Marine Protected Areas and "Satoumi" in Okinawa, Japan

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Abstract

Although international targets of Marine Protected Area (MPA) networks imply ecological networks, there are not so many cases of such networks, especially at a large scale. However the concepts of ecological network or connectivity are also important for small scale conservation efforts when local communities decide the locations and sizes of MPAs. The concepts of "spillover effect" and "larval transportation" are important, too. Because the communities can benefit from no-take and permanent MPAs, only if the spillover or the larval transportation occurs there. Okinawa has some evidence of the spillover and larval transportation. For example, better recruitment of giant clam *Tridacna crocea* occurred outside Kabira-bay MPA, or young emperor fish *Lethrinus nebulosus* spilled over from Haneji-Nakijin MPAs. Also we proved the connectivity of coral larvae transportation from the Kerama Islands to Okinawa Island, using GPS drift buoys and high frequency ocean radars. There exist large regional scale MPA information networks such as ICCAs: Indigenous and Community Conserved Areas, LMMA: Locally Managed Marine Area network, and East Asia MPA Network.

Another topic of my presentation is "Satoumi". "Sato" means village and "umi" means the sea in Japanese. The most widely used definition of Satoumi is "High productivity and biodiversity in the coastal sea with human interaction". Coral reefs and fisheries resources have been devastated in Okinawa. To conserve the coral reefs, one option is to protect pristine wilderness from all human impacts including fisheries. However in many cases, this would deprive local communities of essential ecosystem services and often of their livelihood, and would not be a realistic option. It is thus essential to harmonize the coral reef conservation and the sustainable use of the resources, especially in Asia-Pacific. Satoumi concepts are useful to realize this. The Satoumi experiences in Okinawa illustrate a number of good practices for managing biodiversity and fisheries resources in reef ecosystems that are under significant anthropogenic influence.