is an overall self-evaluation against the overall targets set for the ISRP6 (Box 1) along with descriptions of related and additional achievements.

[4] Staff responded to the questionnaire on how much time they think they spent on various activities and procedures at IGES in the past one year.

[5] Consists activities such as research, networking, capacity building, knowledge management, and outreach.

Box 1. The overall targets set in the ISRP6 (excerpt)

(i) IGES will maintain the quality and quantity of policy products contributing to policy formation according to the needs and relevance of society and government. The current level of 40 policy products for the first year will be maintained and this will be expanded to, in total, 160 policy products during the Sixth Phase.

(ii) IGES will diversify the sources of external funding in both Japan and overseas to maintain the level of the Fifth Phase.

(iii) IGES will maintain the current level of networking and cooperation with international organisations to create impacts, and from the second year, will generate new developments in its networking activities for a few key areas.

The total number of publications, though not a primary goal but considered as essential means for generating impacts, has been maintained within a certain range during the Phase. IGES produced various forms of quality publications such as peer-reviewed (internally and externally) papers/articles, book chapters, and policy briefs/papers in addition to contract-based papers and reports. It also produced other types of knowledge products such as policy recommendations, guidelines, databases, videos, and tools that were tailored to the target audience. The total number of quality policy publications was 180 in the Sixth Phase (for 48 months until March 2017). Thus, the overall target set by the ISRP6 on the number of quality publications (160, Box 1) was exceeded. Overall, the level of outputs indicated a healthy productivity. A steady increase in viewership of the IGES website and media coverage also indicate an improvement in IGES's outreach activities throughout the Phase.

As part of the institute's strategy and in an effort to respond to the global policy movement in sustainable development and climate change which was manifested in the form of two key international agreements in 2015, there were three types of progress at IGES during the Sixth Phase. First, IGES strengthened its collaboration with relevant United Nations (UN) organisations and has been entrusted with operating three new collaboration centres since 2015, namely, IGES Centre Collaborating with UNEP on Environmental Technologies, the Technical Support Unit (TSU) for the Asia-Pacific Regional Assessment for the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), and the United Nations Framework Convention on Climate Change (UNFCCC)-IGES Regional Collaboration Centre (RCC) hosted at the IGES Regional Centre in Bangkok, Thailand. These have enabled IGES to establish a solid basis for impact generation with trusted organisations.

Second, IGES increased its engagement with networks and forums, both managed/initiated by IGES and by other partner institutes. This has stimulated IGES to strengthen its collaboration with several key partner institutes in various forms, including with the National Institute for Environmental Studies (NIES) of Japan, and the Asian Institute of Technology (AIT).

Third, IGES intensified collaboration with non-state actors such as local governments, the private sector, and financial institutes, and the media. For example, IGES organised a series of media briefings and seminars for businesses before and after COP21 and COP22, which attracted a substantial number of interested participants and helped not only to inform the media and the private sector, but also to share messages with decision-makers both in governments as well as business. These stakeholder-focused groups became precursors of newly-launched units in the 7th Phase. IGES's extended networks were also shown at its annual flagship event, the International Forum for Sustainable Asia and the Pacific (ISAP), which has been attended over the years by prominent speakers and an increased number of participants. Overall, the level of networking and cooperation with international organisations and other key stakeholders has been achieved in accordance with the relevant ISRP6 target (Box 1).

As IGES expands its activities, the volume of resources (financial and human) gradually increased during the Phase. Although the contributions and subsidies from the governments were in a declining trend, the overall volume of finance base has expanded to exceed JPY 2 billion since FY2014. The sources of funds

were gradually diversified to exceed 20% coming from overseas organisations in FY2016 (April 2016-March 2017, 12 months). Thus, the ISRP6 target (Box 1) has been achieved.

However, new challenges have emerged regarding the quality of resources and their management. As operations at IGES became more complex with a wider variety of activities and funding sources, there was growing pressure to manage projects, deliver outputs, and properly handle resources. IGES increased the number of staff and introduced a few Programme Officer positions to deal with increasing amount of non-research work. The results of third party assessment on ''IGES's operations and management,'' which the institute conducted for the first time, indicated room for improvement in management efficiency and improved governance. While IGES should maintain and expand its impact generation activities, the internal procedures have to be streamlined, internal coordination and collaboration have to be strengthened, and quality of external funds (i.e. an increase in project FVA) has to be improved. In the 7th Phase, in an effort to address this, the programme Management Office and Secretariat have been merged to create the Strategic Management Office (SMO) to be fully accountable to the IGES Board of Directors and Trustees, through serving for three key institute-wide responsibilities, i.e. impacts, outputs and sound governance in three functions: (i) Knowledge and Communications, (ii) Research and Publications, and (iii) Planning and Management, respectively, with some numerical targets to monitor IGES's performance and progress.

Lastly but most importantly, IGES has shifted its focus more on impact generation. The reported cases are found useful not only to monitor the progress in impact generation but also to generate opportunities for IGES to work with key stakeholders or funding agencies. The reported cases so far are yet to reach the stage of "Impacts" in a strict sense and most of them still remain at the level of "Outcomes." It is generally understood that the impacts may not be materialised the way that IGES intended, or wished to claim as there are many inseparable factors in its process. Nonetheless, IGES believes it to be a good exercise in identifying activity focuses and sharpening influence strategies. With the aid of expanded networks and financial resources mentioned above, IGES should be able to generate more outcomes and impacts. Two types of IGES's own internal funding mechanisms for effective increasing impact generation, Strategic Research Fund and Strategic Operation Fund, will continue in the 7th Phase.

The MLS stated the aspirational goal of IGES as becoming one of the top 10 institutes in the world within 10 years as a leading agent of change. IGES has been recognised as a leading environmental think-tank in the region and the world as indicated by two independent surveys and rankings. In fact, IGES treats these rankings not as a goal but as one of the indicators, but they help to reflect its performance in comparison with organisations working for global sustainability.

2. Group-level performance

2.1. Climate and Energy

2.1.1. Goals set in the ISRP6 *(excerpt)*

In the Climate and Energy research area, strategic research activities will be unfolded toward the realisation of low-carbon development in the Asian region with its striking economic growth, in the linkage with the international climate regime. Extra effort will be made to transmit and disseminate research outcomes aiming at the realisation of low-carbon growth, both globally and in the region. This will be achieved through active participation in regional knowledge platforms for sharing of knowledge and information on low-carbon growth strategies developed in each country to date, and through collaboration, cooperation and dialogue with policymakers, as well as domestic officials in Asian countries and international and donor organisations. Already climate change is a common issue for all research areas within IGES, and we should at all times seek to conduct research that transcends internal research areas.

Keeping in perspective international consensus on the global climate change framework that is to be agreed by 2015 and which will commence from 2020, as well as the working rules and guidelines for a strengthened post-2012 framework, analysis and assessment will be carried out on the appropriate form of an international framework and the developing country support to underlay it. Recommendations will be released on institutional design conducive to sustainable growth. ... Under the framework of research on low-carbon societies, expansion of full-fledged research that transcends sectors is required on measures for energy conservation in housing and construction and small- and medium-sized enterprises (SMEs), promotion of renewable energies and "smart-community", and the shift to low-carbon alternatives in various spheres, such as in cities, transportation and waste. Further, one of IGES' strengths in the climate change sphere is market mechanisms. This database should be strengthened and substantiated, as well as international policy recommendations based on this asset should be made more substantial.

In the advancement of this research, analytical methods, such as utilisation of economic models, should be further improved. Taking advantage of IGES' strength, research should be expanded on focused issues related to economic instruments, including command and controls and market mechanisms, and promotional means such as MRV, NAMA (Nationally Appropriate Mitigation Actions) and registries.

2.1.2. Intended impacts/outcomes by the Area

- Countries in Asia will be ready to take enhanced mitigation action at various levels.
- International climate governance is strengthened, to be multi-layered and effective for climate stabilisation, through a new legal framework to be agreed by 2015 and to be implemented in 2020, with the participation of all the UNFCCC Parties, as well as through enhanced actions under the 2nd Commitment Period of the Kyoto Protocol and the Cancun and Durban Agreements.
- The enhanced actions and the new legal framework will be formulated on along with key issues including nationally determined commitments, ensured transparency in actions, design of carbon markets and mechanisms to ensure that national commitments are consistent with global targets.

2.1.3. Self-evaluation and recommendations at the mid-Phase review (February 2015)

The Climate and Energy (CE) Area made some interesting inputs to the global discourse on the future climate regime with the aim of provoking discussions among relevant stakeholders as well as to encourage ambitious targets set by all UNFCCC Parties. An IGES Flagship Project was organised in early FY2014 aiming at strategic outreach of IGES findings into relevant global discourse towards COP21, which provided momentum for an institute-wide and coherent approach to this important challenge. A series of publications published under the Flagship Project will be collated and elaborated, then published as a synthesis report in July 2015. Issues to be covered include core elements of a post-2020 climate regime, key challenges for its implementation, and key challenges for enhancing pre-2020 mitigation actions.

Elements and challenges also include the core set of means of implementation, i.e. technology, finance and capacity necessary for meeting agreed targets.

CE also continued important activities in the Asia-Pacific region to set the basis for enhanced mitigation action, in particular through capacity building activities on CDM, JCM and MRV, as well as through provision of relevant database, tools and methodologies. These efforts led IGES to claim some interesting impacts/outcomes such as:

- CDM Executive Board adopted a methodology for standardised baseline proposed by IGES
- Thailand launched Voluntary Emission Reduction Program (T-VER)

Subsequent business opportunities created include:

- UNFCCC Regional Collaboration Centre to be established in Bangkok
- Y-PORT Center to be established for promoting city-to-city collaboration, knowledge sharing, and the implementation of pilot projects for smart and future cities
- Asia Leadership Programs (ALP) on Sustainable Development and Climate Change

Efforts of CE joined by researchers from other areas on climate policies in Japan also brought a challenging but important opportunity to play key roles in strategic research on:

- Introduction of Enhanced Carbon Tax in Japan.

A cross-area taskforce has been organised for initial discussion with the Ministry of the Environment of Japan, and partner research institutions were begun to explore this opportunity. A significant number of CE and non-CE staff members has been working closely with the Ministry of the Environment of Japan on UNFCCC negotiation processes, for which constant inputs and support has been provided. The areas of intergovernmental negotiation IGES has been supporting include the post-2020 climate regime on mitigation and adaptation, technology, finance, market mechanisms including CDM, JCM and REDD+.

Financial trends

CE acquires the largest external funding amongst all IGES research areas and its financial status is relatively steady. The volume started with JPY420 million in FY2013, followed by JPY 478 million in FY2014. The majority of the funding comes from the Ministry of the Environment of Japan, either directly or through other research institutes such as NIES, though funding from non-Japanese sources is gradually increasing. In FY2015 and FY2016, multi-year funding from ADB is secured, which means that about 7% of funding for FY2015 is received from non-Japanese sources including ASEAN, UNFCCC and WRI.

Recommendations

An international consensus on the post-2020 climate regime is expected to be reached in late 2015, and the intended nationally determined contributions (INDCs) will be pledged by the Parties in due course, so the needs and interests of stakeholders will shift from the regime setting itself to the detailed rules and effective policies for implementation of mitigation and adaptation actions. A core set of means of implementation, namely technology, finance and capacity building will be an important issue to be addressed by the Area. Building upon the core competences of CE area, as well as addressing the changing needs of the stakeholders, it is important to set clear focuses for the 2nd half of the Sixth Phase. The current 6 Tasks under CE area can be rearranged into the focuses set out below. Additionally, a Task on Technology will be developed under KRC.

It is important to promote further cross-area collaboration between IGES Areas with strong urban focuses, such as KUC, IPSS, CE, BJG and SCP. The Adaptation team in NRE also has a research component on multi-municipalities collaboration for climate resilient development planning. A cross-area collaboration

mechanism will be developed, likely to be led by PMO and facilitate communication, joint projects and other activities in due course.

2.1.4. Self-evaluation at the end of the Phase (July 2017)

Impact generation

CE influenced UNFCCC negotiations and international discussions towards COP21 in various ways, such as publishing policy papers, organising side events at every COP and Subsidiary Bodies meeting, as well as directly engaging negotiations by being part of Japanese official delegations. For example, one peer-reviewed journal paper on the process for increasing the level of ambition was listed by the Nordic Council as one of the key readings, and a similar idea was incorporated in the ADP Co-chairs' final draft decision text for COP20. Those activities had an impact on the formulation of the textual language of the Paris Agreement (PA) and its adoption, especially Article 6 (market mechanisms) and Article 14 (global stocktake).

CE also influenced Japan's domestic climate policy debates, in particular, regarding the implications of new coal-fired and gas-fired power plant construction plans for Japan's 2030 emission reductions target as well as 2050 target. The issue brief published by CE was cited by the Japan Association of Corporate Executives and also featured by major newspapers. The paper induced discussions on coal-fired power plants, and had an impact on companies' management strategies as well as policymaking in the Government of Japan.

Immediately after the US decision to withdraw from the PA in June 2017, CE released a series of analytical information in order to provide the public with the facts and implications of such a decision. CE also took the lead and released IGES official comments on the US decision within the same day that the news was reported, and those timely actions impacted on opinion leaders.

In September 2015, under a CE initiative, IGES and the UNFCCC secretariat established the UNFCCC Regional Collaboration Centre (RCC) Bangkok in Thailand as one of five RCCs in the world. The RCC Bangkok provides technical support to countries in Asia and Pacific region, to participate in market mechanisms. This explicit collaboration with the UNFCCC secretariat enhanced the visibility of IGES activities in the region.

CE also contributed to implementation of actual emission reduction projects under the Joint Crediting Mechanism (JCM). CE supported and developed monitoring, reporting and verification (MRV) methodologies under the JCM and 24 JCM methodologies were officially approved by governments of Japan and JCM partner countries. CE also contributed to the official registration of 13 JCM projects. Overall expected emission reductions by those JCM projects until 2030 were more than 5 million t-CO_2.

CE organised 100 public seminars, symposiums, side events, workshops and training sessions throughout the 6th Phase, which denoted one event every two weeks, in order to provide inputs and/or generate impacts to stakeholders, and 7,300 people in total participated to those IGES events. Among those events, three "COP seminars" were held after each COP, which were organised by IGES, with Global Industrial and Social Progress Research Institute (GISPRI) and with Kanagawa prefecture, and greatly facilitated the understanding of international negotiations and movements among policymakers, private companies and NGOs.

CE initiated "IGES climate Twitter" in English and Japanese from December 2016 and has been tweeting almost every day, in order to strengthen its outreach ability through social networking service (SNS) as one of emerging tools in the world. There were only 250 followers at the end of Sixth Phase but the total number of views reached approximately 120,000 in half a year.

Outputs

CE generated various types of outputs ranging from the Flagship Report before COP21, peer-reviewed papers, policy briefs, issue briefs, working papers, submissions to the UNFCCC, newsletters and databases. During the Sixth Phase, CE published 78 publications in total and released 80 databases, which meant CE generated an output almost every 10 days. Some of the outputs were made in collaboration with international partners, such as World Resources Institute (WRI), Energy Research Institute (ERI) and the Overseas Development Institute (ODI), and widely circulated through their channels.

Fund raising and opportunity creation

CE succeeded in securing more than JPY 2.0 billion (USD 18 million) of external funds during the Sixth Phase. Most of them are from the Ministry of the Environment of Japan but CE accomplished to contract with international institutions including World Resources Institute (WRI), Korea Environment Institute (KEI), the World Bank group and BMUB (German Ministry of Environment, Nature Conservation, Building and Nuclear Safety).

Overall

Thanks to continuous efforts by CE with various support from all areas and teams in the institute, IGES was named "Top Climate Think Tank outside of North America and Europe" and "No. 7 in the world" in the 2016 edition of the ICCG Climate Think Tank Ranking.

2.2. Natural Resources and Ecosystem Services

2.2.1. Goals set in the ISRP6 *(excerpt)*

In the research area of Natural Resources and Ecosystem Services, strategic research activities will be carried out to maintain and enhance the resilience of the natural resources and ecosystem services that support the livelihoods of people in Asian countries. From a basic common viewpoint on appropriate payment for ecosystem services and community-based participatory governance, integration of the four sectors which made up the natural resource management group in the Fifth strategic research phase, namely forest, biodiversity, water and climate change adaptation, will be actively undertaken. IGES will make every effort to transmit and disseminate its research outcomes through proactive involvement in knowledge platforms for exchange of knowledge and experience related to climate change adaptation, REDD+ and appropriate payment for ecosystem services, and through collaboration with practicing communities. In addition, relevant international frameworks and financial mechanisms will be analysed and assessed, and recommendations on appropriate institutional design will be communicated.

2.2.2. Intended impacts/outcomes by the Area

- Conservation of natural resources through institutions (policies and organisations) that effectively and fairly deal with the increasing competition over land, water and forests.
- Conservation of forests through REDD+ strategies and implementation of management plans.
- Improved management of biodiversity through National Biodiversity Strategies and Action Plans
- Increased preparedness and adaptive capacity for shocks and long-term trends associated with climate change, including more resilient agricultural and rural livelihood systems.
- Improved management of water resources to deal with scarcity and quality threats.

2.2.3. Self-evaluation and recommendations at the mid-Phase review (February 2015)

During the 1st half of the Sixth Phase, Natural Resources and Ecosystem Services (NRE) Area focused on four thematic issues, namely forest, climate change adaptation, water, and biodiversity and ecosystem services, as well as an integrative approach to resilience of livelihood addressing nexus between land, water, food and energy. On the thematic issues, highlights in impacts/outcomes generation include:

- Community-based forest management in the region promoted through the wide use of IGES tools and guidelines by the practitioners and training communities, such as the training manual on community-based forest biomass monitoring
- Risk assessment guidelines prepared by The Nature Conservancy (TNC) based on IGES policy report on risks and legal compliance of tropical timber trade
- Sustainable use of socio-ecological production landscapes and seascapes being promoted through pilot projects under the Satoyama Development Mechanism (SDM) of the International Partnership for the Satoyama Initiative (IPSI).
- Local governments at the Silang-Santa Rosa River basin in the Philippines initiated inter-municipality coordination to enhance local Comprehensive Land-use Plans with climate consideration, working together with IGES pilot project on integrated approach to mainstream adaptation-mitigation concerns into local development planning.

Other than the tangible impacts/outcomes mentioned above, several opportunities were created through continuing efforts made by the NRE members on nexus study and thematic areas. These include:

- Invitation from UNESCO to work on World Water Development Report 2015, in particular a chapter on water-food-energy nexus
- Invitation from the World Bank to carry out energy sector water demand research in India
- MoU between Nepal Ministry of Forests and Soil Conservation (MoFSC) and IGES for making use of the national forest governance standard developed by IGES and its partners
- Collaboration with UN-FLORES to establish a regional consortium for a nexus observatory in Asia focusing on the water-soil nexus
- Participation in research effective design and use of satellites for natural resource conservation

It should be noted that some members of NRE, in particular those engaged in adaptation and REDD+ operations has been working closely with the Ministry of the Environment of Japan on UNFCCC and IPCC processes and providing constant inputs to support their activities. In addition to this, a member of NRE was a contributing author of the IPCC Working Group III 5th Assessment Report (IPCC WGIII AR5) and four IGES papers on climate change adaptation were cited in the report.

