

ABSTRACT

Marine capture fisheries is one of the most widely practiced businesses by the people of Indonesian and especially in East Borneo. In generating a lot of fish production, a storage area is needed to maintain the quality of the fish to keep it fresh, but all of that is still the use of styrofoam and ice cubes to maintain the quality of the fish so that it is considered to have no ergonomic value due to taking up space in the boat and also from ice cubes placed in styrofoam will make the size of the storage small. And fishermen also risk falling overboard when putting fish into fish storage. If the fishermen release the fish from the net to the cooler storage box, the risk of falling is higher due to the lack of balance of the fishermen with the limited size of the boat.

To solve the above problems, a cooling box design solution using an evaporation system with the Ergonomic Function Deployment (EFD) method is needed in this study. This cooling box makes it easy for fishermen to store fish catches in a cooling box that uses an evaporation system from activated carbon from empty palm bunches and coconut shells. In making the design of this research design, it is focused on a cooler box that is tailored to the needs of fishermen in terms of ergonomics being a priority in this study, so using the Ergonomic Function Deployment method to create a cooler box design based on the concept of ergonomics, namely EASNE (Effective, Safe, Healthy, Comfortable, and Efficient).

Based on the design process carried out, the concept design specifications 1. By simulating in several tests, the temperature results of palm and shell activated carbon with 35% potentiometer rotation obtained temperatures of 24.4 °C and 25.3 °C, fan speeds of 4218 rpm and 4231 for battery usage time of 287 minutes, for 70% potentiometer rotation with temperatures of 23.7 °C and 24.9 °C, fan speeds of 8625 rpm and 8975 for battery usage time of 189 minutes, for 100% potentiometer rotation with temperatures of 21.4 °C and 24.6 °C, fan speeds of 14305 rpm and 12828 for usage time of 135 minutes.

The purpose of the design of a cooling box using an evaporation system is expected to be useful for fishermen who are in accordance with the needs so that this proposal can help fishermen in their activities when catching fish and make it easier to maintain fish quality.

Keywords - Fisheries, Fishermen, Cooling Box, Activated Charcoal, Empty Palm Bunches and Shells.