ABSTRACT

Bidawi Hasyim. Management of Potential Fishing Zone in Madura Strait and its Surrounding Based on Spatial and Temporal Approaches. Supervised by M. Fedi A. Sondita, John Haluan and Mahdi Kartasasmita

Fish resources in the east part of Madura Strait has been traditionally utilized by Situbondo fishermen. This research was aimed at: (1) describing the dynamics of potential fishing zones (PFZ) by analyzing sea surface temperature and chlorophyll-a content, wind velocity and wave height, and (2) developing spatial and temporal direction of fishing operation and cooperative fishing operation based on the distribution of PFZ. This research synthesized 10-year weekly sea surface temperature (SST) data in the Madura Strait and its surroundings derived from satellite remote sensing becoming 48 weekly SST data, identified and synthesized 48 PFZs data becoming 12 monthly PFZs, then analyzed monthly PFZ based on its distribution and density classification in each spatial units. Based on regional planning, the fishing management zone of Situbondo can be distinguished into 3 areas: PPI Besuki zone in the west, PPI Tanjung Pecinan Zone in the middle and PPI Pondok Mimbo Zone in the east.

Fishermen from the three PPIs have different capacity in accessing the PFZs identified in this research. The fishermen from PPI Besuki and Tanjung Pecinan, especially who operate fishing boats larger than 20 GT, have better technological capacity than the fishermen from PPI Pondok Mimbo, especially to operate during easterly wind season. The fishermen from the first two PPIs can access most part of the strait and its adjacent waters while those from the PPI Pondok Mimbo can access the PFZs as far as 20 kms from the shore. Cooperative fishing operation among the fishermen from various locations surrounding Madura Strait and its adjacent waters is needed to promote greater access to the PFZs identified in this research and prevent conflicts on fishing ground. Such cooperative operation needs to be supported by inter-regional governments (Kabupaten) in the area through wider integrated fisheries management, including development of regional fisheries industry network.

Keywords: Capture fisheries management, remote sensing, sea surface temperature, fishing ground, Madura Strait.