Financial trends

NRE has kept the same level of external funding volume in the first half of the Sixth Phase, starting with JPY214 million in FY2013, followed by JPY241 million in FY2014. Provisional budget size for FY2015 is around JPY257 million which includes C-level (unsure) fund projects of JPY18 million after 50% reduction. It can be remarked that the size of each fund is relatively small (funds over JPY10 million make up four out of 22). 14% of funding for FY2014 is received from non-Japanese sources including UNU-IAS, APN and WB.

Recommendations

With respect to the on-going efforts made by the NRE team in addressing ‘resilience of the natural resources and ecosystem services that support the livelihoods of people in Asian countries’ stipulated in the ISRP6, this direction will be further enhanced with the ‘landscape approach’ for integrated natural resource management currently discussed in the area exercise on the medium-to-long term strategy.

The 'landscape approach' would not conflict with, but rather strengthen the current competence of NRE and basic approaches taken, such as strong emphasis on field- and evidence-based research and the community-based approach.

It is suggested to start piloting the application of this approach in selected NRE activities, and through this, the concept and approach will be further shaped. The approach will be further elaborated and applied to other activities in due course, so that Area-wide coherence on thematic research will be strengthened with the common approach.

Another action to be taken is the strengthening of Institute-wide capacity in addressing the increasing needs on climate change adaptation policy and implementation in the region. Streamlining of the current structure developed over time in the 1st half of the Sixth Phase, i.e. two Tasks in NRE and APAN operation based in BRC, would provide a solid foundation for a coherent operation on Institute -wide adaptation related activities.

2.2.4. Self-evaluation at the end of the Phase (July 2017)

Impact generation

Through the course of the Sixth Phase, efforts to generate impacts were institutionalised in NRE operations and are evident in all projects. Some types of impacts illustrated with examples are:

- Drafting of guidelines for government: Working with several ministries in Japan and research institutes, NRE finalised three guidelines for JICM REDD+ on methodology, safeguards and project design. The Government of Japan is now using these guidelines as a starting point for negotiating arrangements for JCM REDD+ with partner countries. As a result of ongoing advisory and other support from IGES to the Government, progress in the negotiations with Laos and Viet Nam can be observed.
- Drafting and advocacy on standards: The national forest governance standard developed by IGES and its partners through an inclusive multi-stakeholder process was adopted by the Government of Nepal, which is now working with IGES on strategies for implementation.
- Generating data/information to inform plans and policies: The IGES pilot project in the Silang-Santa Rosa River basin in the Philippines provided projections of future flood risks under alternative land use scenarios and set out countermeasures. The project data has been extensively incorporated into the Santa Rosa climate change action plan.
- Design of new projects: NRE researchers have worked with the Institute of Inclusive Finance and Development in Bangladesh on the design of a JICA technical co-operation project that will test the contribution of financial and non-financial interventions to household resilience in areas of Bangladesh vulnerable to climate change.
- Contribution to regional and global assessments: In addition to providing written inputs for the IPBES Asia Pacific Regional Assessment, IGES provided a case study on the ILK of Karen communities in northern Thailand, and facilitated as well as contributed to the outputs of workshops with ILK holders and experts aimed at incorporating ILK in the regional assessment.
- Impacts through publications, databases, etc.: IGES has been acting as the WEPA Secretariat to facilitate knowledge sharing through the WEPA database. In FY2016, the database had over 100,000 hits from Asian developing countries.

Outputs

In FY2015, NRE generated 69 outputs and in FY2016 68 outputs, excluding presentations. A lot of diversity can be seen in the types of outputs produced, e.g. in FY2016, there were 13 issue briefs, 11 peer-reviewed journal articles, 3 each of book chapters, training materials and videos, and a number of conference papers, web pages, and outreach material such as fliers and brochures, etc. Some of the key outputs were:

- IGES Policy Briefs on "Promoting the Landscape Approach in Asia-Pacific Developing Countries: Key Concepts and Ways Forward", "SDGs, DRR and CCA: Potential for Strengthening Inter-linkages," and "Improving Irrigation Water Use Efficiency Holds the Key to Tackling Water Scarcity in South Asia: Technical Potential and Financing Options"
- Peer-reviewed journal articles on "Climate change-related non-economic loss and damage in Bangladesh and Japan", *International Journal of Climate Change Strategies and Management*; "Economic and Land Use Impacts of Improving Water Use Efficiency in Irrigation in South Asia", *Journal of Environmental Protection*; and "Characteristics of the remote sensing data used in the proposed UNFCCC REDD+ forest reference emission levels (FRELs)", *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*
- NRE ISAP2016 Issue Brief series
- "Climate Security in Japan Discussion Paper Series" (IGES/Adelphi)

Fund raising and opportunity creation

The total annual budget secured by NRE steadily increased over the Sixth Phase from about JPY214 million in FY2013 to about JPY260 million in FY2016. An ongoing concern has been reliance on single-year budgets for projects commissioned by the Ministry of Environment of Japan. Many efforts were made to secure multiyear research and project funds from within and outside Japan. The fruits of these efforts can be seen in new projects secured during the Sixth Phase, including: (i) RAFT Phase 3, 2016-2018, funded by Government of Australia, (ii) projects on risk insurance, loss and damage, payment for forest ecosystem services, and the water-energy-food nexus funded by APN, (iii) project on Earth observation for policy cycle innovation, 2014-2016, funded by JST, (iv) project to establish an environmental conservation platform for Tonle Sap Lake, Cambodia, 2016-2020, funded by JICA/JST SATREPS (v) project on Satoyama funded by GEF, 2015-2019, (vi) project on climate-fragility risks, 2016, funded by adelphi, and (vi) several kakenhi research projects. Funding from within Japan was also diversified, with several contracts secured from the Forestry Agency and the Ministry of Foreign Affairs.

Overall

A major challenge for NRE in the Sixth Phase was to operate as a well-coordinated team of researchers working collaboratively towards a common goal or vision. Expectations were placed on NRE to increase its funding base and researchers worked hard to achieve this, resulting in an increase in the number of projects that the group was involved in. With this expansion in the number of projects came the risk of fragmentation of work within NRE. While researchers worked dedicatedly to secure new funding and fulfil their project commitments, the importance of integration within the group was recognised. The strategy adopted to achieve this involved developing a common vision, conducting some group-wide projects and increasing the number of funded multiyear research projects. These are ongoing efforts to be continued in the 7th Phase. The group worked together on the concept of "landscape approach" as an integrated approach to natural resource management that aims to conserve biodiversity while achieving development goals, such as food and water security, livelihood generation, and climate change mitigation and adaptation. Several group-wide initiatives were launched, including a series of publications for ISAP2016. Building on these efforts, in the 7th Phase NRE can apply the landscape and related concepts to draw out and synthesise lessons from it various projects, with the aim of contributing to the development of broader ideas and theories on how the Asia-Pacific region can better manage its natural capital and ecosystem services.

2.3. Sustainable Consumption and Production

2.3.1. Goals set in the ISRP6 *(excerpt)*

In the Sustainable Consumption and Production research area, strategic research activities will be carried out toward sustainable consumption and production in Asian countries, and further to realise the corresponding changes in business practices and lifestyles of the people. In the Sixth Phase, research will be advanced utilising knowledge and channels accumulated to date. Emphasis will be placed on appropriate waste treatment in cities, including composting, formation of effective recycling systems with a view of Asia as a whole, policy analysis from the perspective of sustainable production and consumption centred on improvement of resource productivity, and policy recommendations focused on lifestyle changes. Furthermore, based on the groundwork of knowledge related to material flow, resource productivity, waste management and 3R policies cultivated by IGES to date, integrated research on sustainable consumption and production, including natural resources, water, food, and energy, will be initiated. Meanwhile, key policies and initiatives in the context of Asia will be analysed and assessed, and results communicated to relevant policy processes.

2.3.2. Intended impacts/outcomes by the Area

- Regional/global discussions are provoked on urgent actions for resource saving and sustainable consumption
- A “REDUCTION” concept is mainstreamed taking into account the context of both emerging and maturing economies
- 3R policy formulation and its implementation is promoted both at regional and national level
- Higher attention is received on policy nexus of climate and 3Rs and linkage between international initiatives on low carbon and resource saving society
- Multi-stakeholder dialogue and collaboration (especially between community and experts) is promoted for decontamination and rehabilitation process in Fukushima (Completed in FY 2014)

2.3.3. Self-evaluation and recommendations at the mid-Phase review (February 2015)

The Sustainable Consumption and Production (SCP) Area made steady progress in many aspects of the original goals speculated in ISRP6. Various operations led by SCP can be categorised in two work streams, namely (i) promotion of sustainable consumption and production policy and its implementation, (ii) promotion of 3Rs policy and its implementation, including support to less developed countries addressing their immediate needs on integrated waste management. SCP team has developed the concept of a phased approach to foster countries in the region, which respectively are at different development stages, to make step-by-step progress in their transition to the wise use of finite resources.

As for the promotion of sustainable consumption and production, continuing support to UNEP and governments in the region including the Ministry of the Environment of Japan has led IGES to play key roles in global and regional SCP discourse. The most significant achievements in terms of impacts/outcomes and new opportunities developed include:

- Taking a lead in the UN decade programme – SCP 10YFP: assuming board member representing the Government of Japan; and guiding the programme of sustainable lifestyle and education (SLE) component.
- Promoting a “REDUCTIONS” concept among policymakers in the region.

As for the promotion of 3Rs policy and its implementation including integrated waste management, SCP team worked closely with global and regional processes such as UNEP International Resource Panel, CCAC waste initiative, OECD’s WPRPW, and Regional 3R Forum in Asia and the Pacific. Highlights of its impacts/outcomes generation include:

- 3R policy promoted through the Regional 3R Forum with IGES substantive inputs, such as provision of a set of 3R policy indicators
- EPR policy promoted through OECD processes with IGES substantive inputs, such as provision of findings and recommendations from Japanese home appliance recycling law studies
- Co-benefit approach on climate and 3Rs nexus promoted at a municipal level in selected cities in Asia with tools and trainings provided by IGES

SCP and PMO worked together to strengthen IGES's strategic partnership with UNEP. This effort has been materialised as a new and important institutional set up as:

- IGES Centre Collaborating with UNEP on Environmental Technologies with its initial focus on CCAC MSWI-related issues to be launched in 2015.

The SCP team successfully completed its mission on Fukushima Action Research on Effective Decontamination Operation (FAIRDO). In response to the urgent needs of ensuring information sharing and stakeholders participation in planning and implementation of decontamination and reconstruction after Fukushima Daiichi Nuclear Power Plant Accident, IGES convened relevant experts at local, national and international levels. Actions taken and recommendations disseminated through the project were unique amongst others, from social and political science point of view, and contributed to the strengthening of stakeholders network, including community members, for still on-going reconstruction effort in Fukushima. Necessary follow-up activities will be carried out on an ad-hoc basis.

Financial trends

The financial situation in the 1st half of the Sixth Phase is stable at the level of JPY150 million with relatively diverse funding from both Japanese and international sources. The volume started with JPY147 million in FY2013, followed by JPY133 million in FY2014. Provisional budget size for FY2015 is around JPY250 million with the new development on IGES Centre Collaborating with UNEP on Environmental Technologies, which accounts additional JPY100 million on top of SCP's steady annual operation budget level.

The majority of funding comes directly from the Ministry of the Environment of Japan and this trend is maintained. FY2013 portfolio shows that 34% came from international sources, such as ADB, UNU and UNEP. The portion dropped to 10% in FY2014 and will increase to 15% in FY2015 excluding the funding secured for the new collaborating centre. Once the funding for the centre secured from UNEP, originating from MOEJ, is included as non-Japanese funding, this will increase the rate to 49%.

A very small portion of the Strategic Fund (JPY 1 million) that was invested in FY2013 was effectively used, and partly but significantly contributed to opportunity building in IGES, leading the global discourse in SCP and relevant concepts.

Recommendations

The SCP Area is in a good position to maintain and further promote its activities in two work streams, namely (i) SCP policy and its implementation, and (ii) 3R policy and its implementation accommodating the immediate needs of countries in Asia and the Pacific such as the co-benefit approach to integrated waste management.

2.3.4. Self-evaluation at the end of the Phase (July 2017)

Impact generation

SCP Area successfully made IGES as a leading policy think-tank on SCP policy research through its involvement in the UN's decade programme of Sustainable Consumption and Production. As a result, SCP Area has expanded its collaborative activities with UNEP including development of UNEP strategy on Sustainable Consumption, development of Asia Pacific Roadmap for SCP, conducting global survey on SCP,

monitoring and evaluation of projects of Sustainable Lifestyle and Education. In addition, to establish IGES a leading research organisation of SCP Policy design, SCP Area has become a theme leader of 5 years inter-organisational research consortium on SCP Policy.

Through its involvement to G7 Resource Efficiency Alliance, UNEP International Resource Panel, OECD working party on resource productivity and waste, and Regional 3R Forum in Asia and the Pacific, IGES is now started to be recognised as a leading knowledge catalyst on resource efficiency, circular economy, and the 3Rs in the region. For example, by supporting background document or agenda development, SCP Area helped G7 process to mainstream resource efficiency agenda through its involvement in G7 processes such as G7 Toyama Environmental Ministers Meeting and G7 Resource Efficiency Alliance. Also, SCP Area provide inputs to OECD process to update new updated guidance on Extended Producer Responsibility. By developing a core set of 3R indicators for Regional 3R Forum in Asia and the Pacific, IGES in collaboration with MOEJ and UNCRD launched reporting process called State of the 3Rs in Asia and the Pacific.

SCP Area hosts newly established Centre Collaborating with UNEP on Environmental Technologies (CCET). With assistance from CCET, 2 National Waste Management Strategies in Myanmar and Cambodia, and 1 City-level Strategy for Myanmar were completed.

Outputs

IGES/SCP Area has been a lead contributor or author of three major SCP publications from UNEP such as *Sustainable Consumption and Production: A Handbook for Policymakers*. SCP Area conducted an on-line training course of UNITAR on SCP. SCP Area was invited be either speaker or chair at high-level policy forums such as the High-level Political Forum on Sustainable Development, World Resources Forum, Gordon Research Conference, and G7 Resource Efficiency Alliance.

SCP Area in collaboration with leading experts on waste management and the 3Rs, came up with a core set of 3R indicators for Regional 3R Forum in Asia and the Pacific. Based on that work, a special issue on 3R policy indicators was published in the Journal of Material Cycles and Waste Management. SCP Area has contributed to OECD's updated guidance on Extended Producer Responsibility and published a Japanese summary in collaboration with NIES. After the launch of the Circular Economy Strategy of EU, SCP Area introduced the idea of EU's policy on resource efficiency and circular economy as a timely policy brief and was featured in the Japanese media.

CCET began publishing a series of case studies and a policy report on 3R practices in Southeast Asian cities based on its collaborative activities with local communities and governments.

Fund raising and opportunity creation

During the Sixth Phase, SCP Area secured two new major source of funding for its activities: MOEJ fund and UNEP's fund to function as a Coordination Desk of Sustainable Lifestyle and Education (SLE) Programme of 10YFP and IGES Centre Collaborating with UNEP on Environmental Technologies. Through its expanding work area on SCP especially as a Coordination Desk of SLE programme, SCP Area increased funding to SCP-related activities, research and surveys. Also, SCP Area secured five years of research funding on SCP Policy Design from FY2016 (until FY2020).

As a result, the volume of budget for the SCP Area expanded from JPY 147 million in FY2013 to JPY 218 million in F 2016. Also, it is expected to reach JPY 380 million for the 7th Phase in FY2017. At the same time, diversification of the budget sources has successfully been achieved. In FY2016, the ratio of MOEJ-direct contract or commissioned work was 40%, overseas funding was 38%, and research grant was 18%.

Overall

During the Sixth Phase, SCP Area established three major working domains with solid financial basis (size of budget will be 2.58 times more in 7th Phase compared to the beginning of Sixth Phase) which will continue to be a basis for the 7th Phase. They are Sustainable Lifestyle and Consumption, Resource

Efficiency and the 3Rs, and the Centre Collaborating with UNEP on Environmental Technologies. During the Sixth Phase, SCP Area rapidly came to be recognised as a leading research think-tank on SCP policy. Also, it successfully mainstreamed resource efficiency as a major international agenda. It strengthened its collaborative relations with international stakeholders, particularly with UNEP.

2.4. Green Economy

2.4.1. Goals set in the ISRP6 *(excerpt)*

In the research area of Green Growth and Green Economy, strategic research will be carried out concerning sustainable growth in Asia, on its way to becoming the factory of the world and a huge consumer market, and the appropriate nature of economies to realise sustainable, low-carbon, resource-efficient and less-resource-use growth. In the process of the Rio +20 held in June of 2012, the complementarity between economy and the environment was widely recognised. The investment necessary for such type of development, as well as the resulting creation of green jobs, was strongly affirmed as a required pillar of new growth.

For this reason, Green Growth and Green Economy will be designated as an important issue related to sustainable development, and will be operated as one of the core research areas in the Sixth Phase. Growth strategy scenarios for Asian countries will be deliberated. Fundamentally, there needs to be clarity about the vision of a development path for Asia, as an economic growth route within the boundary of natural resource limitations. By studying growth strategy scenarios not just for growth for the sake of growth, but for improvements in the quality of life and well-being, research must be carried out on an evaluation standard to supplement GDP. Environmental costs will be estimated and internalised in economies. Moreover, a new strategy is called for—one that has investment in environmental spheres as its mainstay. As such, strategic research will be carried out related to the necessary institutional design and policy measures for the greening of economy and business and the creation of green jobs. Furthermore, it is essential to tackle the issues of decoupling and leakage. In the Sixth Phase, research activities related to green economy, previously dealt with individually in each research group within IGES, will be integrated. Research will be carried out on growth strategies in Asian countries, the necessary investment and changes in employment for the shift to a green economy, as well as the policy tools to accelerate this shift. In addition, by promoting links with the main economic drivers including private sector, strategic research in the area aims to propose practical policies that contribute to real impact generation to promote green economy.

In collaboration with NIES and JICA, newly developed low-carbon networks in Asia, such as the East Asia Knowledge Platform for Low Carbon Growth and the LoCARNet, will be made operational. Likewise, internal research cooperation within IGES will be enhanced.

