

Marine Protected Area Establishment: Part of the solution toward sustainable development along Kuroshio region

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An essential management strategy to address threats affecting marine and coastal ecosystems and the communities that depend on its resources is the establishment of Marine Protected Areas (MPAs). A tool recognized globally as integral component of the solution to various emerging threats in marine environment (Pauly et. al, 2002). The Apo and Sumilon Island marine reserves were two well-known marine protected area located in the Visayan region of the Philippines. These two marine reserves showed promising results of its effects in the nearby fishing ground by increasing its fishery production.

One of the world's ocean current is Kuroshio (literally means black current) form in the North Equatorial Current bifurcation region, the mean bifurcation occurs at about 14.2 °N near the surface with a depth ranging from 0-100 meters (Qu and Lukas, 2003). The current carries enormous volume of warm water from the pacific seaboard of Luzon in the Philippines passing eastern side Taiwan up to Japan archipelago. The three countries where lives of the community directly or indirectly benefit from the resources brought by the Kuroshio Current were collectively part of the Kuroshio region. In the Philippines, Lagonoy gulf is one of the major fishing grounds in the country strategically situated in the region where the current originates as a result of NEC (North Equatorial Current) bifurcation. The gulfs have seven established MPA's ranging from paper MPA to well manage MPA's.

Studies conducted in the said MPA's revealed that the overall qualities of habitat (coral, seagrass and mangrove) since the establishment have improved substantially from poor to fair/good condition (David et. al 2004). Other studies of MPA's in the Philippines provide evidence of spill over effect (e.g. Russ and Alcala, 1996; Russ and Alcala, 2003; Soliman, 2003) to nearby fishing grounds which increases fishery harvest, interestingly fishery production in Lagonoy gulf continually decline over the years. This goes to show that the MPA establishment intended to enhance fishery production where not achieved. The continued decline in fishery production in Lagonoy gulf where attributed to the exponential increase in fishing pressure (Dioneda et. al. 2004). This suggest that the cumulative MPA size relative to fishing ground may not provide substantial effects in terms of spill over. The supposed to be increased in fishery production

could have been a rallying point to gain support from fishing community to establish more MPA's, thus increasing the cover of MPA area. A plausible solution seen by various fishery managers to the problem is reduction of fishing pressure/effort, which along the process entail displacement of fishermen. In developing country e.g. Philippines wherein fishing community rely mostly on reef fisheries, thus fishing pressure in most municipal water in the country is high. Reduction in fishing effort would mean shift from artisanal to offshore fishery, which is the trend among fishermen. Although this shift can be seen a viable alternative for displaced fishermen for source of income, common problem encountered by fishermen were low market value because of lack in post-harvest facilities that would prolong the good quality of fishery product from long fishing time. If this problem were address fishermen could set a good price for the fishery product consequently it will redound to increase income.

Local Government Unit (LGU's) and Non Government Organization (NGO's) are providing supports and aids to fishing community in the form of alternative livelihood. The support given in a way encourages fishing household to lessen its dependence to fishing as their main source of income. This was done through the technical assistance and loans to cooperative composed of fishermen's wife or household in their approved small-scale business proposal. The funding donor encourages coming up with business ventures unique in certain locality, in this way competition between localities were averted. Livelihood activities usually focused on value adding to certain fishery products or commodities in the locality through sustainable resource utilization. National government provides post-harvest facilities in some region of the country and post harvest handling training of fishery products to prolong the good quality of the product.

Through this intervention from various organization and stakeholders, tangible reduction of fishing pressure could be attained. Establishment of MPA's is part and parcel of the solution to arrest the decline of fishery and safeguard it from impending collapse. It should be couple by various measures such as reduction of fishing exploitation to a certain level wherein the resource can replenish its stock at the same time can sustain the needs for protein source of the people; and strict implementation of fishery laws.

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