Integration of Fisher Knowledge and Remote Sensing in Predicting Reef Fish Spawning Aggregations

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Abstract: Accordance to the development in fisheries sector, traditional fisher knowledge seems to be marginalized by the scientific researchers though fishers tend to have great local knowledge related to the ocean environment as they spent most of their time on water. Hence there is a significant need to take fisher knowledge into consideration of scientific study. This paper reviewed the use of fisher knowledge and remote sensing respectively as well as their integration in predicting reef fish spawning aggregations. Firstly, fisher knowledge regarding this issue was studied. Their knowledge are basically based on environmental condition, their years of fishing experience and traditional belief passed down by their ancestors. Then, this study observed the utilization of remote sensing technique to predict these spawning aggregations of reef fishes. Basically the times and locations of this phenomena were delineated based on indirect observation of few ocean characteristics such as bathymetry, geomorphology, sea surface temperature (SST) and chlorophyll concentration. Although there are actually quite a lot of studies that had been carried out regarding reef fish spawning aggregations using respective approach, but there are just a few that integrate both. Some of the reasons maybe due the equivocal evidence of fisher knowledge as they have not been proved scientifically. On the other hand, most traditional fishers still skeptical with scientific approach such as remote sensing as they believed that these approach did not adequately reflect the fishing grounds. Nonetheless, we cannot denied that the integration of both fisher knowledge and remote sensing is indeed improve the prediction of reef fish spawning aggregation hence help the authorities to establish a more effective protection plan in the future.

Keywords: Reef fish spawning aggregations, fisher knowledge, remote sensing, integration