2.4.2. Intended impacts/outcomes by the Area

- Developing countries make national green economy strategy and implement policies supporting the transition to a green economy.
- Asian countries make and implement appropriate policies supporting the creation of green jobs.
- Better knowledge supporting policy making on sustainable resource use can be provided by the UNEP International Resource Panel.
- The Japanese government will make new energy policy to ensure energy security after Fukushima nuclear accident and contribute ambitiously to the post-2015 climate agreement.
- Involvement of the business sector in Japan's domestic policy making processes regarding the establishment of low-carbon society will be strengthened and the awareness on business risk and opportunities as a result of global climate change impacts will be raised.
- Several low-carbon and environmentally sustainable cities can be established in Asia through the implementation of the Joint Crediting Mechanism proposed by the Japanese Government.

- South Asian countries adopts an integrated approach on resource management and planning under resource constrains and climate change impact
- A framework on ecosystem services accounting can be established in Japan.

2.4.3. Self-evaluation and recommendations at the mid-Phase review (February 2015)

The Green Economy (GE) Area made steady progress in exploring two major frontiers. One is to create an IGES niche in global, regional and national discourse on green economy and the other is to enhance its capacity in quantitative analysis on policy issues addressed by GE and other Areas.

Highlights in exploring and creating an IGES niche in global and regional discourse on green economy include:

- UNEP designated IGES as one of three Centers of Excellence supporting their Green Economy Initiative to support African countries for making national and sectoral strategies and planning for green economy. UNEP published, among others, "Guidance Manual for Green Economy Policy Assessment", "Using Models for Green Economy Policymaking" and "A Guidance Manual for Green Economy Indicators" for which IGES has provided substantive inputs, in the area of quantitative assessment of green economy policies.
- ILO completed green jobs mapping in Malaysia, the Philippines and Indonesia. IGES joined ILO Green Jobs Programme and Green Jobs in Asia and the Pacific Project to support ILO establishing their quantitative methodology for green job mapping and analysis, i.e. employment and environment-extended green DySAM.

Selected achievements in impacts/outcome generations at the national level in particular in Japan include:

- The Government of Japan adopted Green Gift Scheme proposed by IGES and will implement it through the FY2015 tax reform package. The scheme designed to support domestic renewable energy investment was listed in FY2014 tax reform package as an item for further consideration. A series of follow-up activities including a public symposium, policy dialogues, media coverage/articles and other PR activities has provoked a national level discussion and led to its adoption in the FY2015 package.
- The Japan 2050 Low Carbon Navigator was developed and has been attracting a wide-range of stakeholders, including governmental organisations (MOEJ and METI), academia, NGOs, and university students and related associations. The Navigator is designed as an easy-for-communication simulation tool supporting policy discussions/dialogues has been subject to many media coverage/articles since its launch in summer 2014.

Enhanced capacity in quantitative analysis, some of which directly contributed to the above mentioned significance includes:

- The Japan 2050 Low Carbon Navigator (in both Excel model and as a web tool) together with a User's Manual in Japanese and English, a quick introduction leaflet, and a research report, etc. are available on the IGES website.
- Employment and environment-extended green DySAM (dynamic Social Accounting Matrix)
- Computable general equilibrium (CGE) model and the multi-region input-output (MRIO) model for assessing the policy impacts of sustainable resource use in terms of carbon and resource footprints.
- GTAPinGAMS model for assessing the carbon tax policy in Japan and border carbon adjustment measures.
- Quantification and evaluation of ecosystem services using GIS/remote sensing techniques and environmental economics.
- GIS/remote sensing techniques for vegetation, land use and land use change analysis, etc.
- Integrated assessment approach based on the hydrological model and the energy system model for integrated water and energy management at the river basin level.

IGES research Areas benefited from GE's support based on its analytical expertise may include CE, NRE and IPSS.

Financial trends

GE has doubled its external funding in the first half of the Sixth Phase, starting with JPY48 million in FY2013, followed by JPY122 million in FY2014. The volume is relatively small amongst all IGES research areas, however, GE has actively contributed to other Areas' external fund projects utilising their expertise in model analysis. GE has also effectively utilised IGES strategic research fund for business development. JPY0.9 million in FY2013 contributed to the success of Green Gift activities and JPY3.5 million in FY2014 has contributed to the successful launch of the 2050 Japan Low-carbon Navigator. Most of the funding is from MOEJ, and funding from non-Japanese sources including the Wuppertal Institute, ILO and UNEP only make up 4% of the amount in FY2014. In FY2015, the provisional budget is larger than that of FY2014 since International Research Network for Low Carbon Societies (LCS-RNet) will be operated under GE with a large amount of external funding.

Recommendations

It is suggested that GE will continue its current approach in exploring two major frontiers, namely (i) creation of an IGES niche in global, regional and national discourse on green economy; and (ii) enhancing its capacity in quantitative analysis on policy issues addressed by GE and other Areas.

Amongst others, further promotion of the Japan 2050 Low Carbon Navigator for use by relevant stakeholders in Japan, as well as the development of a city version applicable to municipalities in Asia and other regions receives high priority in GE's operations in the 2nd half of the Sixth Phase. To this end, LCS-RNet/LoCARNet team will reunite with GE. Communication with key stakeholders in the region, as well as collaboration with NIES, a key partner in Navigator development, is expected to be strengthened with this arrangement.

As for the stabilising GE's financial situation, proactive involvement in externally funded projects led by other Areas from the planning and proposal writing stage is commendable. Each research Area which can better utilise the sophisticated quantitative expertise provided by GE is encouraged to strengthen its communication and embed such quantitative analysis components into their research design. Through this practice, opportunities for joint tool development can increase to address stakeholders' needs identified through various operations carried out by other Areas.

2.4.4. Self-evaluation at the end of the Phase (July 2017)

Impact generation

Throughout the Sixth Phase, GE made commendable progress in providing better knowledge on the effectiveness of low-carbon and green economy policies and supporting policy discussions and multi-stakeholder consultations through quantitative assessment, the development of user-friendly analytical tools, proactively engaging with business stakeholders, and international and regional knowledge platforms.

GE's contributions to the **green economy discourse at the global and regional levels** have been impressive. Major highlights in during the Sixth Phase include the following:

- GE contributed to drafting and reviewing a total of 15 UNEP reports relating to green economy assessment, sectoral assessment and methodology development to support national-level decision making through policy processes of UNEP under the Partnership for Action on Green Economy (PAGE). Some of these reports have been used as inputs to drafting national green economy strategies, such as in Kenya and Burkina Faso.

- Under the ILO's Green Jobs Programme, GE contributed to preparing a total of five assessment reports on the job implications of green growth and climate change policies in Indonesia, Malaysia and the Philippines. ILO-IGES green jobs mapping study was used for developing relevant policies and a roadmap on green jobs in Malaysia.
- Under a consulting project funded by the Global Green Growth Institute (GGGI), GE helped develop a set of outcome indicators for Mongolia's National Green Development Policy.
- GE developed a couple of practical, user-friendly tools for to support policymaking, communications and capacity building. The Japan 2050 Low Carbon Navigator, an energy and emissions scenario simulation tool developed jointly by IGES and NIES, was referred to in the Joint Statement by the Governments of the United Kingdom and Japan on the occasion of the visit of Prime Minister Abe to the UK on 1 May 2014. In addition, with the financial support of IGES Strategic Research Fund, GE developed the Sustainable Development Goals Interlinkages and Data Visualisation Web Tool, which allows users to visualise the interlinkages between the 169 SDG targets, explore and download indicator-level data for nine Asian countries, and compare performance over time.
- In FY2016, IGES became a Knowledge Partner of the Green Growth Knowledge Platform (GGKP), which promotes a green economy transition by providing practitioners and experts with information, data, communication tools, policy guidance and examples of good practices. IGES has taken the initiative to utilise the platform particularly for dissemination of IGES knowledge products through GGKP homepage as well as through customised webinars.

GE also made some significant impact/outcome at the **national level in Japan**.

- The IGES proposal on "Green Gift" provoked national-level discussion on an innovative mechanism to mobilise personal assets for accelerating financing for low-carbon investment in Japan. It has received considerable attention as a practical policy proposal and was included in items for deliberation in the FY2014 Taxation Reform Principles.
- IGES served as the secretariat of a forward-looking business coalition on climate change and supported its actions. The group issued a set of policy recommendations to Japan's policymakers regarding Japan's NDCs and climate action plan, calling for an 80% reduction of greenhouse gas emissions by 2050, as well as called for leadership on climate negotiations at COP22.
- GE supported businesses to deliver their voice through policy recommendations as well as through active participation to the climate policymaking processes such as on Japan's preparatory plan for National Long-term Low-carbon Development Strategy.
- GE also contributed to changing the corporate as well as business media narrative on climate and energy. Based on activities in 2016, news coverage on 'stranded assets' increased five-fold from 8 in 2015 to 41 in 2016. GE also made extensive input to business/finance media which resulted in over 70 news articles generated just in 2016.
- GE had also supported corporate actions on transition to a net zero emission. Background, trends and details of risks and opportunities around climate change were given as a brief to businesses in the forms of regular newsletters, dialogues, participation to COP22 and through providing simulation of financial impact of carbon pricing to their businesses. This resulted in several companies steering their position towards decarbonisation.

- IGES was also proactive in facilitating discussions on the Paris Agreement by two research networks (LCS-RNet and LoCARNet) under GE.
- Considering the growing importance of scientific support to climate policy processes after the Paris Agreement, in FY2016, the International Research Network for Low Carbon Societies (LCS-RNet) Secretariat, steering group and government focal points members initiated in-depth discussions on the future of LCS-RNet, taking advantage of various opportunities (at the LCS-RNet 1st Government Focal Point Meeting in April 2016; at the LCS-RNet 8th Annual Meeting in September 2016; at COP22 in November 2016; individual meetings with each steering group member in March 2017, etc).
- Also, having reviewed the past efforts and activities, the two networks decided to strengthen the framework as a group of action-oriented researchers from FY2017. Meanwhile, looking at Asia,

and based on the Paris Agreement, each country began to focus on low-carbon development in line with their country-specific Nationally Determined Contributions (NDCs). In this regard, GE supported Asian countries to develop research communities with real ownership in each country, which will be key to setting the long-term foundation for policy formation.

Outputs

- Zhou, X. and Moinuddin, M., Li, Y. 2017. SDG Interlinkages and Data Visualisation Web Tool. Hayama: IGES.
- Zhou, X., Xu, M., Moinuddin, M. 2016. Assessment on the labour market implications of Indonesia's Nationally Determined Contributions. Commissioned report submitted to International Labour Organization (ILO).
- Zhou, X. and Moinuddin, M. 2016. Indicators for Mongolian National Green Development Policy: Review and Proposal. Commissioned report submitted to the Global Green Growth Institute (GGGI).
- Zhou, X., Kuramochi T. Wakiyama, T., Moinuddin, M. 2016. Japan 2050 Low Carbon Navigator: Web Tool Version 2. Hayama: IGES.
- Moinuddin, M., Zhou, X, Kuramochi, T., Kuriyama, A. Wakiyama, T., Ashina, S. 2015. Japan 2050 Low Carbon Navigator: Overview and Trajectory Setting. IGES Research Report. Hayama: IGES.
- LCS-RNet Secretariat, LCS-RNet Steering Committee, C. Cassen, U. Schneidewind, 2016. Post Paris Agreement Progress Report of the International Research Network for Low Carbon Societies (LCS-RNet). Energia, ambiente e innovazione, 1/2016
- T. Ishikawa and S. Nishioka, 2017. Carrying out the Paris Agreement: Role of research communities in supporting scientific climate policy. Journal of Renewable and Sustainable Energy

Fund raising and opportunity creation

GE made great efforts to increase its external funding progressively by creating research opportunities with several leading international and UN organisations. During the Sixth Phase, GE provided technical support to UNEP's Green Economy Initiative and produced a number of funded commissioned reports relating to national and sectoral strategies and planning for green economy in several African countries. In addition, GE was commissioned by the International Labour Organization (ILO) to provide technical expertise on a number of projects related to ILO's Green Jobs-related activities. In FY2015-2016, GE was also involved in a funded commissioned work from the Global Green Growth Institute (GGGI). Furthermore, for the work to engage business stakeholders, GE successfully gained funding from philanthropy funding organisations, including the European Climate Foundation and the Growald Family Fund. For the two research networks, based on the LCS-RNet contract, GE received a new contract from MOEJ on Japan-France and Japan-Germany bilateral cooperation projects. Also, based on the LoCARNet contract, GE received several new contracts from JICA, MOFA and NIES.

Aside from external funding, GE actively contributed to other IGES research Area's externally funded projects utilising GE researchers' expertise and modelling skills. GE also utilised IGES Strategic Research Fund (SRF) for developing cutting-edge models and techniques such as the Japan 2050 Low Carbon Navigator and the SDG Interlinkages and Data Visualisation Web Tool. IGES SRF also contributed to GE Business Team's success of the high impact Green Gift activities as well as engaging with corporates.

Overall

Despite its limitations in terms of human resources and funding, GE worked quite efficiently towards achieving its targets set under the ISRP6. It conducted some world class quality research activities and produced top notch outputs such as the SDG Interlinkages and Data Visualisation Web Tool and the Japan 2050 Low Carbon Navigator. It contributed to policy processes at global, regional and national levels in collaboration with some of the major international players in the relevant thematic areas, as well as important stakeholders such as businesses, through which the recognition of IGES as a top rank environmental think tank by the world community has been enhanced. GE's own self-evaluation of its performance during the Sixth Phase is "excellent".

In the Sixth Phase, GE focused on exploring two major frontiers, namely (i) creation of an IGES niche in global, regional and national discourse on green economy; and (ii) enhancing its capacity in quantitative analysis on policy issues addressed by GE and other Areas. Based on this experience and its continuation to the 7th Phase, the new IGES Strategic and Quantitative Analysis Centre (QAC) as well as Business Task Force have been established. It is expected that QAC will carry on the momentum from GE in applying its quantitative analytical expertise and modelling skills for supporting practical policymaking cycle, and continue to engage with businesses as important stakeholders.

GE and the current QAC make up a specialised technical team focusing mostly on innovative research methods for quantitative policy assessment and for developing analytical tools. One issue that GE faced in the Sixth Phase was that while it produced top-notch outputs, it could not promote them very efficiently due to GE's own lack of expertise in outreach activities as well as shortage of human resources.

As for stabilising GE's financial situation, GE made great efforts to increase its external funding progressively by creating research opportunities with several leading international and UN organisations, including UNEP, ILO, GGGI and the Wuppertal Institute, etc. GE has also, for the first time at IGES, successfully obtained external funding from two philanthropy funding organisations namely the European Climate Foundation and Growald Family Fund for its work to engage with businesses to further encourage policy developments. In addition, GE successfully obtained a couple of competitive research funds, such as the Grant-in-Aid for Scientific Research of the Japan Society for the Promotion of Science (JSPS) and the Asia-Pacific Network for Global Change Research (APN). Moreover, GE was proactively involved in externally funded projects led by other Areas from the planning and proposal writing stage is commendable. Each research Area which can better utilise the sophisticated quantitative expertise provided by GE is encouraged to strengthen its communication and embed such quantitative analysis components into their research design. Through this practice, opportunities for joint tool development and research can increase to address stakeholders' needs identified through various operations carried out by other Areas and create new funding opportunities.

For research networks in GE, based on our long years' activities, the growing importance of researchers' networks connecting science with policy has been recognised. In 2015, LCS-RNet sent out the declaration, "A moment of truth for climate and sustainable development", to COP21, signed by 217 climate change scientists including 74 authors, chairs and co-chairs of the Intergovernmental Panel on Climate Change (IPCC). In addition, in 2016 at the G7 Environment Ministers' Meeting (EMM), we successfully put the sentence of "we acknowledge the importance of research on future scenarios, strategies, and target of each country, as well as knowledge sharing through researchers' networks" in the communique. These have contributed in a significant way to keep or even strengthen the momentum amongst our network members.

2.5. Integrated Policies for Sustainable Societies

2.5.1. Goals set in the ISRP6 *(excerpt)*

The area of Integrated Policies for Sustainable Societies will take an integrated approach to address multifaceted issues facing countries in the Asian region in the pursuit of a sustainable society, based on a long-term view. In the process of transitioning to sustainable societies, it is fitting not only to consider environmental concerns, but also to explore ways of making substantial revisions and changes in existing socio-economic systems. Various factors make up the background, such as the constantly changing state of societies, economies and the environment, as well as technological progress and improved access to information. In many cases these changes are manifested as revisions in governance related to decision-making and implementation.

In the Rio+20 processes, a broad consensus was made on the importance of social inclusion in the pursuit of global transition towards sustainable societies. Such a consensus was based on the common recognition on the social exclusion that exists, such as the disparity between the rich and the poor, even within a country, despite the fact of global and national economic growth. As such, this area will deal mainly with

social issues faced globally, regionally, nationally and locally in the pursuit of sustainable societies, on governance and empowerment of people for enhancing participation and social inclusion. As shown below, priority issues in this area will be broadly divided into pragmatic research on "mechanisms to realise meaningful participation of stakeholders" and the "education and capacity building for sustainable development" that make this participation possible.

One key issue is research on the development of environmental governance that is participatory and inclusive for diverse stakeholders at multiple levels, from regional to local and municipal levels. In particular, close examination will be made of the environmental policy integration likely to occur in the context of economic integration directed at the start of an ASEAN Community (2015), as well as of trends in the TPP and additionally the economic integration that has begun between Japan, China and the ROK. For instance, implications for environmental governance in Asia will be clarified, bearing in mind the environmental institute and network for Asia proposed in a recent white paper. Furthermore, more pragmatic research will be conducted on participation in the drafting process of post-2015 development goals and sustainable development goals (SDGs).

Meanwhile, the empowerment of people is indispensable, with meaningful participation by diverse stakeholders as a prerequisite for a shift towards sustainable societies. Issues surrounding this, such as improved access to education and information, and the realisation of gender equity must be addressed carefully in detail. As such, strategic research activities on education and capacity development for sustainable development must be intensified and focused on more specific issues.

In promoting the above strategic research, coordination and cooperation with ASEAN (e.g. Environment Ministers Meeting, Secretariat), including policy input into these processes, will be essential. Further, stronger responses to environmental problems that transcend national boundaries are clearly an important issue, and deliberations on improved regional governance on transboundary air pollution will be continued.

2.5.2. Intended impacts/outcomes by the Area

- Several countries adopt education for sustainable consumption policies and standardised approaches to evaluating education for sustainable development policies.
- More Asian countries join the Climate Change and Clean Air Coalition (CCAC) leading to reductions in transboundary air pollution; and a Green Climate Fund recognises and rewards co-benefits.
- A Post-2015 Development Agenda reflects lessons learned from MDGs and meaningfully incorporates "governance" into targets/indicators and implementation mechanisms
- A standardised set of MRV tools and methods facilitate sustainable low-carbon planning and governance in cities in Asia

2.5.3. Self-evaluation and recommendations at the mid-Phase review (February 2015)

The Integrated Policies for Sustainable Societies (IPSS) Area made unique outreach to global and regional stakeholders, as well as to stakeholders in Japan.

