



Member's report on activities related to ICRI

Reporting period December 2015 – November 2016

NOTE: TO CHECK A BOX, DOUBLE CLICK ON IT AND TICK 'CHECKED' UNDER 'DEFAULT VALUE' IN THE POP UP WINDOW

1. **Contribution to the ICRI Plan of Action and GM.** *Your responses to the following questions will assist the Secretariat in assessing contributions towards the major themes of the current ICRI Plan of Action (<http://www.icriforum.org/icri-secretariat/current>) and objectives of the general meeting.*

a. Bleaching event

Were you affected by the Third Global Coral Reef event? Did you do some monitoring, if yes what are the results and could you explain what method did you use? Would you like to report during the ICRI Meeting?

→Yes. This year we have confirmed coral reefs in Japan are affected by the Third Global Coral Reef event. The Ministry of the Environment is monitoring bleaching event through the implementation of Monitoring Sites 1000 (see Project4 below) .In addition, the Ministry of the Environment is also undertaking spot surveys in Sekisei Lagoon.

- b. INDCs - Intended Nationally Determined Contributions** –*Did your national contribution mention 'marine ecosystems or coral reefs'? Would you be interested in joining an Ad Hoc committee to develop guidelines to integrate coral reefs in the INDC?*

→Our Intended Nationally Determined Contribution does not mention “marine ecosystems or coral reefs”.

- c. Nature-based Solutions to address Climate Change** - *Do you have some example(s) of Nature-based (coral reef and related ecosystems) Solutions to address climate change? If yes, could you please provide use some details?*

→Government of Japan developed ‘National Plan for Adaptation to the Impacts of Climate Change’ last year. In order to conserve healthy coral reef ecosystems with high climate change resilience, improve coastal ecosystem functions through reducing stress like pollutants not related to climate change, promoting proper designation and management of marine protected areas, restoration of coral reef .

- d. UN Sustainable Development Goals** –*Do you have example(s) showing how coral reefs and related ecosystems address the SDG (SDG 14 but also other related ones such as SDG 1 – End poverty in all its form; SDG 2 – End hunger, achieve food security and improved nutrition...)*

→ Based on the Action Plan to Conserve Coral Reef Ecosystem in Japan, promote knowledge sharing and implementation of model projects addressing the priority issues prescribed in the action plan (see Project3 below).

e. Do you have notional measure(s) – existing or in development - to ban the sale and manufacture of cosmetics and personal care products containing plastic microbeads? And plastic bags?

→We do not have national measures to ban the sale and manufacture of cosmetics and personal care products containing plastic microbeads or plastic bags.

f. **Upcoming events** - Do you plan to attend:

- November 2016 - Marrakech Climate Change Conference / The twenty-second session of the Conference of the Parties (COP 22) yes
- December 4, 2016 to December 17, 2016 - Convention on Biological Diversity COP13 yes

2. **Updates on your activities.** The following table is a summary of ICRI's *Framework for Action* (FFA) and its four cornerstones. (The full text of the FFA is available in English, French, and Spanish at <http://icriforum.org/icri-documents/icri-key-documents/continuing-call-action-2013>).

