

## Seaweed Ecosystem Integration to Marine Protected Areas

**Jayvee Ablaña Saco**

Laboratory of Cell Structure and Function  
Graduate School of Kuroshio Science, Kochi University  
2-5-1 Akebono-cho, Kochi City, 780-8520, Japan

The Philippines being an archipelagic country showed great biodiversity on the seaweed resources (Trono 1999, Ganzon-Fortes 2012, Ang et al. 2013). These has been a very essential and indispensable component in the marine ecosystem as primary producers, along with phytoplankton and seagrasses. These has always been an integral part and crucial resources on the lives of the coastal communities' time immemorial.

They have been used primarily as food for human consumption, feeds for domesticated animals, fertilizer for plants, insect repellent, traditional medicine and others. At

present time, some seaweed species is being commercially cultivated in the Philippines i.e., *Eucheuma*, *Kappaphycus*, *Gracilaria*, etc. to extract natural products i.e., agar, alginates and carrageenan for industrial, commercial and medical purposes.

Ecologically, seaweed ecosystem provides major food source for higher trophic level organisms alongside with seagrasses and mangroves; shelter and nursing grounds to other marine organisms; coral reef builders; source of sediments; substrate stabilizer and carbon dioxide sink.

Even with these great importance on their ecological and economical aspects, these marine resources are still neglected in terms of their protection and conservation. Most especially being included as part of a Marine Protected Area (MPA). More so, there are already some MPAs that are highly efficient on including seaweed community and might produces beneficial advantage to the whole coastal ecosystems.

In the case of Cagayan region, some of the municipality i.e., Gonzaga and Sta. Ana included a part of the seaweed community in their MPAs coinciding with hectares of seaweed beds outside the MPAs (ca. 14 ha of whole coastline). Seaweeds was allowed to be harvested only during the months of January to April on marine reserves but not on marine sanctuary with proper harvesting method i.e., gleaning (Source: Management Plan of Tapel, San Jose and Casitan MPAs in Gonzaga & Palaui Island Protected Landscape and Seascape in Sta. Ana).

Some of the commercially important seaweed resources included are: greens (*Caulerpa*, *Codium*, *Chaetomorpha*, *Chlorodesmis*, *Halimeda*, *Valonia*, *Ulva*); browns (*Dictyota*, *Padina*, *Sargassum*, *Turbinaria*) and reds (*Eucheuma*, *Gelidiella*, *Gracilaria*, *Halymenia*, *Kappaphycus*). Furthermore, a sound and reliable study should be conducted to establish the beneficial effect of the inclusion of these seaweed beds/resources in the MPAs.

## References

- Ang PO Jr, Leung SM, Choi MM. 2013. A Verification of reports of marine algal species from the Philippines. *Philipp. J. Sci.* 142: 5-49.
- Ganzon-Fortes ET. 2012. A historical account of biodiversity studies on Philippine seaweeds (1800-1999). *Coast. Mar. Sci.* 35: 182-201.
- Trono GC Jr. 1999. Diversity of the seaweed flora of the Philippines and its utilization. *Hydrobiologia.* 398/399: 1-6.