Highlights in impacts/outcomes generation include:

- Contribution to the global discourse on SDGs and the Post 2015 Development Agenda through IGES recommendations disseminated through the Open Working Group (OWG), the Independent Researchers Forum (IRF) and other relevant international fora
- Contribution to the national discourse on SDGs and the Post 2015 Development Agenda in Japan through timely provision of translations of key UN documents, which has enhanced the awareness and understanding on the on-going processes among Japanese stakeholders
- Contribution to education for sustainable development (ESD) through: Leadership in UNESCO World Conference on Education for Sustainable Development (ESD); publications on M&E of ESD and other

relevant issues; being a member of the UNEP project Advisory Group on Institutional Strengthening of Education for Sustainable Consumption (ESC), and coordinating the Regional Network for Asia and the Pacific of the Partnership for Education and Research about Responsible Living (PERL)
- Promotion of city-to-city collaboration on low-carbon development between Bandung and Kawasaki
- Promotion of a co-benefits approach in Asia through the Climate and Clean Air Coalition (CCAC), and through the World Health Organization (WHO) mainstreaming SLCPs into Asia Environmental and Health Ministers work plan

Other significant achievements include:

- IPCC Fifth Assessment Report (AR5) cited IGES book on transport co-benefits in Asia.
- An Asian City Database on low-carbon technology transfer preparedness currently under development and to be ready by March 2015.

Financial trends

IPSS has successfully increased external funding in the first half of the Sixth Phase from JPY 141 million in FY2013 to JPY214 million in FY2014, which shows a 51% increase. In particular, city-to-city low-carbon projects have been developed under the JCM related funds from MOEJ. Co-benefit activities have also increased their funding volume with a diverse portfolio. It shows more than half of the amount was funded by non-Japanese sources such as ADB, UNEP, CAA in FY2014, although the Area-wide figure shows 20% which is a relatively high proportion in other Areas. Kanagawa funding which has been the main fund for education activities will be terminated in FY2015, and no alternative funding is yet indicative at this stage.

Recommendations

Acknowledging the aforementioned achievements and progresses made in the 1st half of the Sixth Phase, simplification of the current Tasks under IPSS is suggested together with minor readjustment of components under the respective Tasks.

Firstly, a practical arrangement has been suggested to merge Tasks 1 and 5 which share a common focus on post-2015 development agenda and SDGs. It is also suggested that components under other Tasks with cross-cutting nature, such as gender related research under Task 3 can be integrated to the new Task 1. An Institute-wide Flagship Project on the post-2015 development agenda and SDGs was established under Task 1 in early FY2014 with its focus shifted from goals and target setting to means of implementation. The Flagship Project functions as the operational hub to promote strategic outreach to the relevant global and regional processes. The suggested streamlining of relevant Tasks and components can enhance coherent operations on relevant international processes that IGES should deal with in the 2nd half of the Sixth Phase.

Secondly, because the long-standing subsidy from Kanagawa prefecture will cease at the end of FY2014, operations under the current Task 2 ‘Education and Capacity Development for Sustainable Development’ will be moved to the PMO. It will be carried out in conjunction with its strategic operation on capacity development. During the 2nd half of the Sixth Phase, it is intended to redevelop operational and financial portfolio.

It is important to promote further cross-area collaboration between IGES Areas with strong urban focuses, such as KUC, IPSS, CE, BJG and SCP. Adaptation team in NRE also has a research component on multi-municipalities collaboration for climate resilient development planning. A cross-area collaboration mechanism will be developed, likely to be led by PMO and facilitate communication, joint projects and other activities in due course.

2.5.4. Self-evaluation at the end of the Phase (July 2017)

Impact generation

The impacts will be broken down into three main areas upon which IPSS research focused in the second half of the sixth phase of IGES integrative research: 1) the sustainable development goals (SDGs); 2) co-benefits; and 3) sustainable cities (in collaboration with the city task force).

SDGs

- In collaboration with the Global Compact, Japan (GCJN), IGES co-produced a widely publicised and well-regarded report that highlighted some of the early actions of Japanese companies on the SDGs; the report is motivating further private sector action on the new development agenda in Japan.
- IGES partnered with the MOEJ and the Japan Center for Sustainable Environment and Society (JACSES) to convene a series of well-attended "Stakeholder Meetings (SHM)" that enabled front-running companies to showcase actions on the SDGs and allowed other companies to learn from these exemplary actions.
- IGES worked with the MOEJ to ensure that the SDGs featured on the G7 and G20 agendas, and created a new initiative that would support "collaborative activities" (focused chiefly on SDG 12) on the SDGs between G7 countries.
- On the basis of several publications on SDGs governance and on follow up and review (FUR), IGES secured a contract with the Asian Development Bank (ADB) to support the mainstreaming on the environmental SDGs (SDG 12, 14, and 15) in development plans in developing countries in Asia.

Sustainable Cities (in collaboration with the City Task Force)

- Through projects on energy efficiency (Joint Crediting Mechanism feasibility studies), sustainable transport (MOEJ funded on eco-driving), and waste management (JICA funded multi-year grassroots project), IGES helped secure a memorandum of understanding (MOU) between Kawasaki and Bandung that has opened new opportunities for knowledge exchange and learning on sustainable cities. This work is often carried out in coordination with the Bandung Institute for Technology (ITB).
- In cooperation with the National Institute for Environmental Studies (NIES) and Bogor Institute for Agriculture (IPB), IGES conducted a series of surveys and focus groups on energy savings and transport behaviour that are informing low-carbon planning in Bogor, Indonesia.
- In Semarang, Indonesia, IGES worked with Diponegro University, the Asian Institute for Technology (AIT), and Rockefeller 100 Resilient Cities to develop an analysis of transport policies on climate change and air pollution; follow up actions are looking at how to increase the ridership of Semarang's bus program to realise the estimated reductions in air pollution and greenhouse gases (GHGs).

Co-benefits

- In collaboration with the United Nations Environment Asia Regional Office, IGES is supporting the development of the Asia Pacific Clean Air Partnership (APCAP)—an initiative that is contributing to science-based policy making and greater regional cooperation on air pollution in Asia.
- In partnership with Clean Air Asia and the Asia Center on Air Pollution Research (ACAP), IGES co-developed a Guidance Framework on air quality management and is contributing to the implementation of a multi-year capacity building program that strengthens air quality management in several cities in and beyond China.
- In an Asian Development Bank (ADB) project funded by the Nordic Development Fund (NDF), IGES worked with the Netherlands Development Organization (SNV) to mainstream gender into climate institutions, policies and projects in Cambodia, Lao PDR and Viet Nam.

Outputs

SDGs

- 動き出した SDGs とビジネス～日本企業の取組み現場から～. 2017. IGES Policy Report
- SDGs and Business in Practice - Early Actions by Japanese Private Companies. 2017. IGES Policy Report.
- Integrated Approaches for Sustainable Development Goals Planning: The Case of Goal 6 on Water and Sanitation. UNESCAP Policy Report. 2017.
- "国連目標の実施――国連目標と国別・ステークホルダー別目標をどうつなげるか？" ("Implementation of the UN goals - How to Link the UN Goals and National and Stakeholder Specific Goals") in 持続可能な開発目標とは何か:2030 年へ向けた変革のアジェンダ (What are the SDGs?: A Change Agenda for 2030). 2017.
- Follow-up and Review of the Sustainable Development Goals: Building on, and Breaking with, the Past. 2017. IGES Issue Brief.
- "Sustainable Energy for All: Integrated Approaches to Energy under a 2030 Development Agenda" in *International Norms, Normative Change, and the U.N. Sustainable Development Goals*. 2016. Lexington Books.
- "Starting Strong on the SDGs in India, Bhutan, Korea, Philippines, and Indonesia." 2016. IGES. (Six Paper Set).
- Achieving the SDGs: From Agenda to Action. 2016. IGES Book.
- Designing and Implementing an Energy Goal: Delivering Multi-benefits for Sustainable Development. 2015. IGES Policy Brief.
- *"ASEAN Community and the Sustainable Development Goals: Positioning Sustainability at the Heart of Regional Integration" in* Greening Integration in Asia: How Regional Integration Can Benefit People and the Environment. 2015. IGES Edited Book.
- Integration and Diffusion in Sustainable Development Goals: Learning from the Past, Looking into the Future. 2014. *Sustainability*
- Towards an Integrated Framework for SDGs: Ultimate and Enabling Goals for the Case of Energy. 2013. *Sustainability.*

Sustainable Cities

- *Climate Change and Cities - Second Assessment Report of the Urban Climate Change Research Network - Summary for City Leaders*. New York; Columbia University Press, 2017.
- "Low Carbon Governance in Indonesia and India: A Comparative Analysis with Recommendations", Urban Transitions Conference Proceedings, Shanghai, 2016.
- Governing Sustainable Low-Carbon Transport in Indonesia: An Assessment of Provincial Transport Plans, *Natural Resources Forum*, 2015.
- Estimating greenhouse gas (GHG) emissions from paratransit in Bandung, Indonesia: Reducing the Transaction Costs of Generating Conservative Emissions Baselines. *Natural Resources Forum*, 2015.
- Determinants of Willing to Pay (WTP) for Renewable Energy in Post-Fukushima Japan: Results of Ordinal Multinomial Logit and Tobit Regression Models (IGES Discussion Paper)
- The Sustainable Cities Database. 2015. (v. 1.1)
- Governing Sustainability Transitions in Asia: Cases from Japan, Indonesia and Thailand, *Eco: The Korean Journal of Environmental Sociology* Vol.18

Co-benefits

- *アジアの清浄な都市大気環境のための指針 (Guidance Framework on Urban Air Quality Management in Asia).* (in Japanese). 2017. MOEJ.
- Asian Co-benefits Partnership White Paper 2016 Putting Co-benefits into Practice: Case Studies from Asia

- "City Networks and Co-benefits" and "Waste Management Co-benefits" in *Urbanization and Climate Co-Benefits.* 2017. Routledge: London.
- "Strengthening the Linkages Between Air Pollution and the Sustainable Development Goals." 2016. IGES Policy Brief.
- *Guidance Framework on Urban Air Quality Management in Asia. 2015.* Clean Air Asia.
- *Training Manual to Support Country-Driven Gender and Climate Change*. 2016. ADB.
- *Mainstreaming Gender into Climate Mitigation Activities.* 2017. ADB.
- Finding a Place for Promoting Sustainable Consumption under Korea's Green Growth Agenda: An Assessment of Governmental Strategies in a Growth Oriented Approach
- "What would be the Effects of a Carbon Tax in Japan?: An Historic Analysis of Subsidies and Fuel Pricing on the Iron & Steel, Chemical, and Machinery Industries" *AIMS Energy Studies,* 2016.

Fund raising and opportunity creation

- MOEJ. Commissioned Work on G7/G20 Cooperation on the SDGs
- MOEJ. Commissioned Work on International Trends in the SDGs.
- SRF. Project on SDGs in Japanese Business.
- SRF. Project on Subnational Data for the SDGs.
- MOEJ. Project on Short Lived Climate Pollutants.
- Clean Air Asia (through the MOEJ). Integrated Better Air Quality Project.
- Climate Change and Clean Air Coalition (CCAC)/United Nations Environment. Project on Regional Assessment for Air Pollution.
- ADB. Multi-Year Project on Gender and Climate Mitigation.

Overall

Overall, the IPSS team made significant strides over the four-year sixth research phase, illustrated by quality and timely research outputs, outcomes, and impacts. Both the content of the research and the size of the impacts expanded over time, suggesting that the area was becoming more recognised as it gained more experience and strengthened collaborative partnerships. This was clearly evident in the SDG space where IGES gained a reputation for the most informed research institute on these issues in Japan (a remark from colleagues working in JICA which is carried through to mutually beneficial engagement with the GCJN). Similarly favourable remarks were made about our ability to publish and market knowledge products on the SDGs outside of Japan; this is evidenced by recently signed cooperation with the ADB on SDGs. In terms of sustainable cities, where formally there was very limited interaction with Kawasaki, Bandung and Kawasaki are now not only working together on multiple fronts, but other cities in Indonesia have also begun cooperating with us (such as Bogor and Semarang). Also for cities work, contributions were made as authors to an internationally recognised report on climate change in cities (to be published by Columbia University). As for co-benefits, there was support given to a significant increase in budget and this was translated into several activities (such as the Integrated Better Air Quality program) that are designed to strengthen air quality management and climate mitigation across many levels in Asia. IGES has also become actively involved in regional and global policymaking processes on atmospheric pollution that will help disseminate research and deepen results (such as the Asia Pacific Clean Air Partnership and Climate Change and Clean Air Coalition (CCAC)). Last but not least, a new area of research was opened on social co-benefits that involved providing capacity building and publishing guidance materials on mainstreaming gender into climate mitigation (as part of another ADB projects).

While progress was generally made in several areas, there was also room for improvement. One such area involved greater leadership on the SDGs within IGES. IPSS was created to help raise the profile of the SDGs outside of IGES, in part, by strengthening coordination within IGES. There exists scope for enhancing IGES-wide coordination—and more work can be done on making an integrated approach part of the way that IGES works on the SDGs moving forward. Improved management as was another area that could be addressed. Largely due to the challenges of the Area Leader, IPSS struggled to stay up to date on administrative issues that caused unnecessary stress at certain junctures (for instance, planning a workshop or adjusting times on BCS). A third area involved funding. While IPSS saw its funding increase from the beginning to the middle of the research phase, diversifying funding sources and maintaining a

reliable budget were a significant challenge. Diversification is particularly important to creating opportunities for greater collaboration across Japanese and non-Japanese staff within the area.

2.6. Business and Environment by the Kansai Research Centre

2.6.1. Goals set in the ISRP6 *(excerpt)*

Empirical and strategic research will be carried out in the Business and Environment area to promote the expansion of sustainable business, and the innovation, diffusion and transfer of low-carbon technologies in Asia. Strategic research activities will aim to generate impacts that promote sustainable business in Asia through close collaboration with industrial groups and other stakeholders in making practical policy recommendations.

Aiming to further develop research in this area, focus will be put on business and environment, and also technology transfer. The research currently underway on low-carbon technology transfer from Japan to India will form the base of research. In the sphere of technology transfer in particular, the Climate Technology Centre and Network (CTCN) can assist. Thus, efforts will be made to devise strategic cooperation with this international network. Toward this purpose, cooperation with the Bangkok Regional Centre and UNEP-IETC (International Environmental Technology Centre) will be strengthened. Efforts are being made at present toward securing external funding for this cooperation.

2.6.2. Intended impacts/outcomes by the Area

- To build a framework for cooperation towards application of Japanese low-carbon technologies for specific clusters in India.
- Specifically, to implement concrete activities related to the practical approaches which have immediate effects by improving the method of operation management etc.
- To ensure that Asian countries (Indonesia etc.) gain a better understanding low-carbon technologies from Japan.
- Regarding the joint research of Japan China and Republic of Korea, effects are expected regarding CO_2 emissions reduction due to the development and diffusion of the selected low-carbon technologies, and the knowledge on necessary cost of low-carbon technology application to be utilised by policymakers.

2.6.3. Self-evaluation and recommendations at the mid-Phase review (February 2015)

Kansai Research Centre (KRC) focused on (i) the piloting of Japanese low-carbon technologies application in small and medium-sized enterprises in India, and (ii) increasing the level of understanding on energy/climate policies, including carbon pricing, among the policymakers and business people.

Highlights in impacts/outcomes generation in low-carbon technology transfer include:

- Japanese low-carbon technologies, such as heat pump technologies for refrigeration, installed and effectively operated by Indian small and medium-sized enterprises.
- JICA-SIDBI included the heat pump technologies recommended by IGES in their financing eligibility list.

KRC expertise and reputation developed over time on its sound knowledge of low-carbon technologies that are effective and applicable in the context of Asian developing countries and this has brought new opportunities such as:

- Leading Japanese companies started approaching KRC to conduct joint projects under JCM in Viet Nam and Thailand.

- Several proposals for joint activities raised by Indian counterparts.
- KRC researchers invited to present at high level events such as UNESCAP forum, CTCN regional workshop, Delhi Sustainable Development Summit (DSDS2014), etc.

Staff members also participated in low-carbon and resilient technology transfer related operations led by other IGES Areas and contributed to impacts/outcomes generation. These operations include CTCN and Technology Needs Assessment led by CE, as well as promotion of city-to-city collaboration on air pollution between China and Japan led by BJG.

In the area of energy/climate policy research, carbon pricing policies and research findings were shared with relevant policymakers and business people, which contributed to gain the following:

- Better understanding on carbon pricing policy and its acceptability among business communities, as well as policymakers in China, Korea and Japan.
- Attention to the importance of energy/climate policy analysis at the business level among academic societies in Asian countries.

Other than the above, KRC researchers worked closely with the Tripartite Environmental Ministers Meeting (TEMM) processes and provided substantive inputs to the TEMM Joint Action Plan. Inputs included review of the implementation of the current action plan (2010-2014), and support in preparation of the next action plan (2015-2019).

Financial trends

In the first half of the Sixth Phase, KRC drastically decreased its external funding from JPY220 million in FY2013 to JPY105 million mainly because a large JICA-JST multiyear project on Japan-India low-carbon technology transfer was completed in FY2013. Based on the experiences developed through this technology related project, KRC is ready to take on the leadership of a technology assessment project funded by MOEJ with JPY150 million which will newly start in FY2015 and will be a key project for KRC. Subsidies from Hyogo prefecture were stable at around JPY30 million and how to utilise this fund effectively should be an important issue in the second half of the Phase.

Recommendations

It is suggested that KRC, building upon its expertise developed over time, should further enhance its focus on low-carbon and climate resilient technology transfer and dissemination.

Sharper focus on the means of implementation, namely technology, finance and capacity building is suggested for IGES-wide climate related operations in the 2nd half of the Sixth Phase. To this end, the majority of low-carbon and climate resilient technology research including CTCN will be transferred from CE to KRC. The centre will work closely with CE and other relevant divisions of the Institute. KRC will also work closely with BRC on its new Task entitled 'Assessment and promotion of technologies dealing with Climate Change'.

As for the structure of KRC, the current Tasks with emphasis on (i) implementation of technology transfer and dissemination, and (ii) policies to propel such technology transfer and diffusion, will be maintained but renamed to clarify their focus. These tasks are closely interlinked to each other and proactive collaboration between all KRC staff members is essential. With this collaboration, the two Tasks will provide a good set of strategic research assumed by KRC.

The current Task 3 'International Trends and Input to Relevant Processes on Technology Transfer' stipulated in ISRP6 with the objectives of '(engagement) in important international processes for transferring and disseminating low-carbon technologies … (such) as CTCN (Climate Change Technology Centre Networks) …under UNFCCC, Knowledge Management Initiative led by ADB and East Asia Knowledge Platform for Low Carbon Growth' will be merged with Task 1

It should be mentioned that the longstanding subsidy from Hyogo Prefecture provides solid financial backing for strategic research implemented under the two Tasks. Together with a strong partnership developed over time with Kansai businesses and industries, assets will be wisely mobilised in the 2nd half of the Sixth Phase.