Integrated Management	Objective	Manage coral reefs and related ecosystems using an ecosystem approach, recognizing place based activity; connectivity within and among ecological, social, economic, and institutional systems; as well as with attention to scale; resilience of ecological and social systems; and long-term provision of ecosystem services.
	General Approach	Integrated management, using a strategic, risk-based, informed approach, provides a framework for effective coral reef and related ecosystem management which supports natural resilience, ecosystem service provision, and enhances the ability to withstand the impacts of climate change and ocean acidification.
	Desired outcome	There is a demonstrable reduction in the threats to coral reefs and related ecosystems through management action.
Capacity Building	Objective	To build capacity in all facets of management of coral reefs and related ecosystems and support dissemination and application of best practices to achieve the widest possible engagement of all stakeholders in planning and management activities.
	General Approach	Continued collaboration, partnerships, outreach, information sharing and education to ensure the uptake of best practices and encourage behavioural change. This can only be successful if the diversity of cultures, traditions and governance among nations and regions are taken into account.
	Desired outcome	Persons who have influence in the management of coral reef and related ecosystems have the knowledge, tools and capital necessary to apply best practices, adapted to the cultural and socio-economic context.
Science & Monitoring	Objective	To support research and citizen science approaches to enable countries and communities assess and report on the status of and threats to their coral reefs and related ecosystems in a coordinated, comparable and accessible manner.
	General Approach	Research and monitoring programs are essential to ensure that management of coral reefs and related ecosystems is based on best available (scientific) information.
	Desired outcome	Knowledge of the status and trends in coral reefs and related ecosystems health is enhanced and used to inform planning and management, improving management outcomes.
Periodic Assessment (Review)	Objective	To engage in periodic review of the impact and effectiveness of all elements of management to enable evaluation and refinement of management measures in an adaptive framework.
	General Approach	Periodic assessments of management effectiveness and evaluation of projects and activities to ensure the efficacy of management tools and systems in tackling the range of pressures affecting coral reefs and related ecosystems and protecting the values associated with them.
	Desired outcome	Management processes and activities are regularly reviewed and improved using a structured approach, to enhance their ability to effectively reduce pressures and threats.

Project 1

Cornerstone(s) implemented through the project	Check all that apply: <input type="checkbox"/> Integrated Management <input type="checkbox"/> Capacity Building <input type="checkbox"/> Science & Monitoring <input checked="" type="checkbox"/> Periodic Assessment (Review)
Project Title	Formulate the Japan's National Coral Reef Ecosystem Conservation Action Plan for 2016-2020
Location	[Insert text here]
Dates	Mar 2016
Main Organizer(s)	Ministry of the Environment, Japan (MOE)
Main Stakeholder(s)	Other ministries, agencies, local governments that have coral reefs
Description of Project (Please elaborate on how the project implements the FFA cornerstones)	<p>Japan has revised its national coral reef action plan which was first developed in 2010. Keeping in mind our country's unique characteristics and circumstances, such as the fact that the dominant type of reef in Japan is fringing reefs as well as increasing number of in-bound tourists and the rapid changes in demographics, MOE has identified three priority issues to address in the following five years leading up to 2020: 1) addressing land-based pollution, 2) promoting sustainable tourism, and 3) revitalizing the connection between coral reefs and the lives of communities.</p> <p>The Plan intends to facilitate conservation of the coral reef ecosystem efficiently and smoothly by identifying the problems to be addressed predominantly and taking measures in a focused manner to solve them on the basis of the current status of coral reefs and the social situation surrounding thereof. The goal is to construct the infrastructure for conservation of the coral reef ecosystem connected to local communities by the end of fiscal year 2020 through the framework for conservation. Through these efforts, the Plan will contribute to the attainment of Aichi Target 10". The Plan was developed by MOE in the Review Meeting for Revision of the Plan in cooperation with relevant national and local governments, and the Japanese Coral Reef Society. These organizations assume a role of promoting the plan from their own perspectives</p>
Outcome (Expected outcome)	A more focused national action plan that will facilitate collaboration and implementation
Lessons learned	[Insert text here]
Related websites (English preferred)	https://www.env.go.jp/nature/biodic/coralreefs/pamph/C-project2016-2020_L.pdf (in Japanese only)(Japanese only)

