

The Impact of Human Population Dynamics and Spatial Variations of Human Activities on Degradation of Coastal Resources in Matara District

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Sri Lanka has experienced a significant population increase in the past three decades, in 1981 it was 14.8 million and it increased to 20.2 million in 2012 (Department of Census and Statistics, 2013). In addition, Sri Lanka has experienced unprecedented population growth along the coast. In 1981 5.0 million people lived in the coastal areas of Sri Lanka, and by 2001, it increased to 5.7 million (Department of Census and Statistics, 2008). The reason for the growth of population in coastal areas is the change in population dynamics. As a result, population density of the coastal areas has increased from 1981 to 2012. It increased from 516 to 638 persons per square kilometer in Matara District (Department of Census and statistics in 2012). Coastal zones are important ecological systems and key resources for many nations. According to this, in Sri Lanka, the human population density continues to increase faster along the coast than in inland areas with the continuous high intensity of human exploitation of many natural resources. The goal of this study is to examine the impact of human population dynamics and spatial variations of human activities on the degradation of coastal resources in the Matara District.

The main objective of the study is to examine the impact of human population dynamics and spatial variations of human activities on the degradation of the coastal resources in the Matara District. Specific Objectives are to examine the population dynamics, coastal human population activities, and degradation of selected coastal resources. The study area is the coastal belt between Dondra and Weligama in the Matara District (boundary of the coast of my study is limited to two kilometers from coast to inland). There are 118 coastal GN Divisions within this area and 28 GN Divisions were selected for this study (25% sample). The main method used for primary data collection in the research was a questionnaire, using stratified sampling. In this study 10 percent sample were selected for data collection from each GN Divisions. The questionnaire was administered to 684 head of families. Interviews, focus groups discussions, and observations of this study, are directed to research questions. In addition, secondary

data from relevant institutions have been used such as Population and census Department, Coast Conservation Department.

The results of this study were evaluated to identify the degradation of coastal resources such as fish, sea grass, mangrove, water, coral reefs according to the population increase in the coastal area. This study included 210 fishermen. 65% of them agreed that some fishermen use bad fishing methods (Dynamite and Light traps) and 81% of fishermen use fishing nets for fishing. 52% of fishermen agree that the fish harvest has been reduced from 25%. Knowledge about coastal vegetation is very low. Although, 90% of people knew some coastal vegetation such as Kohomba, Watake and so on, but there is little knowledge about most coastal vegetation about Athnerenchi, Gokatu, Bariya, and the like. Over-exploitation for timber production (72%) and settlement (54%) has degraded mangrove forests. 68.8% of people think flora and fauna species are reduced, such as Mada Kakuluwa, kalapu Kakuluwa (fauna), Kirala, HeenKadol, Ginpol (flora). People engaged in some activity in the mangrove lands, mainly firewood collection (63.4%) has also affected degradation. Coast people have very little knowledge of sea grass (28%). Seagrass can be the cause of several natural and human disturbances, 22.2% of people think human activities are affecting for seagrass destruction and 34.5% of people think natural reasons affect it. 21.3% of people said damage of seagrass is mainly due to over fishing. Pollution methods of the sea and river water, is mainly garbage. Destruction methods of the coral reefs are by boat anchoring (11.5%) and by walking on the coral reefs (66.6%).

This study found that the population growth and its effects help to degrade coastal resources. Humans are a threat to the coastal resources and coastal resources continue to increase with a growing population and expanding economic activity in the coastal systems continue to face increasing pressures, which often lead to the degradation of these systems. Sri Lanka is currently facing more and more problems due to the increase of population and continuous human activities which contribute this degradation.

Key words: Anchoring, Degradation, Mangrove, Seagrass, Statistics.