2.6.4. Self-evaluation at the end of the Phase (July 2017)

Impact generation

KRC successfully generated various types of impact/outcome during the Sixth Phase. In FY2013, pilot projects to test the feasibility of installing Japanese low-carbon technologies (gas and electric heat pump technologies and compressed air system) in India were completed—type (v) through pilot projects. Building upon such experiences, KRC succeeded in making JICA-SIDBI accept IGES-TERI recommendations to include the heat pump technologies in their financing eligibility list—type (i) through proposals for improved policy/planning/practice.

The on-the-ground gained experience led to the idea of developing a stakeholder matchmaking platform between Japanese and Indian relevant stakeholders, namely Japan-India Technology Matchmaking Platform (JITMAP), which was launched in FY2016—type (iii) through provision of tools. JITMAP has mobilised the involvement of various key Indian stakeholders like Gujarat Energy Development Agency (GEDA) as dialogue members—type (iv) through network operation.

Under the JITMAP framework, several Indian companies adopted best operating practices and requested for quotation of Japanese low-carbon technologies. The idea of stakeholder matchmaking also caught the attention at international policy processes, like the Technology Executive Committee under the UNFCCC and the Regional Environmental Center for Central and Eastern Europe (REC).

Further efforts are needed to make JITMAP more attractive by improving information and bring in more members, especially from Japan. In addition, mapping relevant information is also required for effective matchmaking. Ultimate goal is to make JITMAP attractive enough to be a self-sustaining platform.

Outputs

KRC produced a number of high-quality papers, including Policy-Briefs and peer-reviewed journal articles, with a large number of citations (more than 3,000 citations in past five years, according to Google scholar citations). In addition, over the last two years (FY2015 and FY2016), KRC organised more than 20 workshops and training programmes in Japan and overseas, and KRC's researchers were frequently invited, as speakers and/or panellists, to high level events in Asia and Europe.

JITMAP itself is one of significant outputs that KRC generated in the Sixth Phase. However, actual results of on-the-ground activities for technology diffusion were not well analysed and systematically recorded. So further efforts need to be made to analyse and synthesis on-the-ground activities and develop recommendations for effective technology transfer and diffusion.

Fund raising and opportunity creation

In FY2014, KRC did not have one single, large-sized contract, but obtained several small-sized contracts totalling around JPY70 Million, along with around JPY36 Million as grant from Hyogo prefecture local government. However, the fact that a few private companies approached to KRC to make joint funding proposals indicated KRC's improved recognition.

In FY2015 and FY2016, KRC secured large-sized contracts from MOEJ (around JPY300 Million /year) on the technology assessment (Ta) project, adding to a stable annual grant from Hyogo prefecture local government (around JPY 34 Million). Under TA project, the research/area focus was widely extended to include countries in Asia, East and Central Europe, Small Island Developing States, etc. Therefore, KRC

collaborated with other Areas, within IGES, and with leading regional and international organisations such as Asian Institute of Technology (AIT), The United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS), The Regional Environmental Center for Central and Eastern Europe (REC), The International Renewable Energy Agency (IRENA), etc. to co-design, co-produce, and co-deliver in timely and effective manner.

By focusing on technology transfer issues, KRC is considering to utilise the Hyogo Prefecture subsidy more strategically in the future while diversifying its external resources.

Overall

Despite limited numbers of staff members, KRC demonstrated good achievement in both impacts/outcomes (through on-the-ground activities and JITMAP initiative) and outputs (through quality peer-reviewed papers). The initially intended impact in the Sixth Phase Strategic Research Plan was generally achieved. There was less emphasis on the Joint Crediting Mechanism (JCM) projects than initially planned, mainly because of the initiation of new Technology Assessment project. However, this should be positively perceived since the proposal for the new scheme/business model, which turned out to be JITMAP, was accepted by MOEJ. It is also positive sign that clearer linkage between international policy processes and KRC's on-the-ground activities was recognised and enhanced in in the course of the Sixth Phase.

KRC's research/area focus has gradually extended to include countries in Asia, East and Central Europe, Small Island Developing States, etc. Therefore, KRC extended its cooperation and collaboration with other Areas, within IGES, and with leading regional and international organizations, which enhanced KRC's capacity in co-designing, co-producing, and co-delivering.

Building upon the experience and expertise that KRC obtained in the Sixth Phase, it is expected to generate tangible impacts, i.e., more opportunities for businesses and actual adoption and diffusion of low-carbon technologies in the 7th Phase.

2.7. Sustainable Cities by the Kitakyushu Urban Centre

2.7.1. Goals set in the ISRP6 *(excerpt)*

In the Sustainable Cities area, strategic research activities will be carried out on concrete measures to achieve the necessary policy integration for sustainable development at the city level. Research will focus on effective initiatives at the local government, resident and citizen group level that aim to promote reduced pollution, low-carbon and environmentally sustainable development in Asia, particularly in ASEAN cities. Research will be conducted on measures to further promote and expand these initiatives. Practical activities to promote and expand these initiatives will involve active participation in the networks and collaboration activities among environmental model cities, as well as the transmission and dissemination of concrete recommendations.

To this purpose, the focus on cities at the Kitakyushu Urban Centre will be further strengthened. Cooperation with cities in Asia, particularly ASEAN cities, will be continued and firmly advanced. Likewise, research on scenario analysis and the establishment of MRV systems for the concrete development of low-carbon measures in cities will be promoted jointly with NIES and universities. Strengthened cooperation will be essential under SATREPS (Science and Technology Research Partnership for Sustainable Development), such as on the Iskandar Project (Malaysia) promoted by NIES. Further, collaboration on low-carbon initiatives in other cities in Japan and with ICLEI (International Council for Local Environmental Initiatives) is important.

Strategic research activities in this area will be carried out based on close cooperation between IGES Headquarters and the Kitakyushu Urban Centre. Further, networking and collaboration activities will garner the participation of as many cities as possible of Japan and other Asian countries.

2.7.2. Intended impacts/outcomes by the Area

- Low-carbon and resilient development policies/practices are mainstreamed and implemented in selected cities
- Effective environmental management systems and policies, including pollution control, waste minimisation, energy and resource efficiency and decentralised energy and resource management, are adopted in selected cities
- Mutual learning processes among various stakeholders for developing sustainable cities are enhanced at regional/national levels

2.7.3. Self-evaluation and recommendations at the mid-Phase review (February 2015)

Kitakyushu Urban Centre (KUC) focused on diverse issues on sustainable urban development. Activities included policy research, support for implementation, capacity building, and the facilitation of networking and information sharing between advanced and well-minded cities in the region. KUC also worked closely with Kitakyushu City and other local partners, such as JICA Kyushu, and effectively mobilised expertise accumulated by the municipality over time, as well as providing KUC's knowledge for various opportunities provided by its local partners.

Highlights in impacts/outcomes generation in the promotion of low-carbon and resilient development policies/ practices in Asian cities include:

- Advanced cities in Asia developed their low-carbon action plans with support from KUC, namely Ho Chi Minh City (Viet Nam), Surabaya (Indonesia), Nonthaburi and Phitsanulok (Thailand) and Cebu (the Philippines).
- Advanced cities in Asia developed and implemented low-carbon projects through JCM city-to-city collaboration scheme and other arrangement mediated by IGES, namely Surabaya (Indonesia), Hai Phong (Viet Nam) and cities in Palau.

Continuing efforts by KUC on promoting national strategy on efficient use of local resources are materialised in FY2014 and significant impacts/outcomes are observed as:

- Draft National Food Waste Management Strategy was developed in Malaysia, and piloted by selected companies
- Draft 3R Guidelines for Local Authorities was developed in Viet Nam

Highlights in the facilitation of networking and information sharing among the environmentally sustainable cities include:

- The 6th High Level Seminar on Environmentally Sustainable Cities held in February 2015 in Johor Bahru, Malaysia
- ASEAN ESC Model Cities Programme provided a boost to the implementation of National ESC programmes in 8 ASEAN countries. Amongst others, national programmes in Cambodia, Thailand and Viet Nam have been strengthened through ASEAN ESC Model Cities Programme.

Financial trends

KUC doubled its external funding volume in the first half of the 6th Phase, starting with JPY 161 million in FY2013, followed by JPY 323 million in FY2014. KUC is a pioneer in city-to-city collaborative activities for 3R and low-carbon issues, and has conducted a number of city-level external-funded projects in Asian

countries as well as in Japan. Funding resources are diverse and include MOEJ, JICA, ASEAN, UNEP, as well as private companies. It should be also mentioned that many of their activities are in full collaboration with Kitakyushu city which has stably supported KUC with JPY 20 million of subsidies annually. In the second half of the Phase, KUC will likely receive a lower level of funding.

Recommendations

It is important to promote further cross-area collaboration between IGES Areas with a strong urban focus, such as KUC, IPSS, CE, BJG and SCP. Adaptation team in NRE also has a research component on multi-municipalities collaboration for climate resilient development planning. A cross-area collaboration mechanism will be developed, likely to be led by the PMO and which will facilitate communication, joint projects and other activities in due course.

2.7.4. Self-evaluation at the end of the Phase (July 2017)

In the latter half of the ISRP6 (April 2015 – June 2016), Kitakyushu Urban Centre (KUC) continued to work on diverse issues on sustainable urban development, in particular on low-carbon city development and sustainable waste management. ASEAN ESC Model Programme was taken over by BRC in FY 2015.

For low-carbon city development, KUC contributed feasibility studies of low-carbon technology application and development of low-carbon policies in three Asian cities (Surabaya, Indonesia; Iskandar, Malaysia; and Rayong and Maptaput, Thailand) under the framework of city-to-city collaboration of these cities and Kitakyushu City. KUC also contributed to knowledge-sharing among Asian cities that promote low-carbon development activities with the support of Japanese cities through workshops and publications. KUC collaborate with CE and PMO-CTF.

For sustainable waste management, KUC closely worked with both national and local governments in Asia to develop laws, strategies, guidelines and action plans to promote sound waste management, where the expertise of Kitakyushu City and its local companies was fully utilised. With its expertise and experiences on solid waste management, KUC contributed to capacity development programmes of JICA and the World Bank. KUC combined policy research, capacity building and policy development support components in target cities and such approach effectively promoted actions of target countries and cities. For the waste sector, KUC closely worked with SCP and CCET. KUC also contributes a JICA partnership project on waste management in Bandung, Indonesia that PMO-CTF and IPSS developed in collaboration with Kawasaki City.

In addition to the two focus topics, KUC also addressed critical urban issues for sustainability such as small scale water supply, measures to prevent environmental impacts from industrial cities, and resilient strategy/plan development in five cities in Asia.

Impact generation

Four Asian Cities developed the local resilience plans: Cebu (Philippines), Nonthaburi (Thailand), Ho Chi Minh City (Viet Nam) and Shanghai (China) have developed their local resilient plans in partnership with academic, private and citizen groups with support of KUC. The plans of Cebu and Nonthaburi, including both adaptation and mitigation measures, were officially approved by the respective city councils. Cebu has issued a city order to allocate 5% of the annual council budget for implementation. This study was conducted under the Environment Research and Technology Development Fund (1-1304) of the Ministry of the Environment, Japan.

Five cities developed municipal solid waste management plans/strategies to reduce short-lived climate pollutants (SLCP): KUC, in collaboration with the CCAC Coalition and JICA assisted four Asian cities (Cebu (Philippines), Surabaya (Indonesia), Rayong City and Map Ta Phut (Thailand)) and one African city Nairobi (Kenya) in developing ISWM plans/strategies based on their local conditions. In Cebu, the proposed MSWM plan and strategies were integrated into the city's 10-year solid waste management plan started in 2013. Based on the plan, the city established material recovery facilities and composting in barangays and achieved 30% waste reduction target in 2015 when compared to 2010 baseline.

Sustainable solid waste management policies and systems have been promoted both at national and local level with the support of IGES: KUC supported both national and local government to develop the following policy documents that were officially approved:

- National Technical Regulation on Domestic Solid Waste Incinerators" (Viet Nam)
- Guidelines Governing the Establishment and Operation of Waste-To-Energy Technologies (Philippines)
- The national waste management strategies and action plan (Myanmar)
- Special Waste Management Bylaw (related to hazardous waste) of Cebu
- Waste management strategies and action plans of Mandalay City

Environmental education tools were developed with support of IGES and applied in Mandalay, Myanmar: KUC assisted the Mandalay City Development Committee (MCDC) to develop environmental learning tools for schools based on the environmental education textbook in Kitakyushu City. The environmental education tools were developed and first piloted in three model schools with the support of the Department of Basic Education in Mandalay and Board of Education of Kitakyushu City. The Department of Basic Education, Ministry of Education and MCDC are now planning to adopt these education tools into their education system covering all 250 schools in Mandalay.

Municipal solid waste management practices in Japan were summarised and submitted as an input to a World Bank publication: A report of Japan case studies on municipal solid waste management was developed and the report submitted as an input to a World Bank report that will be published in autumn 2017. The contents of the report were presented and shared at a World Bank technical deep dive on waste management, in which 50 persons from 15 countries participated, which led to capacity development of both national and local practitioners.

Major Outputs

- Junko AKAGI, Kohei HIBINO, Shiko HAYASHI, and Yatsuka KATAOKA. 2017. Practice and Experience of Municipal Solid Waste Management in Japan (ver.1). (a commission product)
- Shiko HAYASHI. 2017. Japan Case-study on Municipal Solid Waste Management. World Bank Report.
- Premakumara Jagath DICKELLA GAMARALALAGE, Matthew HENGESBUAUGH, Kazunobu ONOGAWA. 2017. Waste Management in Myanmar, Current Status, Key Challenges and Recommendations for National and City Waste Management Strategies. CCET and IGES.
- Ministry of the Environment, Japan. 2017. Creating Sustainable, Low-Carbon Cities through City-to-City Collaboration. Tokyo: The Ministry of the Environment (a commission product)
- Premakumara Jagath DICKELLA GAMARALALAGE, Simon GILBY, and Yatsuka KATAOKA. 2016. Barriers for Implementation of the Philippine National Solid Waste Management Framework in Cities, IGES Policy Brief No. 33. Kitakyushu: IGES-KUC
- Shiko HAYASHI, Seiya TOMINAGA, and Yatsuka KATAOKA. 2016. Involvement of the Local Government in the Local Production for Local Consumption of Energy: Case consideration of local energy companies, including the City of Kitakyushu. IGES Issue Brief. Kitakyushu: IGES-KUC
- Premakumara Jagath Dickella GAMARALALAGE Yatsuka KATAOKA and Masako CHOWDHURY. 2016. Development of Environmental Learning Programme for Establishing a Sustainable Solid Waste Management System in Mandalay City, Myanmar. In the HDCA 2016 Conference: Capability and Diversity in a Global Society 1-3 September 2016, Hitotsubashi University, Tokyo
- JICA Kyushu. 2015. "Urban Management for Developing a Sustainable City" Learning from the Case of Kitakyushu 1. Kitakyushu: JICA Kyushu (a commission product)

Fund raising and opportunity creation

The amount of external funds in FY2015 and 2016 were only half of those in FY2013 due to the transfer of the ASEAN Model Cities Programme and its relevant activities to BRC as well as a decrease in the size of external funding for a specific project that had caused a sharp increase in the external fund budget in FY2013. In spite of the decrease in external fund budget, funds for project implementation for IGES did

not change much and internal reserves increased about 30% in FY2014 to 50% in FY2016 by minimising outsourcing and effective project implementation. Funding resources are diverse including MOEJ, JICA, UNEP, the World Bank and private companies. Additional and new projects were created and implemented with funds from MOEJ, JICA and the World Bank in the latter half of the Sixth Phase, and such new projects must become a basis for new funding opportunities with those organisations. It should be noted that KUC closely collaborates with the City of Kitakyushu that supports KUC with JPY20 million of annual subsidies.

Overall

KUC continued to be a pioneer in city-to city collaboration activities for 3R and low-carbon issues and contributed to external funded projects at the city level in Asian countries. In 3R and waste sector, KUC supported the development of policy documents and capacity development of Asian countries and cities, and such efforts materialised as laws, guidelines and strategies adopted at both national and local level. These efforts become the basis to promote sound solid waste management on the ground. For low-carbon city development, KUC supported Asian cities to develop their capacity to develop low-carbon projects/plans through city-to-city collaboration. In addition, KUC also contribute to capacity development programmes (training) in low-carbon and sustainable development cities through city-to-city collaboration among Asian and Japanese cities. The strength of KUC lies in collaboration with Kitakyushu City and its local stakeholders (e.g. private companies and NGOs), and the expertise of Kitakyushu was fully utilised in project implementation in the Sixth Phase. KUC also promoted information-sharing among Japanese cities that tries to contribute low-carbon and sustainable development in Asian cities through city-to-city collaboration such as Yokohama and Kawasaki city, working with other research area of IGES.

The financial situation of KUC is sound and improving due to the efforts of effective and efficient project implementation. KUC also developed a few external projects together with other IGES research areas such as SCP and PMO-CTF and such collaboration strengthened KUC activities and facilitated information-sharing among areas. The assets of the Sixth Phase became a firm base for the 7th Phase activities of KUC and also can contribute to city level activities at IGES. One of the challenges remaining from the Sixth Phase is output management. This should be strengthened within KUC and also in collaboration with other IGES research areas.

2.8. Bangkok Regional Centre

2.8.1. Goals set in the ISRP6 *(excerpt)*

The Bangkok Regional Centre will cooperate with Headquarters and other centres to further expand the international network. The Centre already plays a leading role in the Asia Pacific Adaptation Network (APAN). Based on experience and credibility gained in this network, the Centre will proactively work to become even more involved in useful networking activities. The Centre already successfully operates a network based on cooperation between ODA (official development aid) granting organisations from the United States and Europe, and will further consolidate this know how. Cooperation is materialising with the Kitakyushu Urban Centre. In the sphere of mitigation, the Bangkok Regional Centre will join forces with sections at Headquarters to engage in appropriate support for and participation in the operation of the newly established LoCARNet and low-carbon platforms.

2.8.2. Intended impacts/outcomes by the Area

- Environmental performance and resilience is improved through increased capacity of policy makers and key stakeholders that are engaged in climate change adaptation, environmental compliance and enforcement, and sustainable development.
- Presence and involvement of IGES in environmental policy development processes in the Asia-Pacific and beyond is improved.

2.8.3. Self-evaluation and recommendations at the mid-Phase review (February 2015)

Bangkok Regional Centre (BRC) mainly focused on networking and capacity building on two priority issues in the region, namely (i) climate change adaptation, and (ii) environmental safeguard and sustainable development.

