



Japan's report on activities to ICRI

Presented by Ministry of the Environment, Japan

Reporting period

April 2005 to September 2007

Summary of Activities

Major activities in support of ICRI in Japan during the period include the followings:

1. Japan is co-hosting ICRI Secretariat with the Republic of Palau from July 2005 to Jun 2007. Activities relating to the ICRI Secretariat are detailed in the Secretariat Report.
2. In order to facilitate achievement of WSSD 2012 target, Japan has launched a project to fill the information gaps and to establish a concise and up to date inventory of coral reef MPAs in East Asia and Micronesia.
3. Japan International Cooperation Agency (JICA) has conducted a group training course on coral reef conservation and management for participants from the developing countries in June-July 2006.
4. In November 2005, two coral reef sites, the high-latitude Kushimoto Coral Communities and Kerama-shoto Coral Reef, were designated as Ramsar site.
5. The Ministry of the Environment (MoE) is leading several national projects including "Coral Restoration Program" and "National Monitoring Program", and newly designating Marine Park Zones.
6. Fisheries Agency is developing a coral culture technology to be adopted for the sea area of Okinotorishima.
7. Okinawa Prefectural Government is facilitating Crown-of-Thorns Starfish removal Program by local communities in Kerama Islands.
8. Detailed information is provided in the Annex.

Annex

Japan's activities relating to coral reefs and associated ecosystems

1. Coral Reef MPAs of East Asia and Micronesia Project

Marine Protected Areas (MPAs) are widely recognized as important tools in coastal and marine resources management. The World Summit on Sustainable Development (WSSD) in 2002 has set a global target to complete establishing representative networks of MPAs by 2012 in order to facilitate protection of marine ecosystems. However, baseline information to implement this global target is insufficient particularly in Asia-Pacific region where the biological diversity is highest. There is an explicit need for regional and global MPA baselines, such that the progress towards comprehensive, representative regional/global networks of MPAs can be readily monitored. Thus, MoE, in cooperation with the Worldfish Center, has launched a project to fill the information gaps and to establish a concise and up to date inventory of coral reef MPAs in East Asia and Micronesia as one of the Secretariat Plan of Action during the term of co-Secretariat (July 2005 – June 2007). This will be achieved by conducting a regional assessment of MPAs with coral reefs, in order to update the existing MPA database (i.e., MPA Global Database and ReefBase); and to compile the information into an interactive CD-ROM for distribution. The summary results will be presented and discussed at ITMEMS3 in October 2006 and the CD-ROM and websites will be launched at the third ICRI general meeting in April 2007. MoE is planning to further expand the database to cover whole Pacific Island countries.

2. JICA Training Course for Coral Reef Conservation

Japan International Cooperation Agency (JICA), cooperating with MoE, has been offering developing countries a group training course on coral reef conservation and management, annually since 1995. Until 2006, the course has hosted 77 participants from 28 countries. The course program has been revised several times and the current course "Management and Conservation of Coral Reef Ecosystem in Asia-Pacific Region" targets administrative officers and countries in Asia and Pacific regions. The course is conducted in Okinawa Prefecture, where coral reefs and sub-tropical condition exist. In 2006, the course was held from June for about 50 days, with 6 participants from 6 countries (China, Indonesia, Kiribati, Palau, Philippines and Samoa). The course aims to improve participants' understandings on: 1) functions of coral reefs, the relationship between coral reefs and human activities and economic values and importance of their conservation and management; 2) theory and methodology of conservation and restoration of coral reefs; 3) tourism in coral reefs and environmental education of coral reefs; 4) planning of integrated management of coral reefs, and producing practical management plans in their countries; and 5) the importance of monitoring coral reefs, and the monitoring techniques. Administrative officials (upper age limit is 45) who are involved in coral reef conservation and/or planning of coastal area development and its resources are eligible for the course. The applicant will be nominated and selected through bilateral channel. For more information, please contact the nearest JICA overseas offices.