Project 2

Cornerstone(s) implemented through the project	Check all that apply: <input checked="" type="checkbox"/> Integrated Management <input checked="" type="checkbox"/> Capacity Building <input checked="" type="checkbox"/> Science & Monitoring <input checked="" type="checkbox"/> Periodic Assessment (Review)
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Project Title	Sekisei Lagoon Nature Restoration Project
Location	Sekisei Lagoon and the surrounding sea areas of Ishigaki and Iriomote Islands
Dates	Feb 2006 when the Sekisei Lagoon Nature Restoration Committee established, to present
Main Organizer(s)	Sekisei Lagoon Nature Restoration Committee (President: Dr. Makoto Tsuchiya, Honorary Professor of University of the Ryukyus)
Main Stakeholder(s)	Local community members, local NPOs/NGOs, fishery and tourism industries, researchers, local governments, national agencies (Members 113)
Description of Project (Please elaborate on how the project implements the FFA cornerstones)	<p>The Sekisei Lagoon is the largest coral reef in Japan which extends between Iriomote and Ishigaki Islands. In species richness of reef building corals, the Sekisei Lagoon is the equivalent of the Great Barrier Reef in Australia, and has been appreciated at home and abroad. The lagoon, on the other hand, provides fields for a variety of socio-economic activities in the Yaeyama Islands, such as fisheries, tourism, building materials, environmental education and sea routes—hence, various stakeholders are involved. Due to environmental pressures, such as the crown-of-thorns starfish (COTS) outbreak, coral bleaching which has become more frequent in recent years, and land-based water pollution including the red clay runoff and domestic wastewater, the coral reef ecosystem in the Sekisei Lagoon has been in steep decline, compared with the time of its designation as a national park in 1972.</p> <p>In accordance with the Law for the Promotion of Nature Restoration, the Sekisei Lagoon Nature Restoration Committee was established by a group of local stakeholders in 2006 in response to a call by the Ministry of the Environment (MOE), Cabinet Office and the Okinawa Prefectural Government. In 2007, the committee drew up the Overall Plan for the Sekisei Lagoon Nature Restoration with its long-term goal: “Realize a relation between people and nature, and regain the bountiful coral reefs, as it was when the national park was designated in 1972”. This project aims at the integrated restoration of the coral reef ecosystem, including terrestrial areas, mangrove forests, seagrass beds and tidal flats, and targets the Sekisei Lagoon and surrounding ocean area including the Ishigaki and Iriomote Islands. The Overall Plan identifies main threats to the coral reef ecosystem, and defines necessary measures to address them and the role of each member organization. We will implement adaptive management of the project through mutual evaluation in accordance with the framework of the project and committee.</p> <p>As shown in the figure on the following page, the current organization of the committee consists of a “General Assembly”, “Subcommittee on Community Life and Resource Use”, and four Working Groups, each functioning practically: “Terrestrial Measures”, “Marine Measures”, “Awareness & Education”, and “Scientific Surveys”.</p> <p>Specific activities of the Subcommittee and each working group are as follows:</p> <ul style="list-style-type: none"> • Subcommittee on Community Life and Resource Use: To articulate/clarify the rules for use of fisheries, tourism and maritime traffic, etc. centering around the Sekisei Lagoon channel, the subcommittee is developing a “Rule map for the use and conservation of the Sekisei Lagoon

waters”.

- Terrestrial Measures WG: To mitigate impacts caused by red-clay runoff and waste water, the WG is carrying out activities to raise awareness in local communities through lectures/meetings reporting impacts of red clay runoff on coral reefs and experimental agricultural methods for preventing red clay runoff.

- Marine Measures WG: The WG has been working on fisheries resource management and control of the crown-of-thorns starfish. In regards to the COTS control, it has, in particular, formed a small group to discuss more technical matters. Private organizations and government agencies are effectively implementing the starfish control, sharing their plans and activities together

- Awareness & Education WG: To raise public awareness, the WG has been disseminating scientific knowledge and the importance of coral reef conservation through organizing events and environmental education programmes.