In the area of climate change adaptation, BRC promoted mainstreaming of adaptation in Asia and the Pacific through knowledge sharing and capacity building activities of APAN and USAID Adapt Asia-Pacific. Highlights of such the activities include:

- The 4th Asia-Pacific Climate Change Adaptation Forum convened in October 2014 in Kuala Lumpur, Malaysia attended by over 500 climate change adaptation practitioners, who were joined by public and private sector officials and top experts from 50 countries. It provided an outstanding opportunity for the participants to learn, share and network on unique activities carried out in the region.
- The 3rd USAID Adapt Asia-Pacific Annual Forum convened in September 2014 in Siem Reap, Cambodia participated by 60 target government officials provided them with intensive 16 hours of training on strengthening country systems to access and manage climate change adaptation finance.

Highlights in environmental safeguard and sustainable development include:

- Promotion of South-South cooperation through Asian Environmental Compliance and Enforcement Network (AECEN) twinning programme, which has been effective in capacity development of the government officials dealing with policies to strengthen environmental/social safeguards

In addition, BRC piloted its outreach and networking with local practitioners from development agencies, research institutes and others stationed in Bangkok, for which BRC convened:

- Two Evening Cafes on the topics of urban governance and gender consideration in climate change adaptation proposal writing. These events drew practitioners from various organisations in town and gave opportunities for BRC to present its activities and discuss possible collaboration as well as received media coverage in Bangkok Post.

BRC staff members also led and/or participated in various global and regional activities of IGES, such as:

- United Nations Environment Programme (UNEP)'s Environmental Outlook projects in Bhutan, Myanmar and South Asia
- Training for the African Development Bank, and
- Promotion of green economy and green economy for Myanmar.

Financial trends

BRC has increased its external funding in the first half of the Sixth Phase, from JPY 217 million in FY2013 to JPY 352 million in FY2014. The funding volume is relatively low among Areas, however, BRC has contributed to other Area's external funding activities such as EIA project, utilising their staff of international and local experts. The portfolio of external funding is diverse, and the ratio of overseas funds out of the amount is 22% in FY2014. BRC has not conducted many microprojects but medium-scaled multi-years projects funded by USAID, UNEP and ADB, which have brought a rather seamless financial base.

Recommendations

BRC has increased its external funding in the first half of the Sixth Phase, from JPY217 million in FY2013 to JPY352 million in FY2014. The funding volume is relatively low among Areas, however, BRC has contributed to other Area's external funding activities such as EIA project, utilising their staff of international and local experts. The portfolio of external funding is diverse, and the ratio of overseas funds out of the amount is

22% in FY2014. BRC has not conducted many microprojects but medium-scaled multi-years projects funded by USAID, UNEP and ADB, which have brought a rather seamless financial base.

2.8.4. Self-evaluation at the end of the Phase (July 2017)

Impact generation and main outputs

Since FY2015, the focus of BRC has expanded from (i) climate change adaptation and (ii) environmental safeguarding to (iii) climate change mitigation – since hosting the Regional Collaboration Centre (RCC) for Asia and the Pacific of the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat at BRC from September 2015 – and (iv) sustainable cities. Among them, (ii) environmental safeguarding has expanded its scope to cover not only pollution control but also environmental impact assessment (EIA) by assisting the issuing of the first edition of Regional Guidelines on Public Participation in EIA in five Lower Mekong countries as a partner of the USAID-funded Mekong Partnership for the Environment (MPE) and organising a preparatory meeting on an Asian EIA Network in Bangkok in March 2017.

Under (i) climate change adaptation, BRC supports capacity building training programmes conducted by a programme called Climate Change Asia implemented in Asian Institute of Technology (AIT) in collaboration with USAID Adapt Asia-Pacific, BRC and other partners including UNDP and UN Environment. A series of practical training courses on managing project preparation for climate change adaptation have been conducted, including a 3-day training course in Colombo, Sri Lanka at the margins of the 5th APAN Forum which had over 900 participants.

Under (iii) climate change mitigation, the RCC organised six regional workshops on integrating market mechanisms into Nationally Determined Contributions (NDCs), kicked off regional dialogues on interpreting and operationalising the instruments stipulated under Article 6 of the Paris Agreement, and assisted the development of a Standard Baseline (SB) for Mongolia's grid emission factor. BRC also conducted a baseline study on national policies and financial schemes for promoting energy efficiency in Thailand and Viet Nam.

Under (iv) sustainable cities, the ASEAN Environmentally Sustainable Cities (ESC) Model Cities Programme funded by Japan-ASEAN Integration Fund (JAIF) is currently in its 3rd phase since 2016 and has so far supported 40 cities in eight ASEAN countries to achieve their environmental targets and link it to localised Sustainable Development Goals (SDGs) in the areas of solid waste management, water & sanitation, air pollution control, renewable energy, model green schools, environmentally-friendly tourism and urban resiliency. Those cities were invited to the 8th High-Level Seminar on Sustainable Cities held in Chiang Rai, Thailand in February 2017 as resource persons.

Fund raising and opportunity creation

A new 5-year EU-funded project on sustainable consumption and production in Asia is likely to start in the last quarter of 2017 in cooperation with Adelphi, GIZ and IGES SCP. The ASEAN ESC Model Cities Programme is aiming to get into a new phase from 2018 in cooperation with IGES City TF. A new project for DRR and CCA integration in ASEAN is being developed. Funding from MOEJ supports management of APAN website and other knowledge management activities in cooperation with IGES NRE, a low-carbon technology transfer project in cooperation with IGES KRC, and organisation of the 9th High Level Seminar on Sustainable Cities in cooperation with IGES City TF. BRC may be involved in two JICA-funded projects of the Climate Change International Technical and Training Center (CITC) at Thailand Greenhouse Gas Management Organization (TGO) and Bangkok Metropolitan Administration (BMA)-Yokohama cooperation. BRC will continue seconding a staff to AIT for the management of Climate Change Asia until end of March 2018 in expectation of fund raising by then. AECEN has been trying to develop projects with ADB and US EPA, but to no avail so far except one with EPA Taiwan. The RCC is also trying to develop projects for promoting green bonds and other financial mechanisms using IGES SRF in cooperation with IGES Finance TF and CE.

Overall

Currently BRC's four focal areas are managed by six full-time research staff including the director, one senior advisor, four consultants and five administrative staff. The numbers of focal areas and staff will increase once the new SCP project starts. Close collaboration with other development partners and cooperation with other IGES groups are well established as explained above.

2.9. Beijing Office

2.9.1. Goals set in the ISRP6 *(excerpt)*

The Beijing Office will carry out necessary activities to contribute to bilateral cooperation between China and Japan on environmental issues. Specifically, it will continue to promote measures and activities closely related to the development of China's new environmental policies, including the set-up and diffusion of simple design waste water treatment facilities. Further, close and constant attention will be paid to the start-up of a new structure for deliberation on a climate change strategy in China, and to the drafting of new policies. Steady operations will be carried out in an appropriate and timely manner based on the MOU (Memorandum of Understanding) between the environment ministers of Japan and China. Further, necessary contributions will be made while cooperating with other departments concerning policy development aside from China's bilateral relations, including the appropriate manner of cooperation with the China-ASEAN Environmental Cooperation Centre.

2.9.2. Intended impacts/outcomes by the Area

- IGES Beijing Office aims to serve as an important bridge and a reliable platform between China and Japan to further promote environmental bilateral cooperation between the two countries.
- Specifically, the Beijing Office will contribute to holding regular policy dialogues between the Japanese and Chinese governments, and will also contribute to establishing environmental policies in both countries by participating in bilateral cooperation at the national level as the implementing body in the areas of water quality management, air quality management and climate change.

2.9.3. Self-evaluation and recommendations at the mid-Phase review (February 2015)

Beijing Office (BJG) has been materialising its objective to 'serve as an important bridge and a reliable platform between China and Japan to further promote environmental bilateral cooperation between the two countries' with focuses on two priority environmental issues, namely (i) reduction of NH3-N and other pollutants in small towns and rural areas in china, and (ii) promotion of city-to-city cooperation on air pollution between local and national governments in China and Japan. Both issues have been identified through continuing policy dialogues between the governments of China and Japan and addressed by the BJG Office.

The 'Cooperation Project on Total Pollutant Reduction of NH3-N etc. in Small Towns and Rural Areas in China' that has continued seven years since FY2008 will end in FY2014 with the following achievements and some follow-up activities identified:

- Eleven (11) model facilities were installed in nine regions, which has demonstrated the effective waste water treatment in the rural area in China
- Necessary follow-up is the nation-wide dissemination of lessons learnt from the construction and operation of model facilities
- Policy recommendations for strengthening waste treatment system in rural areas in China, addressing technological and management aspects, are under preparation as part of a JICA project started in FY2014, aiming at its submission to the Government of China in September 2017

As for the promotion of city-to-city cooperation on air pollution, BJG swiftly initiated this project in April 2013 responding to the need identified by the Governments of China and Japan, as severe and consecutive air pollution was observed in China in January 2013 and onwards. Highlights in the progress include:

- Ten local governments in Japan started communication and cooperation with respective Chinese counterpart cities to strengthen programs on protection of air quality; information sharing between cities in Japan and China is promoted; and capacity building for Chinese government officials convened
- BJG is playing the key role, as a reliable platform between China and Japan, in promoting policy dialogues at national and local levels, as well as in fostering further concrete cooperation such as joint research and model projects implementation
- The project continues until FY2018

Last but not least, BJG also contributed to raising awareness of members of the National Development and Reform Commission (NDRC) and the local DRC on the necessity and options of countermeasures against climate change, by convening a "Low-Carbon training course.

Financial trends

BJG has doubled its external funding volume in the first half of the Sixth Phase, starting with JPY94 million in FY2013, followed by JPY215 million in FY2014 which is quite a high level of volume considering the number of staff. BJG's activities have focused on water pollutant issues as well as co-benefit issues which are funded by MOEJ and JICA. In FY2015, the amount of fund volume will be slightly reduced, however, the financial status in terms of internal profit could be further advanced by reviewing business structure.

Recommendations

It is suggested that BJG continues the current course of actions, gradually shifting its major focuses from rural waste water treatment to air pollution, responding to the priority issues mutually agreed between the Governments of China and Japan

2.9.4. Self-evaluation at the end of the Phase (July 2017)

Impact generation

1. BJG implemented Japan-China city-to-city cooperation project to improve air pollution in China (hereafter called "the Project") across a wide area of China (17 provinces and cities). The project covers all of the three major areas where high-priority is given to improve air pollution. From the view point of population, the Project covers more than one third of the Chinese population.
2. Comparing the concentration of major air pollutants in major cities in China (74 cities) in 2013, when the Project was yet to start, air pollution has improved by 21.8% on average in 2016 (refer to the table below on Concentration of air pollutants), after three years of cooperation.
3. It is also expected that CO2 emissions will be reduced by 2.3 million tons as a result of the ripple effect of the model project which is being implemented in Jiangsu province.

表　中国全国74都市大気汚染物質濃度の改善状況
Table : Concentration of air pollutants in 74 cities in China

汚染物質種類 Air pollutants	2013年 年平均値 Annual average	2016年 年平均値 Annual average	下降率 Rate of decrease
二酸化硫黄（SO2）	40μg/m3	21μg/m3	47.5%
二酸化窒素（NO2）	44μg/m3	39μg/m3	11.4%
総粒子状物質（PM10）	118μg/m3	85μg/m3	28.0%
微小粒子状物質（PM2.5）	72μg/m3	50μg/m3	30.6%
オゾン（O3）	139μg/m3	154μg/m3	+10.8%（上昇）
一酸化炭素（CO）	2.5mg/m3	1.9mg/m3	24.0%
全体平均 Overall mean	–	–	21.8%

Outputs

1. The outputs of the Project is shown in the table below on Japan-China city-to-city cooperation project.
2. The final outputs of the JICA joint project on wastewater treatment technologies and management systems in rural areas in China (policy recommendation, design and maintenance manual, operation and maintenance recommendation) will be completed at the end of September 2017.
3. About 65 articles were published in newspapers and magazines (including foreign media) in three years.

日中都市間連携協力事業　活動統計（2014－17 年度の合計）

Japan-China city-to-city cooperation project : Statistics of activities (total from FY2014 to FY2017)

	活動 Activities	合計 Total number
1	中国側及び日本側の関係者との協議調整及び協力の推進 （中国国内での政府間会合等の開催） Negotiation, coordination and promotion of cooperation between those who are concerned in China and Japan (Intergovernmental meetings in China)	71 回 71 times
2	大規模国際会議・セミナーの開催 International conferences and seminar in large scale	4 回 4 times
3	中国地方都市でのセミナー開催 Seminars in Chinese cities	10 回 10 times
4	国内関係者会合の開催 Meetings with those who are concerned in Japan	7 回 7 times
5	訪日研修等招聘事業の実施 Training courses in Japan	29 回、172 名 29 times, 172 trainees
6	中国中央・地方政府の政策動向の実態把握 Monitoring policy trends of the central and local governments in China	23 ヶ月分、837 ページ 23 months, 837 pages

Fund raising and opportunity creation

In the past three years, all activities and operational costs of BJG were 100% covered by competitive funds from MOEJ and JICA.

BJG obtained JPY436 million in total over three years on a payment basis. BJG has two full-time researchers and three full-time administrative staff. This means BJG obtained JPY73 million per year per person on average, based on per researcher basis.

Overall

In terms of 1) stable activities and operation based on external funds, 2) many outputs and 3) impacts that the projects of BJG generated, BJG implemented activities which could be a model for other areas (teams), and in this regard BJG should be highly evaluated. BJG would like to express sincere appreciation to all staff and those who supported its activities.

2.10. Tokyo Office

2.10.1. Key functions set in the ISRP6

The Tokyo Office has been providing a convenient and strategic space for IGES top management as well as staff to have meetings with various funding agencies and other key stakeholders and partners in a central part of Tokyo. The Office moved to a new location in 2015 to expand office space to accommodate the IPBES Technical Support Unit for the Asia-Pacific Regional Assessment (IPBES-TSU-AP) as well as the office of ICLEI Japan, and to have meeting rooms and office space for IGES staff who station at the headquarters. Since then, the utility of the new Tokyo Office has significantly improved, whereby key stakeholders often get together to help IGES substantiate collaboration with them.

2.10.2. Self-evaluation and recommendations at the mid-Phase review (February 2015)

n/a (the review was not conducted)

2.10.3. Self-evaluation at the end of the Phase (July 2017)

Overall

- The Office successfully assisted in increased use by IGES staff with meeting support and other functions (average daily use of 17 IGES staff and 9 visitors as of March 2017).
- The Office expanded its capacity to assist project implementation.
- The Office began hosting IPBES-TSU-AP from June 2015, and the Nagoya University IUC-Japan Office from April 2017.

- The Office led the implementation of the IPBES Japan Biodiversity Fund (JBF) capacity building projects from April 2016, partly in collaboration with APN and assisted by IPBES-TSU-AP. In FY2016, IGES organised three ILK sub-regional dialogue meetings in Thailand, Nepal and New Zealand, and the second IPBES workshop for scenario and modeling in Hayama.

- The Office assisted NRE in implementing IPBES supporting project for national experts funded by the Ministry of the Environment, and Satoyama Initiative related projects/activities including the operation of the Satoyama Development Mechanism.
- The Office assisted IGES Senior Fellows/Fellows in implementing projects on Northeast Asian city waste recycling.
- The Office also facilitated collaboration between IGES City Taskforce and ICLEI Japan for impact making at the sub-national government level.

2.11. IPBES-TSU-AP hosted at the Tokyo Office (Reference)

Formally established in May, 2015, the IPBES Technical Support Unit for the Asia-Pacific Regional Assessment (IPBES-TUS-AP) has been successfully implementing the IPBES Regional Assessment for the Asia and the Pacific region under the guidance of IPBES MEP/Bureau and the Secretariat and close collaboration with relevant experts, Task Forces and other TSUs.

Overall

- IPBES Regional assessment for Asia and the Pacific Region: Finalised the second order draft (SOD) of the assessment report and the first order draft (FOD) of the summary for policymakers (SPM), and delivered these to IPBES Secretariat for the second external review process. Based on the results of the external review, the third author meeting and other relevant instructions from MEP/Bureau and the Secretariat, IPBES-TSU-AP coordinated the drafting process in preparation of the final drafts, presented to the Sixth IPBES Plenary in March 2017.
- Organisation of Author Meetings: Organised three authors meetings to coordinate and facilitate the discussion among experts. Managed necessary travel arrangements, set the venue, prepared necessary documents and coordinated the programme. Drafting of SPM as well as chapter draft was greatly advanced. The Third Author Meeting (TAM) was organised at the Headquarters of the United Nations University (UNU) in Tokyo. The Regional Dialogue meeting was organised by the IPBES Capacity Building TSU, back-to-back with TAM in Tokyo, and IPBES-TSU-AP provided support to organise the meeting.
- Support for the operation of IPBES: Dispatched staff to the IPBES Secretariat in Bonn, Germany for a period of 3 months from June to August 2016 to provide support for the operation of IPBES including organisation of the Joint Second Author Meeting for the regional and land degradation and restoration assessments, and the scoping workshop for the thematic assessment on the sustainable use of biodiversity. The TSU staff successfully supported the MEP members leading the scoping workshop, by recording the discussions and reflecting them into the draft scoping report. IPBES-TSU-AP also supported the organisation of a workshop on values in November 2016 in India, chapter 2 meeting in Korea, and supported co-chairs and CLAs during the SPM workshop held by CB-TSU in Norway.
- Assisted Tokyo Office in the implementation of the Japan Biodiversity Fund (JBF) Capacity building project, including three ILK subregional dialogue meetings and the second IPBES workshop for scenario and modeling.

2.12. Programme Management Office (PMO)

2.12.1. Key functions set in the ISRP6

The PMO was intended to be strengthened in the Sixth Phase by assigning four senior coordinators (Planning and Coordination, Knowledge Management/Capacity Development and Building, Quality Management, and Outreach/Networking) for the improvement of overall strategic operations of IGES, and for production of timely flagship products with improved quality. The former Research Support Section of the Secretariat was transferred to the PMO from the Sixth Phase. PMO also facilitates incubation of new activities and fundraising.

The Planning and Coordination was designed to manage IGES's goal setting process called the Milestone Management system and oversee new management system introduced from the Sixth Phase (Area Leader/Task Manager system, etc.), IGES's own fund (Strategic Operation Fund), and other institute-wide coordination. The Knowledge Management/Capacity Development (aiming at enhancing IGES impact generation and providing strategic support, training and facilitation for target external stakeholders) and Capacity Building (aiming at improving overall performance of IGES staff through creating practical opportunities for enhancing staff capacity in research, as well as in networking and strategic operations) was designed to coordinate and upgrade institute-wide activities on these matters. The Quality

Management aimed to ensure the quality of the IGES's knowledge products and their methodologies. The Publication Policy was revised and updated, including the publication review and approval process, in order to achieve an optimum balance between quality and timeliness. Certain priority outputs were reviewed by the PMO and subject to external review while other outputs were published based on the approval of Area Leaders. Advice for and review of major funding proposals was provided, especially for specific Japan-based research funds. IGES checks outputs using the iThenticate anti-plagiarism software to ensure academic integrity. The Outreach/Networking was to manage institute-wide outreach activities including website management and IGES's key events and conferences. The Flagship Initiative team was set up to lead in publishing all-IGES flagship products with researchers at IGES.

