Strategies development of lift net fishing equipment in Krueng Raya, Aceh Besar

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Abstract. The crucial thing in lift net is fishing equipments such as lamps, generator and roller as supporting the fishing operations activities. The less function of that fishing equipments can be affect to the caught. The development of fishing equipment in lift net is important to increase the production of caught. This study aim to find out the development strategies of lift net fishing equipment in Krueng Raya. The strategies development of fishing equipment will be analyzed by using analytic hierarchy process (AHP) based on interviewed with respondents, they are fisherman, panglima laot, and Department of Marine and Fisheries of Aceh. The result showed that the strategy development of fishing equipment in lift net in Krueng Raya is prioritized to modernizing of fishing equipment (0,579) with total consistency ratio 0.04.

1. Introduction
Lift net is a passive fishing gear, which is using the light as attractor and fishing schooling as fish target [1]. Lift net for the first time is found as a fishing gear by Makassar and Bugis people in South of Sulawesi island in the early of 1950 [2]. Large of fisherman in Aceh Besar, especially Krueng Raya uses the lift net to catch the fish. The operation of fishing gears in lift net is always supported by fishing equipment [3]. The main fishing equipment used in lift net are lamps, generator sets and rollers [4, 5]. The less function of fishing equipments can be affect to the caught.

The competition of fish were catched in lift net are not much improvement, (1.204,2 ton in 2012, 1.615,3 ton in 2013 and 1.864,2 ton in 2014), it can happen because the less optimal function of the fishing equipment [6]. Some researches have been conducted on lift net in Krueng Raya, one of them the research abaut the operation techniques and fish composition. That research showed that the stages operation techniques are dropped the sinker, setting the main net in the water, pulled up the net by using roller and picked up the catch [7], but the study of the development of the fishing equipment has never been done, it is necessary to do a study to reviewing the development strategy of fishing equipment in lift net, so as to improve the caught and the welfare of the Fishermen society. Based on this, this study aim to find out the development strategies of lift net fishing equipment in Krueng Raya.

2. Materials and Method
Research has been conducted from January to February 2017 in Krueng Raya. The data obtained through the questionnaire and analyzed by using the Analytic Hierarchy Process (AHP) method. The stages of Analytic Hierarchy Process are, define the problems, making the hierarchies compilation,
making a comparison matrix, matrix calculation and getting the decision. The research location map was presented in Figure 1:

![Research Location](image)

**Figure 1.** Research Location

3. **Results and Discussion**
The development of fishing equipment in Krueng Raya was aimed to improving the fisheries of lift net, which will improve the caught and impact on the welfare of fishermen society. The strategies for the development of fishing equipment in Krueng Raya were analysed by using Analysis hierarchy process (AHP) method. Based on the results of the Analysis hierarchy process, the best alternative in the development of fishing equipment in lift net in Krueng Raya was modernization of fishing equipment, then procurement of fishing equipment and improvement the utilization management of fishing equipment. The results of analysis showed in Figure 2.
Modernization of fishing equipment in lift net is performed to apply technological advances to the fishing equipment in lift net. By using better equipment will result in more productive fisheries of lift net. Modernization through the enhancement and utilization of the fishing gears technology is crucial to the realization of better fishery management [8]. Some applications of technology can be applied such as the using of LED lamps and underwater lamps is more effective, use of machines to do net withdrawals automatically and others.

The second alternative that can be applied in the development of fishing equipment in lift net in Krueng Raya is the procurement of fishing equipment. The procurement of fishing equipment helps fishermen to reduce production costs. Procurement of fishery facilities and infrastructure from the government according to help the fishermen in terms of saving operational costs [9]. Fishing equipment such as lamps are usually damaged and fisherman do not immediately replaced it for having no funds or do not want to replace them because the other lamps can still be used. The incompleteness of the number of lamps can also affect to the catch.

The last alternative that can be applied in the development of fishing equipment in lift net is improvement the utilization management of fishing equipment. The management improvement of the fishing equipment is also assessed to be needed to provide a better understanding to fishermen on the importance of maintenance of fishing equipment. The successful empowerment of fishing communities depends on the role of the stake holder as the main mover [10]. The utilization of fishing equipment will extend the age of that fishing equipment.

4. Conclusion
The results of Analysis hierarchy process showed that the development strategy of fishing equipment in lift net prioritized to the modernization of fishing equipment (0.579), the procurement of fishing equipment (0.340), and improvement of the management of fishing equipment utilization Arrest (0.081) with a total consistency ratio of 0.04. The modernization of fishing equipment, facilitated by
Department of Marine and Fishery and cooperate with panglima laot, and support by the good management of fishing equipment utilization by the fishermen will realize the better fishing of lift net.

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