CERTAIN ASPECTS OF THE POPULATION BIOLOGY OF THE BALI STRAIT LEMURU FISHERY

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INTRODUCTION

Stocks of the clupeoid, Sardinella longiceps, are found extensively throughout the entire perimeter of the northern and eastern Indian Ocean, extending from the Gulf of Aden, through the Bay of Bengal, to as far as the Indonesian archipelago and the Philippines. The most important clupeoid fishery in the Indo-Pacific region is for the Indian oil sardine (Sardinella longiceps) off the west coast of India (Longhurst, 1971). This fishery, highly susceptible to irregular and large scale fluctuations, has been widely studied since 1920.

Located in the Bali Strait between the islands of Bali and Java, Indonesia, is a small indigenous fishery for Sardinella longiceps locally known as "lemuru". For the past 15 years landings have averaged 9,500 metric tons per year, fluctuating between 3,500 and 17,000 metric tons, yet little is known as to why these fluctuations occur.

Soerjodinoto (1960) presented a partial synopsis on the biology of the lemuru at the World Sardine Meeting in Rome. A short description of the fishery and the various types of indigenous fishing gear used to catch lemuru has been prepared by Soemarto (1960). Dwiponggo (1972) has presented the most complete study of the growth rate of the lemuru and its consequent effects on the fishery.

This paper examines growth, recruitment, mortality, fecundity, and feeding behavior of Sardinella longiceps, hereafter referred to as "lemuru", in an effort to develop information which will provide a factual basis for the assessment, regulation, and possible expansion of the Bali Strait lemuru fishery.

The lemuru fishery was chosen for study because of its proximity to extensive areas of dense human population, indications of relatively high primary productivity in this region of the Indian Ocean, and government interest in developing and expanding the fishery. This study is a result of participation in a joint survey undertaken by the Directorate General of Fisheries, Jakarta, and the FAO/UNDP Fisheries Development Project for Indonesia.