2.12.2. Self-evaluation and recommendations at the mid-Phase review (February 2015)

Overall, the planning and management has made each research staff member more target-oriented, outreach/networking has improved the visibility of IGES and helped impact generation, capacity development/knowledge management has assisted in generating synergy among different Areas within IGES, and quality management has ensured improvement of IGES products. Yet, a number of shortcomings still remain. For example, the management systems (Milestone Management system) that have been developed may be too complicated to improve efficiency. There are still some difficulties in producing publications with sufficient quality in a timely manner for certain important policy processes. Production of a flagship product has failed to meet its original deadline.

Solutions to these problems should be addressed as practically as possible, recognising the reality surrounding IGES researchers. Indeed, an increasing amount of their time is being used for coordination, communication and other management activities necessary for externally funded projects. In addition, the service functions of the PMO need to be more efficient. This will be particularly urgent in the second half of the Sixth Phase, because the long-standing subsidy from Kanagawa Prefecture will be reduced to zero starting from FY2015.

Recommendations to Planning and Coordination

The current Milestone Management System will be further elaborated into an effective and efficient tool to support staff members in planning for results, reviewing progress and generating concrete impacts to the target policy processes and stakeholders. For the promotion of strategic planning:

- In-house capacity building for structured goal-setting is vital and relevant training/workshop will take place at the beginning of FY2015.
- An Area Review at the beginning of FY2015 will be best utilised for an exchange of lessons learnt and forward-looking discussions for effective impact generation between Area members, Top Management, PMO and other staff members concerned.
- Procedure for making any changes in originally-set milestones will be clarified to ensure dynamic management together with appropriate arrangement for progress review.

IT System for timely delivery and appropriate resource allocation, its usability, efficiency and usefulness will be improved:

- Simple and user-friendly interface will be developed over time. In the meantime, in-house training/workshops will take place.
- Improvements will be made to functions for encouraging appropriate staff time allocation and use, such as functions enabling users to effectively monitor staff time spent against that planned, with strong financial implications of staff time use.
- Inter-linkage between three fundamental management systems for efficient operations, namely the Milestone Management System, time management System and financial management System will be further elaborated and consolidated.
- Linkage with IGES Output Database will be looked into.

The Area Leader and Task Manager System was newly introduced from the inception of the Sixth Phase with the aim of installing an enabling environment for more ambitious, dynamic, cross-area and swift operations, but many Area Leaders still struggle with a large amount of day-to-day management that cannot be ignored and, in some cases, their over-involvement in microscopic operations (situations differ from Area to Area). While Area Leader/Task manager system created a flexibility in cross-area exchange of expertise and contributions to All-IGES products, yet Area Leaders and Task Managers often faced difficulties in cross-area team work for various reasons. The current system should be further elaborated and operationalised to provide the right incentives for each staff member to pursue the benefits of cross-area collaboration. Such measures may include those outlined below:

- Firstly, there should be enhanced understanding on the objectives of 60-20-20 System among staff members.
- Secondly, measures to facilitate information-sharing and match-making of in-house needs and seeds, at the beginning of each fiscal year, as well as in the middle of the fiscal year, should be introduced. To this end, newly introduced online Milestone Management system should be further elaborated, simplified for easy-to-use, so that it could be better utilised by all staff. Support from PMO, together with the Human Resources Management Section of the Secretariat, also needs to be strengthened.
- Thirdly, lessons should be learnt through Area and individual performance review processes. Opportunities created for each staff member through the 60-20-20 System, as well as how effectively such opportunities were designed by managers for generating quality outputs, outcomes and impacts should be carefully examined.

In addition, it is important to secure this kind of budget line for enabling swift investment in emerging opportunities. At the same time, it is essential to secure such facilities at IGES and mobilise effectively and efficiently. Issues to be address include:

- The total volume of investment facilities, taking into account the IGES's operation level and financial situation. Methodologies to monitor and quantify the return of investment.
- Balance of programmed investment for multiple years and ad-hoc type investment for a single year. Balance of investment in different categories, such as research, tool development and strategic operation. Timing(s) of the call for bottom-up research proposals. The current once-a-year call cannot address some of the opportunities in timely manner.
- The 'IGES Top Achievements Awards' will continue as an incentive mechanism to encourage staff efforts in impact generation. A reporting mechanism for impacts created by each Area/Task will be improved, so that concrete impacts can be quickly recognised, outreached and success factors can be widely shared among staff members.

Knowledge management/Capacity Development and Building

Knowledge Management (KM) improvements will continue following the multi-year operational plan during the second half of ISRP6 supported by increased human resource expertise, but the major focus of KM operations will turn its focus towards strengthening the dissemination of IGES knowledge and expertise to external stakeholders in innovative and solutions-oriented manners. In FY2015, IGES will join the JSTOR special "Sustainability" collection for improved dissemination of publications. KM will also work to improve analytical tools for evaluating the impact of IGES publications.

For Capacity Development (CD), more effort though will be placed on steps 1 and 2 for improved coordination of IGES expertise and general improvement of CD approaches and techniques utilised in these operations. This will aim to develop preferred delivery methods across all CD operations while also ensuring better linkages to specialised expertise across the institute.

For Capacity Building (CB), staff capacity training will focus more on research and communication capacities with the aim to improve staff ability to bridge the science-policy interface with validated and justified policy recommendations. Further efforts such as the "transition research study group" conducted in FY2013 will continue to help strengthen IGES's approaches for innovative and transformative research.

Quality Management

Although the strengthened quality management system has made progress, especially on priority publications, timely reviews and comments, and improving basic procedures, still many issues remain to be addressed. There are still time and capacity limitations to producing quality of their outputs, and there are some difficulties in producing timely publications in various forms. Many publications, especially discussion papers and commissioned reports, are managed exclusively within Areas and are not reviewed by the PMO (in order to facilitate quicker publication), so there is some uncertainty about the level of quality of these output types. Clean production methods have not been fully adopted throughout the institute, especially in the early project planning stages and for commissioned work, and this leads to delays due to the need for additional revisions. Finally, there should be greater linkage between Quality Management and impact generation. Future fundraising success will also depend heavily on strengthening the quality of outputs. Thus, following measures are proposed.

First, a high priority should be placed on internal capacity building of researchers. IGES researchers come from a wide variety of backgrounds and experiences and are not always accustomed to policy research. More training sessions could be organised to address strategies for adapting writing to be clearer and more persuasive policy-related audiences, and to enhance overall writing efficiency and productivity.

Second, Quality Management may need to be more closely involved earlier in planning and milestone setting processes to more effectively implement clean production. A simple tracking system for the production of publications could be considered to facilitate this. This is expected to enhance efficiency as well as impact generation.

Third, influence generation can be enhanced by expanded coordination with Outreach, Networking, Capacity Development, and Knowledge Management. These are still not linked closely enough with outputs.

Fourth, efforts will be made to expand the use of professional editing to help improve both the quality and timeliness of outputs.

Outreach/Networking

During the first half of ISRP6, Outreach activities as a whole were conducted through the creation of PR materials, website management, seminars and symposiums including the support of the events conducted by the Research areas, and through media relations. Outreach activities have been strengthened in the first half of ISRP6 and are showing positive signs of improvement. Considering the phase-out of the subsidy from Kanagawa Prefecture on PR activities, outreach activities need to be more strategic and efficient. Outreach for the rest of ISPR6 was further strengthened in consideration of the following points.

- Improved the visuals and operations of IGES website, based on more solid analysis of access and SEO
- Improved contents and design of “E-alert” to get proper attention from stakeholders
- Strengthened PR support to the on-going Flagship Initiative and other research projects expecting specific impact generation
- Strengthened media relations in Japan through effective and timely press releases, as well as organising a series of media briefings. For this purpose, interaction with research areas were strengthened.
- Explored ways to develop the delivering capacity of IGES to international media to strengthen outreach outside of Japan.
- Improved outreach capacity of IGES by working with IISD-ENB and other IGES networks etc.
- Finalised a communication policy and taking necessary in-house action for sound implementation of the policy.
- Started to consider and develop a draft IGES communication strategy.

The last two years saw substantive development of networking in a broader sense. It is important to recognise that these positive developments were the result of IGES’s substantial efforts to build trust with

important partners. But at the same time, these new networking developments are the basis for generating more substantial impacts. Thus, while similar efforts will continue to strengthen networking and partnering with key partners, intensive efforts should be made by the divisions concerned to substantiate networking.

Flagship Initiatives

The flagship team was newly established at the beginning of the Sixth Phase and it has taken some time to develop effective ways of initiating and running cross-area projects. Based on the experiences gained in doing this, IGES' approach to flagship initiatives has evolved over time. It is already possible to distinguish three generations of such initiatives:

The initiative on regional integration represents the first generation where the research areas were requested to contribute with report chapters around a common theme. The assumption was that most areas would be able to utilise work they had already done or were currently doing so that additional work could be limited. The overall theme was selected with this criterion in mind. However, experience shows that in many cases it was challenging for the areas to develop strong chapters with clear messages that were well aligned with the report's overall storyline. Also in those cases where the areas had run projects related with the overall theme of the flagship initiative, there was often a need for considerable extra analysis and reframing, making it challenging to meet the expected quality standards and to comply with deadlines.

The two flagship initiatives launched in 2014, on the future climate regime and the SDGs, were initiated in a different way. They were both based on on-going work handled mainly by one area but also involving staff from other areas. They represent the second generation of IGES' flagship initiatives. The expectation is that by being identified as flagship initiatives these two work streams will more effectively engage expertise from several areas of the institute, and that they will be able to produce better quality output and to be more active in outreach than would have been the case otherwise. Since these second generation initiatives are anchored in projects with substantial external funding it has been found easier to mobilise sufficient human resources, which is needed for good quality and timely delivery. However, since the initiatives bring together projects that had been designed individually, without much coordination or complementarity in mind, and that are funded from different sources, it is challenging to create synergies between projects.

Based on the experiences made so far, discussions are now on-going about what future flagship initiatives at IGES – the third generation of such initiatives – should look like. It is still early to provide details but efforts will be made to develop flagship initiatives that are designed as such from the beginning, that consist of activities that are complementary and mutually supportive, that have multi-year funding, and well thought-out strategies for stakeholder engagement and influence. This kind of approach could be similar to that promoted by WRI as the "Signature Initiative". This could become an important challenge for IGES in the future.

2.12.3. Self-evaluation at the end of the Phase (July 2017)

Planning and Coordination

- A Milestones Management System (goal setting) was built upon IGES's existing accounting-supporting/attendance recording software and put to trial use, but the system was found to be too complex. Similarly, a Time Management system was introduced on the same existing software, but the information required was also found too complex and heavy. With the limited capacity of the software developer (outsourced company) in tailoring the needs of IGES simultaneously considered, it was decided that the system should focus mainly on the accounting and attendance recording functions, and restrict the Milestones and Time management applications.
- Also, as IGES expands its activities, it became obvious that the blanket 60-20-20 system (a general principle that each researcher position staff allocates 60% of his/her time on funded projects in the group, 20% on cross-group collaboration, and 20% on IGES-wide activities) is not applicable to all

researchers, especially those who are already engaged in multiple or well-funded project, although the principle encouraged all staff to making contributing to outside their group at IGES.

- Therefore, a substitute simpler form for Milestone Management was introduced as a trial which focused more on individual goal setting. The revised form aimed to address the above concerns by (i) simplifying the data requirement and procedure and (ii) placing responsibility and incentives to develop his/her own work plans more to each individual staff (as opposed to by the Area Leaders/Task Managers). In addition, the Time Management system incorporated the time recording for IGES-funded activities (such as Strategic Research Fund projects, IGES-wide publication/flagship projects, ISAP, etc.) to increase the accountability of IGES core fund use. The above form and system were further modified to make them simpler and more self-explanatory for the use in the 7th Phase.
- Documents preparation necessary for planning and reporting to the Board of Directors/Trustees was simplified, and more emphasis was placed on the quality of planning and final reporting in collaboration with the person in charge of Quality Management.
- IGES Top Achievement Awards were not able to be continued due to lack of time of the staff in charge.
- Other achievements made in the second-half of the Phase include: launch of two Taskforces for city and finance, which became independent units in the 7th Phase (see below); managing Strategic Research Fund (SRF) to support IGES-own research activities; and introducing and managing the Strategic Operation Fund (SOF) to support strategic operations in responding to the emerging policy development and needs. Overall, the planning management and tools are still evolving and have not reached their optimal form yet. It still remains a challenge to strike the right balance between developing and introducing a comprehensive and robust system (more inputs and processes) and a simple and efficient system (lighter inputs and processes). Recognising the results of the third-party assessment on operation and management, the efforts will be made in finding a sufficient and resource-effective system in the 7th Phase under the new organisational structure.

Supplement: Achievement by City and Finance Taskforces

City Taskforce

- The Taskforce was initially launched in 2015 with members across Areas who engage in city-level activities and IGES Senior Fellows, and led by a Senior Coordinator from April 2016.
- Achievements include: Support in co-organising the G7 Toyama Environment Ministers' Meeting Parallel session "The Role of Cities" with the MOEJ, Toyama City; support to the City SDGs Workshop under FutureCity Promotion Committee in Yokohama; contribution to the "Localizing SDGs Symposium" in Kitakyushu organised by the Ministry of Foreign Affairs of Japan (MOFA), MOEJ, and Kitakyushu City; and support to a number of events and networking with various key stakeholders (JICA Indonesia, Tokyu Corporation, Tokyo City University, World Bank Tokyo Development Learning Center (TLDC), ICLEI, C40, and others.)

Finance Taskforce

- The Taskforce was launched in July 2016 and issued two IGES Commentaries on G20 green finance and sustainable finance using disclosed information on climate risks, as well as a paper and a briefing note on green bonds. It successfully attained the status for IGES as a Supporting Institution of the UNEP Finance Initiative (FI) in February 2017.

Knowledge management/Capacity Development and Building

- Multifaceted achievement was made regarding the institute's knowledge management (KM), capacity development (CD, for targeted stakeholders) and capacity building (CB, for IGES researchers). KM operations' achievement include: overhauled and upgraded the IGES publication database that is also open to external use; produced a video e-learning series on the themes of forest governance, MRV in the transport sector, climate-sensitive land-use, Japan 2050 Low Carbon Navigator, and climate change and gender; and improved overall website management.
- CD operations contributed to designing and facilitating international/regional workshops in collaboration with the research groups. CB operations provided various occasions in supporting

enhancing staff skills and contributed to developing and finalising IGES's Medium-to-Long Term Strategy 2016-2025.
- In addition, the team was engaged in the Education for Sustainable Lifestyles programmes under the 10-Year Framework of Programmes (10YFP) on SCP and other global programmes and initiative lead by UNESCO and produced a number of publications.
- Also the team led the design and implementation of the ADB Asia Leadership Programs (ALP) held on 27-30 June 2017 in Tokyo which invited high-level policymakers from Asian countries.

Quality Management

The strengthened quality management system has made good progress, especially on priority publications, timely reviews and comments, and improving basic procedures. Nevertheless, the trade-off between quality and timeliness still remains, and further efforts to improve should be made. There are on-going time and capacity limitations to enhancing the quality of outputs, and there are some difficulties in producing some outputs quickly enough for major policy processes. Many publications, especially discussion papers and commissioned reports, are managed exclusively within Areas and are not reviewed by the PMO (in order to facilitate quicker publication), so there is some uncertainty about the level of quality of these output types. Clean production methods have not been fully adopted throughout the institute, especially in the early project planning stages and for commissioned work, and sometimes this leads to delays due to the need for additional revisions. Finally, there should be greater linkage between Quality Management and impact generation, especially at the planning stage. Future fundraising success will also depend heavily on strengthening the quality of outputs. Thus, the following measures are proposed.

First, more effort should be placed on internal capacity building of researchers. IGES researchers come from a wide variety of backgrounds and experiences, and are not always accustomed to policy research. More training sessions could be organised to address strategies for ensuring that writing is clearer and more persuasive to policy-related audiences, and to enhance overall writing efficiency and productivity.

Second, Quality Management may need to be more closely involved earlier in the planning and milestone setting processes to more effectively implement clean production. A simple tracking system for the production of publications could be considered to facilitate this. This is expected to enhance efficiency as well as impact generation.

Third, impact generation can be enhanced by expanded coordination with Outreach, Networking, Capacity Development, and Knowledge Management. These are still not linked closely enough with outputs.

Fourth, efforts should be made to expand the use of professional editing to help improve both the quality and timeliness of outputs.

In addition to quality management related work, this group also contributed to GEO6 as a coordinating lead author for both the Global Assessment and the Asia Pacific Regional Assessment, led commissioned work for MOEJ on the Tripartite Environment Ministers Meeting from 2013-2016, and contributed to SDGs and other projects such as White Paper V, and contributed two papers to a conference at the Wuppertal Institute on Sustainability Transitions (in cooperation with Knowledge Management and Planning and Coordination). IGES response to think tank surveys was coordinated by this group in FY2015 and FY2016.

Work on TEMM was conducted in cooperation with GE and KRC, and included reviewing the progress of the first Tripartite Joint Action Plan (2010-2014), contributing to the development of the second Tripartite Joint Action Plan (2015-2019), contributing to the development of TEMM activities on green economy and SDGs, and editing an introductory pamphlet on TEMM.

Major outputs included the following:

- GEO6 Regional Assessment for Asia and the Pacific (Coordinating Lead Author for Ch. 4)

- Elder, M., Bengtsson, M. and Akenji, L. (2016) Making SDG Implementation Easier: Thinking about Goals as Means, IISD SDG Knowledge Hub.
- Elder, M., Bengtsson, M. and Akenji, L. (2016) 'An Optimistic Analysis of the Means of Implementation for Sustainable Development Goals: Thinking about Goals as Means', Sustainability, 8(9), pp. 962–986. doi: 10.3390/su8090962.
- Elder, M. and Kwan, A. (2016) 'The 2016 US Presidential Election and the Implications for Climate Change: Is There Potential for Cautious Optimism?', IGES Briefing Note, December.
- Elder, M. and Zusman, E. (2016) 'Strengthening The Linkages Between Air Pollution And The Sustainable Development Goals', IGES Policy Brief, July.
- Ishii, T., Tamura, K., Mori, N., Zusman, E. and Elder, M. (2016) 'Implications Of The G20 Summit In Hangzhou, China For Climate Change, Green Finance And Sustainable Development Goals', IGES Briefing Note, September.
- Elder, M., Didham, R. J. and Sano, D. (2016) 'Process Indicators to Measure Intermediate Progress of Social Impacts of an Individual Organization's Transition-Related Research', in International Sustainability Transitions IST 2016.
- Elder, M. (2016) 'The Transition from Trade Protection to Trade Liberalization: Lessons for Sustainability Transitions', in International Sustainability Transitions IST 2016.
- Elder, M. (2015) 'Air Pollution and Regional Economic Integration in East Asia: Implications and Recommendations', in IGES (ed.) Greening Integration in Asia: How Regional Integration Can Benefit People and the Environment. Hayama, Japan: IGES, pp. 117–147.
- Zusman, E., Ofei-Manu, P. and Elder, M. (2015) 'Building Capacity for Environmentally Sustainable Trade in Asia: Toward a Coherent Approach', in Institute for Global Environmental Strategies (ed.) Greening Integration in Asia: How Regional Integration Can Benefit People and the Environment. Hayama, Japan: Institute for Global Environmental Strategies, pp. 189–206.
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Outreach/Networking

In the Sixth Phase, IGES outreach activities as a whole were significantly strengthened and improved through the creation of PR materials, website management, seminars and symposiums including the support of the events conducted by the Research areas, and through media relations.

