

Developing a Framework to Assess the Suitability of Energy Mixes for Fishing Vessels: A Narrative Literature Review

A. G. P. Layanga^{1*}, and W. N. De Silva²

¹ Faculty of Graduate Studies, University of Ruhuna, Sri Lanka

² Department of Agricultural Economics & Agribusiness, Faculty of Agriculture, University of Ruhuna, Sri Lanka

*pamudisamudura@gmail.com

Abstract

The global economy is moving towards new energy types and energy mixes. In the energy sector, energy diversification and energy transition are popular topics. The energy consumption of the fisheries industry is one of the widely discussed topic in the world. The aim of this research was to develop a framework that evaluates the suitability of energy mixes for fishing vessels with different energy diversification and energy transition scenarios. A narrative review of literature was utilized. Twenty-eight research papers were gathered using a string of key words: “energy mix”, “energy source”, “energy consumption”, “fishing”, and “shipping” applied to the Web of Science database. Four inclusion and exclusion criteria were used to select the final set of literature (17) of this study. A framework for evaluating the acceptability of various energy mixtures for fishing vessels has been designed based on the knowledge synthesized through thematic analysis. The framework consists of seven criterions: 1) energy diversification and transition scenarios, 2) characteristics of the industry, 3) types of suitability assessments, 4) assessment lenses, 5) assessment criteria, 6) energy types (level 01) and energy mixes (level 02) and 7) identification of the level of suitability. This can be regarded as a basic structure that can be modified to meet the objectives of energy diversification. Hence, this framework can be utilized as a tool for policy decision making in both fisheries and energy sectors. A developed and modified version of the framework can be used for the other stages of the fishery industry and other industries to assess the suitability of the energy mixes.

Keywords: *Energy diversification, Fishing vessels, Framework, Structure*