3. Designation of two coral reef sites as Ramsar Sites

At the 7th Ramsar Conference of the Parties (COP7) in 1999, the short-term target was adopted to increase the global number of Ramsar Sites to more than 2000 by COP9 in 2005, which meant almost doubling its number. At the same time, Parties were encouraged to designate various types of wetlands as Ramsar Sites, including coral reefs, mangroves and karst. In response to this global target, Japan set its national target to increase the number of Ramsar Sites from 11 to at least 22 (which was doubling the number) by COP9. As a result, 20 new wetlands including two coral reef sites were designated in November 2005. Currently, the total number of Ramsar Sites in Japan is 33, whose total area is 130,293ha. The high-latitude Kushimoto Coral Communities and Kerama-shoto Coral Reef, the two of the newly designated Ramsar sites covering 574ha and 353ha respectively, have some of the world's most important coral reef ecosystems with outstanding biological diversity.

4. Designation of the Marine Park Zones

The Marine Park System was established for the purpose of preserving the abounding nature, such as sea-grass beds and coral reefs, in the coastal sea regions, in 1970. The area for the Marine Park is assigned in a National Park or a Quasi-national Park. The Marine Park Zone is designated for preserving beautiful underseascapes on the basis of Park Scheme. In the Marine Park Zones, the activities such as erection of structures, collection of specific animal and plants and/or changing the features of the seabed shall not be undertaken without the permission of the Minister of the Environment in case of National Parks and the permission of the prefectural government in case of Quasi-national Parks. As of 2006, there are sixty four Marine Mark Zones in Japan, distributed in the range from Shakotan Peninsula of Hokkaido in the northern area to the Yaeyama Islands of Okinawa in the south. 13 areas of them are on the coral reefs and 21 areas

include coral communities (the total area counts 2,759 ha). In 2006, Tatsukushi Marine Park in Ashizuri-Uwakai National Park and Kushimoto Marine Park in Yoshino-kumano National Park was expanded.

6. Monitoring Sites 1000 Project

In 2003, MoE launched the “Monitoring Sites 1000 Project” which aims to continuously monitor wide range of natural environment in Japan over 100 years. The project is to accumulate fundamental information for biodiversity conservation in Japan by continuously collecting and analyzing data on biodiversity in various types of ecosystems, including coral reefs, in cooperation with researchers and NGOs. As a part of the project, fixed point observations have been conducted every year since 2003 at 24 sites on coral reefs or coastal areas inhabited by coral communities. The coverage of live corals, types of their growth, accumulation of silt and other relevant data are recorded by a Spot Check method, a 15 minutes time swim direct observation, at each point by team observers. According to the results between 2003 and 2005, overall trends revealed that outbreaks of the Crown-of Thorns starfish are expanding and causing enlargement of damages to coral reefs in Japan. Physical disturbances by frequent typhoons are also damaging coral reefs.

7. Coral Reef Restoration Projects

“The Law for the Promotion of Nature Restoration” came into force in 2003. The Law provides concept of Nature Restoration and stipulates the procedure for Nature Restoration Projects. In line with the Law, MoE has initiated nature restoration program, two of which are targeting restoration of coral reef ecosystems. One project is conducted at Sekisei Lagoon in Okinawa Prefecture, which is the biggest coral reefs in Japan. Another project is conducted in Tatsukushi Bay, which has a representative example of a coral community in high latitude area.

1) Sekisei Lagoon Nature Restoration Project

“Sekisei Lagoon” lies between Ishigaki Island and Iriomote Island in the south-west of Ryukyu Archipelago. Extending 15km north-south and 20km east-west, Sekisei Lagoon is Japan’s largest scale coral reef area and a part of “Iriomote National Park”. Due to the geographic location - being near Philippine Sea and to the benefits received from warm Kuroshio Current - more than 360 hermatypic coral species have been reported. In recent years, however, the status of coral reef ecosystems has been largely degraded by various factors, such as red soil run-offs, aggravation of water quality, mass bleaching events and outbreak of Crown-of-thorns starfish. Under such circumstances, MoE conducted the research for coral reef restoration. Based on the research output, MoE formulated the “Sekisei Lagoon Nature Restoration Master Plan” in cooperation with various relevant organizations. This Plan provides the fundamental ideas for implementing nature restoration programs, which covers a wide variety of issues such as adequacy of conservation, sustainable use, restoration of degraded coral communities and environmental education. Based on the plan, MoE launched Coral Restoration Program using a special device to settle larvae. The device is used as artificial substratum by fixing to the sea bottom with adhesive paste. In addition, in order to promote collective effort by stakeholders, such as fishermen, tourist operators, scientists, and NGOs, as well as relevant administrative bodies, MoE, in cooperation with Cabinet Office and Okinawa Prefectural Government, called on “Sekisei Lagoon Nature Restoration Committee” in February 2006. The Committee is expected to formulate “the Grand Design for Sekisei Lagoon Nature Restoration”, which defines goals and role differentiation of all stakeholders.