- IGES Branding was also built through the development of IGES Communication Policy and its institutionalisation within IGES.
- Media relations in Japan were effectively strengthened through consistent networking with relevant journalists, timely press releases, and a series of media briefings.
- Moreover, timely dissemination of IGES outputs and other relevant information was strengthened through effective use of IGES networks and other channels.

Flagship Initiatives

- Three flagship reports including the White Paper V were published during the Sixth Phase.
- Two new research-based flagship reports were proposed to be published at ISAP in 2018. The concept papers of these candidate flagship reports were developed and discussed with senior advisors and top management, and modified according to the received comments. Based on the revised concept

notes, the first draft of introductory chapters was developed to share expected content and the key messages of chapters to be contributed by IGES researchers.
- Contributed to development of externally funded research projects that are candidates for (or a part of) flagship research, including S16 on sustainable production and consumption policy in Asia, and landscape approach projects.

Other achievements made in the second-half of the Phase include implementation of the research on carbon pricing and green fiscal reform.

- Research on green fiscal reform funded through MOEJ's policy studies on environment and economy for three years was started in 2015. An open symposium was held to disseminate the research results of the first year. Interim research results were also reported at the green taxation committee of MOEJ in July 2016.
- Research on carbon pricing was developed as a sub-theme of the project on carbon pricing led by Prof. Arimura of Waseda University and funded through MOEJ's Environment Research and Technology Development Fund (or suishinhi) in 2017.

2.13. Secretariat

2.13.1. Key functions set in the ISRP6

The Secretariat was designed to conduct administrative management tasks for the research institute as a whole, primarily in the areas of human resource management, accounting, as well as general affairs. Transparent and efficient management of these tasks by the Secretariat is indispensable to clearly fulfil IGES' accountability toward funding bodies. In the Sixth Phase, to centralise and enhance the functions of the Secretariat, the outreach functions of the Research Support Section will be placed under PMO, and a Human Resource Management Section will be newly established.

2.13.2. Self-evaluation and recommendations at the mid-Phase review (February 2015)

To ensure that IGES in its Sixth Phase is more accountable as an organisation in the public interest and that support is given to sustainable strategic research activities, a more effective and efficient system of governance needs to be put in place. Under the three pillars of Human Resources, Accounting and General Affairs, the Secretariat has worked jointly with the PMO to manage human resources and funding, and to support developing a base for organisational management with a perspective of "management" beyond conventional "administration."

As a result, the financial status has certainly improved and the system for employing staff members has strengthened. However, financial operations are not able to be clearly predicted in the medium and long term, and there are still issues remaining with the personnel system in that it still cannot respond swiftly and smoothly to changing needs. Also there has been insufficient progress in the efficiency of office administration utilising IT, resulting in a large amount of staff time being spent on handling settlement documents. Furthermore, the budget and the staff volume allotted to management have remained at the same level these past few years, so it is vital to try to improve efficiency of office management from now on.

Overall recommendations

In the latter half of the Sixth Phase, each Section will have its own targets and will achieve them in a step-by-step manner. Based on these results, the Secretariat will be required to work even more as a team incorporating HR, Accounting and General Affairs, working towards the improvement of IGES-wide performance. In particular, as the financial contributions from national and local governments are decreasing year by year, the positioning of external funding has become more vital. Efforts to accelerate improvements to the BCS system for more expeditious management of the implementation of those

external funds should be made in full linkage among sections coordinating with Research areas. Support for legal aspects also should be reinforced.

On other matters, focus will be put on personnel management to secure motivated staff who can work positively to achieve good performance. It is also necessary to strengthen administrative ability in the English language in order to deal with office settlements bilingually

Human Resources

First of all, it is necessary at the earliest opportunity to set up a personnel management system that is consistent overall, taking into consideration of Area-level fund raising status and staff performance.

For hiring staff members, timely recruitment is sought to better meet the needs of the areas/sections, by making use of the newly established Programme Officer position, in addition to Research Staff and Administrative Staff. Further, working closely with the Accounting Section, time management system and evaluation standards etc. will be improved to timely provide necessary information for managerial decisions well beforehand.

On the other hand, for labour management, overall work efficiency will be improved by encouraging honest exchange of opinion among areas/sections, striving to reduce wasteful procedures and work as much as possible. Thus it is hoped that this will alleviate the need for long working hours. Moreover, initiatives such as working from home will be taken into consideration for those engaged in child-rearing and elderly care. By early establishment of a salary system based on work content and actual performance, and by devising a visible career path, all staff will be able to carry out their work with enthusiasm.

Bearing in mind these issues, preparations are underway to reform the HR policy and system in the run up to the Seventh Phase. Specifically, one extremely important issue is to develop in-house rules to respond to revisions to the Labour Contract Act that came into force in 2013.

Accounting

At the Task level, one on-going challenge is how to support more effective project budget management, and BCS will be further improved. Furthermore, capabilities for accounting related administrative operations will be strengthen in research areas by providing guidance as well as allocating accounting expert assistants so as to make institutional accounting operations more efficient. At the institutional level, Financial Committee was launched in FY2014 where top management can decide the future actions based on the latest financial information. In addition, aiming for more sustainable operations, a specified reserve fund will be set up for future projects and expenditure following the accounting standards for public-interest corporation.

General Affairs

One important challenge accompanying the increase in external funding is how to deal appropriately as a public-interest corporation with the growing number of legal matters that emerge with external organisations both in Japan and overseas. To deal with this, institutional expertise on legal affairs will be strengthened by appointing a staff member in General Affairs, to further reinforce our links with lawyers and judicial scriveners, and to establish a system for checking contracts and submitted documents.

By linking with the Accounting Section, HR section and PMO and clarifying each responsibility, BCS should be improved so as to contribute to more efficient and prompt working practices. Likewise, there will be a drastic simplification of the internal approval process, and the current paper-based system will be fully computerised.

2.13.3. Self-evaluation at the end of the Phase (July 2017)

Overall, progress was made in improving the efficiency of institute-wide operations and management while meeting all requirements in compliance with the relevant regulations (those for IGES as a public-interest incorporated foundation, and for labour and accounting) as well as securing and managing necessary financial and human resources. Emphasis was placed on improving and strengthening accounting support for externally funded projects as well as financial governance, by launching the Finance Committee, securing skilled staff from more diverse sources, and revisiting the existing internal approval procedures and associated internal regulations.

BCS, which is for accounting as well as attendance records, became operationalised with continuous modifications to become one of the major institutional tools that enables projects and staff to apply for payment or leave, and to register attendance and work time for project financial settlement.

However, there is still much room for improvement in overall resources management and governance in terms of both efficiency and robustness. A third-party assessment conducted in 2016 echoed IGES's own self-assessment on this matter. Further continued efforts will be needed in the next Phase, graduating from the antiquated/government-rule based to a modern system that is suitable for an institute like IGES. Summary of the major achievements and self-evaluation by each section are presented below.

Human Resources

- Assured compliance with the requirements newly introduced by the related regulations including a My Number system, a staff stress check, and others. As a measure of addressing health concerns by staff, IGES hired an English-speaking industrial physician for regular consultation.
- Introduced a Programme Officer position, recruited/secured necessary staff for future activities, implemented a cross-appointment system with partner institute. Further consideration was given to those engaged in child-rearing.
- Attendance recording and leave applications were integrated in the accounting system (budget Control System or BCS) in a bilingual setting.
- Completed the recruitment for the 7th Phase and introduction of performance-based bonus and tenure system was decided (details are under development).
- Overall, further improvement will be needed for more efficient recruitment process and personnel management. The latter matter can be addressed with the improvement of planning and evaluation processes. In addition, IGES Fellow system will be reviewed and related procedures should be streamlined.

Accounting

- At the institutional level, maintenance of a sound financial status, combined with regular briefing sessions to the top management on important corporate financial matters. Also the establishment of specified reserve fund contributed to the financial management beyond a single fiscal year.
- Introduced a new fiscal cycle (July-June) that will enhance the quality of budget and ease the financial settlement process for the increased volume of funds.
- BCS was put into operation after continuous improvement.
- Strengthened project screening processes for group-level financial management with PMO and Area Leaders.
- Increased accountability of IGES core fund, combined with the earmarked investment (approximately 3% of the total revenue) in the budget, and managed IGES Reserve Fund for future use.
- Overall, a project-level accounting process has gained experience. Streamlined accounting procedures and management tools at project level as well as unit level will be introduced in the 7th Phase.

General Affairs

- Maintained the status of public-interest incorporated foundation and met all requirements imposed by the law or patrons.
- Administration costs were further scrutinised and measures were taken for especially outsourcing services including head office building maintenance and in-house cafeteria services.
- Overall, work still remains to further strengthen the system for checking legal matters (agreements, contracts), as well as revisiting and simplifying unnecessary paper-based internal approval processes, and internal document management.

Annex 1: Lists of the United Nations units, international networks/initiatives or organisations that IGES hosts, serves as secretariat for, or has collaborative agreements with (As of June 2017)

United Nations units (4)

	Name of the unit	Year (hosting division at IGES)
1	Intergovernmental Panel on Climate Change (IPCC) Task Force on National Greenhouse Gas Inventories (TFI) Technical Support Unit (TSU)	September 1999- (HQ)
2	IGES Centre Collaborating with UNEP on Environmental Technologies	March 2015- (HQ)
3	The Technical Support Unit (TSU) for the Asia-Pacific Regional Assessment for the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)	April 2015- (Tokyo Office)
4	United Nations Framework Convention on Climate Change (UNFCCC)-IGES Regional Collaboration Centre (RCC)	September 2015- (BRC)

Networks to which IGES serves as the secretariat (12, ongoing)

	Name of the network	Year (hosting division at IGES)	Main function
1	Regional 3R Forum in Asia and the Pacific	2008- (HQ)	Forum to promote 3R in the Asian developing countries in corporation with the governments, international organisations and donor communities, endorsed at the East Asia Environment Ministers Meeting 2008.
2	Clean Asia Initiative (CAI)	2008- (HQ)	Initiative to help economic development in Asian countries to leap over environmental degradation by passing on Japan's experiences of technologies, organisations, and systems.
3	Sustainable Development Planning Network for Asia-Pacific (SDplanNet-AP)	2008- (BRC)	Network of professionals involved in development planning to share innovative approaches for integrating sustainable development into plan and strategies launched with support from IISD.
4	International Research Network for Low Carbon Societies (LCS-RNet)	2009- (HQ)	Researchers' network which dedicates to governmental policy making processes to promote low-carbon societies. Initiative the G8 Environment Ministers' Meeting.
5	Water Environment Partnership in Asia(WEPA)	2004-2014 2016- (HQ)	Network to improve the water environment in Asia by strengthening water environmental governance.
6	Knowledge Hub of the Asia-Pacific Water Forum	2009- (HQ)	One of the regional water knowledge hubs to generate and share water knowledge and building capacity in the Asia-Pacific region.
7	Asian Co-benefits Partnership (ACP)	2010- (HQ)	Network to support the mainstreaming of co-benefits into sectoral development plans, policies and projects in Asia launched at the Better Air Quality 2010.
8	International Institute for Applied Systems Analysis	2011- (HQ)	Research collaboration currently focuses on solving global scale problems mainly in the field of systems analysis.

	(IIASA) Japan Committee Secretariat		
9	Low Carbon Asia Research Network (LoCARNet)	2012- (HQ)	Asian Researchers' network to facilitates science-based policies for low-carbon development in the Asian region, launched by LCS-RNet
10	Asian Environmental Compliance and Enforcement Network (AECEN)	2012- (BRC)	Regional Network of national and sub-national agencies from Asian countries committed to improving compliance and enforcement launched in 2005 with support from the USAID and partner organisations including ADB, USEPA and UNEP and others.
11	ASEAN ESC Model Cities and High Level Seminar on ESC (HLS ESC)	2010- (BRC)	Regional network which promotes bottom-up innovative practices/policies by ASEAN's frontrunner cities. The annual HLS seminar is the face-to-face networking event under the East Asia Summit Environment Ministers (EAS EMM) (ASEAN+8) framework.
12	Japan Climate Leaders' Partnership (Japan-CLP)	2012- (GE)	Support Japanese private-sector network to promote the transition to sustainable and low-carbon society.
-	The Kitakyushu Initiative	2000-2010 (KUC)	Initiative to improve urban environment in Asia and the Pacific region under the direction of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) in collaboration with Kitakyushu city.
-	The Asia-Pacific Forum for Environment and Development (APFED)	2001-2010 (HQ)	Regional group of prominent experts to address critical issues and propose new models for equitable and sustainable development.
-	Asia Pacific Adaptation Network (APAN)	2010- 2015 (BRC)	Asia-Pacific region's network with special emphases on the management of climate change adaptation knowledge and capacity building. Part of the Global Adaptation Network (GAN) by UNEP.
-	USAID Adapt Asia-Pacific	2010-2016 (BRC)	Knowledge management support to USAID's climate change adaptation project preparation facility for Asia and the Pacific.

Collaborative agreement (31)

	Institute	**Year**	**Scope**
International organisations			
1	Secretariat of the United Nations Framework Convention on Climate Change and its Kyoto Protocol (UNFCCC Secretariat)	May 2008- Dec. 2017	Climate change (CDM, market mechanisms)
2	United Nations Environment Programme (UNEP)	Dec. 2010- Dec. 2018	Climate change, wastes, air pollution
3	United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)	Apr. 2016 – Dec. 2020	SDGs, knowledge sharing and mutual support to conferences
4	Asian Development Bank (ADB)	Dec. 2010 - Mar. 2020	Climate change, wastes, energy, water resources

5	International Council for Local Environmental Initiatives (ICLEI)	Apr. 2015 - Apr. 2018	City level collaboration for sustainable cities
6	ICLEI Japan	Apr. 2015- Jul. 2018	City level collaboration for sustainable cities
7	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)	Jun. 2015- Mar. 2018	Project Cooperation Agreement (PCA) on the establishment of and collaboration through the TSU for the Asia-Pacific Regional Assessment for the IPBES
8	International Labour Organization	Jan. 2015 – Dec. 2017	
9	UNFCCC Secretariat	Jul. 2015- Dec. 2017	Agreement on the establishment of and collaboration through the UNFCC Regional Collaboration Centre (RCC)
10	Asia-Europe Environment Forum (ENVforum)	Sep. 2015- Dec. 2016	Forum to foster inter-regional cooperation between Europe and Asia on sustainable development and its environmental dimensions.
11	UNEP-International Environmental Technology Centre (IETC)	Oct. 2015- Oct. 2017	Project Cooperation Agreement (PCA) on the establishment of Collaboration Centre on Environmental Technology
12	International Institute for Sustainable Development (IISD)	Sep. 2016- Jul. 2018	Collaboration on knowledge exchange
13	Secretariat of the Convention on Biological Diversity (SCBD)	Apr. 2016 – Jun. 2019	Project Cooperation Agreement (PCA) on the implementation of the Capacity building project for the implementation of IPBES Asia Pacific Regional Assessment
Research collaboration			
1	Sino-Japan Friendship Center for Environmental Protection	Jul. 2006	Research collaboration on environmental protection
2	Korea Environment Institute (KEI)	Jul. 2014 – Jul. 2019	Research collaboration
3	Ministry of Forests and Soil Conservation (Government of Nepal)	Feb. 2015- Feb. 2020	Research collaboration on forest governance standard
4	Institute of Microfinance (InM)	Aug. 2015- Jul. 2018	Research collaboration on inclusive finance
5	Conservation International (CI) and UNU-IAS	Sep. 2015 – Jun. 2019	Research collaboration on biodiversity
6	National University of Laos	Oct. 2015- Oct. 2018	Research collaboration on natural resources management
7	International Centre for Integrated Mountain Development (ICIMOD)	Nov. 2015 - Dec. 2019	Research collaboration on natural resources management
8	The Energy and Resources Institute (TERI)	Jul. 2016 - Mar. 2017	Research collaboration on launching Japan-India Stakeholders' Matching Platform
Cities			
1	Kawasaki City	Aug. 2013- (automatically renewed)	City level collaboration for sustainable cities in Asia
2	City of Yokohama (Y-PORT)	Mar. 2015- Mar. 2018	City level collaboration for sustainable cities in Asia
3	C40 Cities Climate Leadership Group (C40)	Jan. 2016- Dec. 2017	Collaboration at the city level activities

Japanese Universities			
1	Yokohama National University	Mar. 2007- (automatically renewed)	Personnel exchange, research collaboration
2	Hiroshima University	Jun. 2010- (automatically renewed)	Personnel exchange, research collaboration
3	Yokohama City University	Jul. 2011- (automatically renewed)	Personnel exchange, research collaboration
4	Tokyo Institute of Technology	Dec. 2011 - (automatically renewed)	Personnel exchange, research collaboration
5	Keio University and Asian Institute of Technology	Jul. 2012- Jul. 2017	Personnel exchange, research collaboration
6	Tokyo City University	Oct. 2016 – Sep. 2019	Personnel exchange, research collaboration
7	Nagoya University	Feb. 2017 – Jan. 2020	Implementation of the IUC-J project at the IGES Tokyo Sustainability Forum

Other (membership, etc.) (6)

	Institute, network or initiative	**Year**	**Scope**
1	United Nations Economic and Social Council (ECOSOC)	2003-	Contribution to the work of UN
2	Japan Consortium for Future Earth	2013-	Collaboration on research and knowledge exchange
3	Sustainable Development Solutions Network (SDSN) Japan	2015-	Collaboration on research and knowledge exchange on SDGs
4	United Nations Global Compact (UNGC)/Global Compact Network Japan (GCNJ)	2015-	Collaboration on knowledge exchange on SDGs
5	Rockefeller Foundation 100 Resilient Cities program	May 2016-	Platform partner to support resilience strategy formulation
6	UNEP Finance Initiative (UNEP FI)	Feb. 2017-	Joined as a Supporting Institution