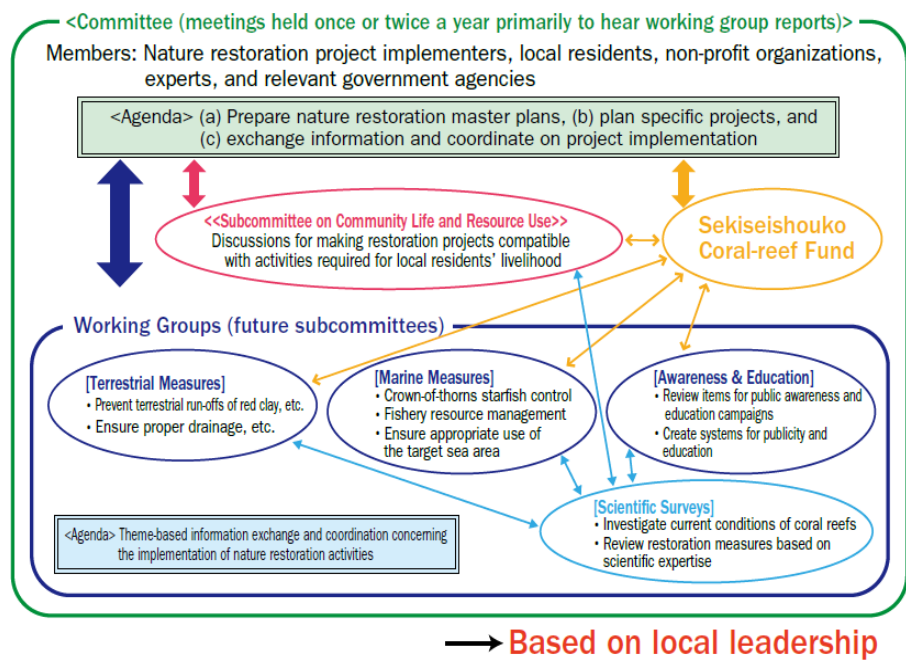
- Scientific Surveys WG: As a group of experts, the WG has been conducting the monitoring of the coral reef ecosystem in the Sekisei Lagoon, researching factors degrading coral reefs, and examining necessary measures for their restoration. In addition, the WG evaluates the effectiveness of the restoration project.

Moreover, the specified non-profit organization “Sekiseishouko Coral-reef Fund”, established in 2009 and incorporated as an NPO in 2013 to support activities of the Committee, has been using the funds raised for coral reef restoration, including promotion of sugar cane cultivation by stump shooting and COTS extermination through an acetic acid injection method. As mentioned above, since this project covers very comprehensive activities, the “General Assembly” of the committee provides a venue to report on and coordinate between activities by the subcommittee, WGs and the fund.

As a member of the committee, MOE has drawn up an implementation plan in accordance with the overall plan. Under the implementation plan, MOE is conducting monitoring surveys and collecting basic data on the coral reef ecosystem including coral coverage, the number of larval recruitment and settlement, the coral-dwelling fishes, and factors threatening coral such as the number of COTS, amount of Suspended Particles in Sea Sediment (SPSS), and occurrence of coral disease. These data are provided for restoration measures and evaluation of project effectiveness. In addition, based on the idea of enhancing the coral reef natural recovery, since 2004, MOE has been working to restore coral reefs directly by recovering the coral communities through coral transplantation by sexual reproduction method using coral settlement devices. MOE has also been contributing to the restoration of coral reef ecosystem in Sekisei Lagoon by developing techniques and raising public awareness. Aside from these activities, MOE organizes events to observe marine lives and provides opportunities for local people and students to learn about the coral reef ecosystem in Sekisei Lagoon and its significance.

As described above, the Sekisei Lagoon Nature Restoration Committee is a framework in which various stakeholders from the entire community are participating in order to promote the conservation and management of Sekisei Lagoon which is the foundation of activities in the local society. To share information and collaborate among the committee members and to promote more comprehensive and effective management as well as nature

restoration, the committee has set up a common goal and organized the role of each member in accordance with the Overall Plan, so as to conduct an integrated management approach, recognizing connectivity within and among ecological, social, economic and institutional systems.



Outcome (including expected outcome)

Even before the establishment of the committee, individual entities had been carrying out their own measures to conserve the coral reef ecosystem, including control of COTS and management of marine fishery resources. However, there were no collaborations or networks among them, and most measures were carried out by each entity alone.

Establishing the committee and implementing the project in accordance with the overall plan, the restoration project has been functioning effectively, and building networks and collaborating among members, and evaluating effectiveness of the activities one another. The outcomes of the project are as follows:

Control of COTS by collaborations between the public and private sectors

- Developing the COTS control map (MOE, Okinawa Prefecture, Ishigaki City)
- The number of COTS removed by : 58333 (2005-2015) (Contractors: Yaeyama Fisheries Cooperatives, Ishigaki Island Marine Leisure Cooperatives etc.)