2) Tatsukushi Bay Nature Restoration Project

Tatsukushi Marine Park Zone in Ashizuri-Uwakai National Park is located along the south coast of Tosashimizu City, Kochi Prefecture. It enjoys high reef-building (hermatypic) coral coverage and abundant marine flora and fauna under the strong influence of the Kuroshio Current in spite of its high latitude. Such geographical advantages led to this area being designated in 1970 as one of the first National Marine Park Zones in Japan. Recently, however, turbidity in water and aggravation of water quality due to coastal development in the surrounding region as well as natural disasters like typhoons and heavy rains have caused serious damages to the coral communities in the area. Especially, in 2001, a concentrated heavy rain triggered considerable amount of sediment to flow into the sea, severely damaging the whole coastal ecosystems including coral reefs. To cope with the situation, MoE urgently cleared a part of the accumulated dirt and mud in 2002, and in the following years, initiated comprehensive research and examination of the surrounding area including the forest and rivers in order to restore coral communities. Then, to mobilize collective efforts by relevant sectors, such as the related administrative agencies, related organizations and bodies, specialists and local citizens, MoE established “Tatsukushi Nature Restoration Committee” in September, 2006.

8. Coral culture technology by Fisheries Agency

Fisheries Agency is developing a coral culture technology to be applied to the sea area of Okinotorishima, a solitary island 1700km south of Tokyo, from 2006 to early 2009, where hydrographic condition is severe and supply of coral larvae from other reefs is rarely expected. Because it is difficult to built and maintain facilities at Okinotorisima, the Agency conducts the nurturing process in Okinawa Prefecture. In concrete terms, the Agency first collects the donor coral colonies from Okinotorishima to avoid any genetic disturbances and send them to a research institute in Okinawa. And then the donor colonies are induced spawning in the tank, and the newly settled juvenile corals are nurtured to a certain size suitable for transplantation. The transplants will then be shipped back to their home island and be transplanted on the reef. The Agency is also considering plans to prevent larvae flow out of island by installing nets around coral colonies and by developing artificial substrata for larvae to settle. Through such studies, the Agency is aiming at establishing an adoptable coral culture technology, as well as identifying suitable marine environment conditions for corals of isolated islands where habitat conditions are severe. The Agency intends to disseminate these achievements compiled into a guideline in early 2009, hoping that it will contribute to the world's coral proliferation, particularly that of the Pacific Island Nations.

9. The Crown-of-Thorns Starfish control program by Okinawa Prefectural Government

The Crown-of-Thorns Starfish, *Acanthaster planci*, infested coral reefs of the west coast of Okinawa Island in 1996. In 2002, the infestation spread to the Kerama Islands which is an important source of coral larvae for the reefs of Okinawa Is. and surrounding islands. With an increasing demand for coral protection from starfish predation, the Cabinet Office of Japan, by the request from Ministry of the Environment, allocated budget for "Contingency Conservation Plan for Coral Reefs" that was to be implemented by the Okinawa Prefectural Government with its matching budget. The Prefectural Government called together the Crown-of-Thorns Starfish Control Consortium, representing governments, fisheries and tourism, NGOs and scientists, in July 2002 to implement the Contingency Plan. All scientists and other Consortium members agreed, from the beginning, that control efforts were necessary in Okinawa where the local economy largely depends on coral reef resources. It was also agreed that the ownership of control activities should be shifted to local communities, because the previous top-down, budget-driven control efforts had little effect on coral protection. Under this agreement, the following three objectives were set: (1) Identify target areas in which control efforts have to be concentrated; (2) Establish partnerships between governments and local communities; (3) Implement a pilot project in the Kerama Islands. After broad scale surveys on the status of corals and the starfish, five target areas were identified in the Kerama Islands, from the view point of scientific and economic values, local necessity and accessibility. Since then, the local community in the Kerama Islands, with the financial and logistic supports from the Okinawa Prefectural Government and The Consortium, has been conducting vigorous control activities. The Contingency Plan is considered successful, because coral cover within the target areas has been well maintained.