ABSTRACT

Upwelling is an oceanographic phenomenon that brings nutrients from the ocean floor to the surface, playing a crucial role in supporting marine ecosystem productivity. Detecting upwelling areas is essential for fisheries resource management and understanding climate change. One of the primary indicators of this phenomenon is the change in Sea Surface Temperature (SST). This study aims to analyze SST data using the Fuzzy C-Means (FCM) method to detect upwelling areas. SST data in netCDF format are plotted as images, then clustered using FCM to produce map images in ".png" format. The clustering results are evaluated using the Silhouette Score. This study concludes that the FCM method is effective in clustering SST data and accurately detecting upwelling areas. The clustering evaluation resulted in a Silhouette Score of 0,72.

Keywords : Fuzzy C-Means, Sea Surface Temperature, Upwelling, Clustering