Establishment of coral communities transplanted technology by coral sexual reproduction

- Cumulative number of transplanted corals サンゴ移植の累積数: 51,747 (area: 5,175 m²) (2004-2015)
- Development of coral settlement devices to collect coral larvae and enhancement of efficiency of larvae collection through improvement of the transplantation technique (Collection rate: 2005: 21.9%→2014:30.9%)

Coral Transplantation at a dredging site in the Taketomi sea route (MOE and Okinawa General Bureau (OGB))

- OGB started the coral transplantation from a dredging site in the Taketomi sea route in 2011

- Collaborating with OGB, in 2013 MOE transplanted coral communities from the Taketomi sea route to the areas that are considered to be important sources of coral spawning.

Development of rules for sustainable resource use in Sekisei Lagoon involving local governments, fishery and tourism industries)

- In 2010, developed short-term and mid/long-term rules for marine resource use, including fishery resources, diving tourism.
- Developing a rule map for resource use and conservation of the Sekisei Lagoon waters

Training and environment education program on coral reefs conducted by the government and private sector

- Holding learning sessions on coral reefs jointly organized by the MOE, “Waku-waku Sango Ishigaki Island” (literally means “Excited about corals at Ishigaki”), Specified NPO Sekiseishouko Coral-reef Fund, etc.
- Events for marine life observation collaborated by MOE and Coral Cultivation Team of Yaeyama Fishery Cooperatives

Continual monitoring of coral reefs

- The tendency of slight recovery was observed in general in recent years, but now, decrease in coverage is concerned because of the breaching event in summer of 2016.
- The accumulation and publication of data on coral communities in Sekisei Lagoon:
 - Coral communities (coral coverage, number of coral species appeared, coral larval recruitment, coral-dwelling fishes, etc.)
 - Coral population dynamics (coral larval settlement, population dynamics of *Acropora hyacinthus*, etc.)
 - Disturbing factors (water quality, water temperature, salinity, underwater visibility, light photons, SPSS, coral diseases etc.)
 - Marine environment observations by observatory buoys (water temperature, salinity, underwater visibility, water level, wave height, etc.)
- The survival rate of transplanted corals (2-5 years; 20-40 % survived)
- Spawning of transplanted corals: first observed in 2010; since then, observed annually)
- Coral-dwelling fishes inhabiting transplanted corals (*Upeneus*, *Paragobiodon*, Trapeziidae (coral-dwelling crabs), etc.)

Establishment of the Sekiseishouko Coral-reef Fund to raise funds for WG activities (2009)

- Management body: NPO Sekiseishouko Coral-reef Fund (became an NPO in 2013)
- Raised funds (cumulative) : 12,314,000JPY (~2015)
- project cost : 8,869,000JPY(~2015)

Since reducing environmental impacts takes a long time, its effects are not readily visible; however, under the project overall plan, each participating entity has been making steady efforts, sharing information and collaborating with one another. Monitoring and evaluating the progress

	and effectiveness of the activities at General Meetings and each WG, monitoring recovery status of the coral reef ecosystem, and enhancing or maintaining the coral reef resilience, the committee has been promoting the natural restoration of the Sekisei Lagoon.
Lessons learned	<p>To effectively promote the restoration of natural ecosystems that provide a variety of ecosystem services, we have to accomplish the project integrally, formulating a framework participated by a variety of stakeholders including not only marine but also terrestrial fields, taking into consideration the scale of targeting natural ecosystems and the surrounding social activities. In particular, it is important to set up a common goal among parties, which enables each party, who might have been carrying out its own activity, to recognize its role and evaluate the effectiveness of its activity from a holistic view. In addition, building up networks among parties under the project framework can facilitate collaboration among the project activities, and provide opportunities for mutual evaluation and information sharing. Furthermore, we learned the importance of adaptive management according to scientific information collected by the coral reef ecosystem monitoring, and evaluation of the effectiveness of the project implementation.</p> <p>It should be noted that the structure of the committee itself can be reviewed, which is also a vital point in adaptive management. The establishment of the WGs in 2012 is one of the outcomes, and it is our hope that it will increase the effectiveness and practicality of the project.</p>
Related websites (English preferred)	Sekisei Lagoon Portal (http://sekiseisyouko.com/szn . Japanese only)[Insert text here]

Project 3

Cornerstone(s) implemented through the project	Check all that apply: <input type="checkbox"/> Integrated Management <input type="checkbox"/> Capacity Building <input checked="" type="checkbox"/> Science & Monitoring <input type="checkbox"/> Periodic Assessment (Review)
Project Title	Research funds to support environmental policies (1)led by Prof. Kazuo Nadaoka,2)led by Ass. Prof.Yasuda Nina,3)led by Kazuhiko Takeuchi)
Location	1)Sekisei Lagoon,2)Japan,3)Japan
Dates	1)2014-2015,2),2015-2017,3)2016-2020
Main Organizer(s)	Ministry of the Environment, 1)Tokyo Institute of Technology,2)University of Miyazaki ,3) Integrated Research System for Sustainability Science at the University of Tokyo
Main Stakeholder(s)	[Insert text here]
Description of Project (Please elaborate on how the project implements the FFA cornerstones)	<p>MOE funded Tokyo Institute of Technology's research on "contributing to the Sekisei Nature Restoration Project though understanding the integrated network/connectivity of island - coral reefs - outer sea.", University of Miyazaki's research on "Consideration about marine protected areas on basis of potential move toward north by analysis of gene flow" , :Integrated Research System for Sustainability Science at the University of Tokyo on" Predicting and assessing natural capital and ecosystem services through integrated social-ecological systems approach"</p> <p>Also, MOE strives to bridge the gap between research outcomes and policies.</p>

Outcome (Expected outcome)	1)The findings were summarized in 2016, and will be reflected in the Sekisei Lagoon Nature Restoration Project.
Lessons learned	By having the government support academic research, it becomes possible to match the information needed for policy-making with specific research plans, and this match brings mutual benefit to both researchers and policymakers.
Related websites (English preferred)	N/A

Project 4

Cornerstone(s) implemented through the project	Check all that apply: <input type="checkbox"/> Integrated Management <input type="checkbox"/> Capacity Building <input checked="" type="checkbox"/> Science & Monitoring <input type="checkbox"/> Periodic Assessment (Review)
Project Title	The monitoring of areas with important ecosystems (Monitoring Sites 1000)
Location	Main coral sites: Tokara Archipelago, Amami Islands, Okinawa Island and its surrounding islands, Kerama Islands, Daito Islands, Miyakojima Islands, Ishigaki Island, Sekisei Lagoon, Iriomote Island and its surrounding islands, Ogasawara Islands High-latitude coral communities: Yakushima/Tanegashima Island areas, Tateyama, Iki area, Kushimoto area, southwest coast of Shikoku (Uwakai~Cape Ashizuri), south coast of Kagoshima, Amakusa area
Dates	Since 2003
Main Organizer(s)	Biodiversity Center of Japan, Nature Conservation Bureau, Ministry of the Environment
Main Stakeholder(s)	Researchers, research group
Description of Project (Please elaborate on how the project implements the FFA cornerstones)	To understand the conditions of Japan's coral reef ecosystems and collect information for their conservation, we are monitoring coral cover, bleach rate, the number of crown-of-thorns starfish, Suspended Particles in Sea Sediment (SPSS), and water temperature.
Outcome (Expected outcome)	We produce a report every fiscal year and a analysis report every five years.
Lessons learned	[Insert text here]
Related websites (English preferred)	http://www.biodic.go.jp/moni1000/coral_reef.html (only available in Japanese)

3. **Publications.** Please list relevant publications/reports you have released during this reporting period.

Title (incl. author and date)	Website URL if available	Type of publication (Paper, report, etc.)
The Action Plan to Conserve Coral Reef Ecosystem in Japan 2016-2020	https://www.env.go.jp/nature/biodic/coralreefs/pamph/C-project2016-2020_L.pdf (in Japanese only)	Government document
Case Studies: From Ridge to Reef	https://www.env.go.jp/nature/biodic/coralreefs/pamph/C-community_EN.pdf	Government case study report

4. **General Information.** (Note that this information will be posted on the ICRI website on your member page: <http://www.icriforum.org/about-icri/members-networks>.)

Member type (Country / Organization):	Country: Japan
Focal Point 1:	
Name:	Mari Yamazaki
Title/Organization:	Ministry of Environment
Email:	MARI_YAMAZAKI@env.go.jp
Focal Point 2:	
Name:	
Title/Organization:	
Email:	