



CITIES 2015 International Conference, Intelligent Planning Towards Smart Cities, CITIES 2015,
3-4 November 2015, Surabaya, Indonesia

Patterns of landscape change on small islands: A case of Gili Matra Islands, Marine Tourism Park, Indonesia

Fery Kurniawan^{a*}, Luky Adrianto^{b,e}, Dietriech G. Bengen^c, Lilik Budi Prasetyo^d

^aGraduate School, Coastal and Marine Resources Management, Fisheries and Marine Science Faculty, Bogor Agricultural University, Indonesia

^bAquatic Resources Management Department, Fisheries and Marine Science Faculty, Bogor Agricultural University, Indonesia

^cMarine Science and Technology Department, Fisheries and Marine Science Faculty, Bogor Agricultural University, Indonesia

^dDepartment of Forest Resources Conservation and Ecotourism, Forestry Faculty, Bogor Agricultural University, Indonesia

^eCenter for Coastal and Marine Resources Studies, Bogor Agricultural University, Indonesia

Abstract

The aim of this study is to investigate patterns of landscape changes in small islands as exemplified by Gili Matra Islands, Lombok, Indonesia. Satellite imagery, hard infrastructures data and tourism spot were used to observe patterns of land use/land cover (LU/LC) by using overlay method in order to find suitable indicators for assessing landscape changes in the case study. The results showed that the changes tend to grow based on the closeness to the paths, port, coast line, public service, rural center, commercial areas, settlement areas, tourism accommodation, tourism center areas, and tourism spots and keep away landfill area.

© 2016 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of the organizing committee of CITIES 2015

Keywords: Small islands; landscape changes; tourism; Gili Matra Islands; Indonesia.

* Corresponding author. Tel.: +62 85648355553; fax: +0-000-000-0000 .
E-mail address: kurniawan.madura@gmail.com

1. Introduction

Integrated Coastal Management (ICM) has remained a great challenge in Indonesia, especially for small island management. ICM has been activated under the Indonesian Cooperation Law, Act No. 1 in 2014 Jo. Act No. 27 in 2007 about coastal and small islands management. A well-planned management for small islands is undeniable because they have a high vulnerability, from global processes (such as climate change that implicated sea level rise), regional processes (developing cities pollution influence that located near the small islands), and local processes (environmental and resources degradation as impact of population growth) (Adrianto & Matsuda, 2004; Barrientos, 2010; Farhan & Lim, 2011; Farhan & Lim, 2012; Pelling & Uitto, 2001).

Development of small islands provides a promising future in Indonesia. As archipelagic state, Indonesia government leads to small islands development for tourism. Small islands-based tourism is one of the favourite tourist destinations due to its beauty, exotic, aesthetic, diversity of natural habitat (coral reef, sandy beach and sand dune), the warm, clear and attractive water (Daby, 2003). Tourism of small island in Indonesia has grown rapidly and become a world tourist destination, such as Trawangan Island (Lombok), Nusa Lembangan Island (Bali), Seribu

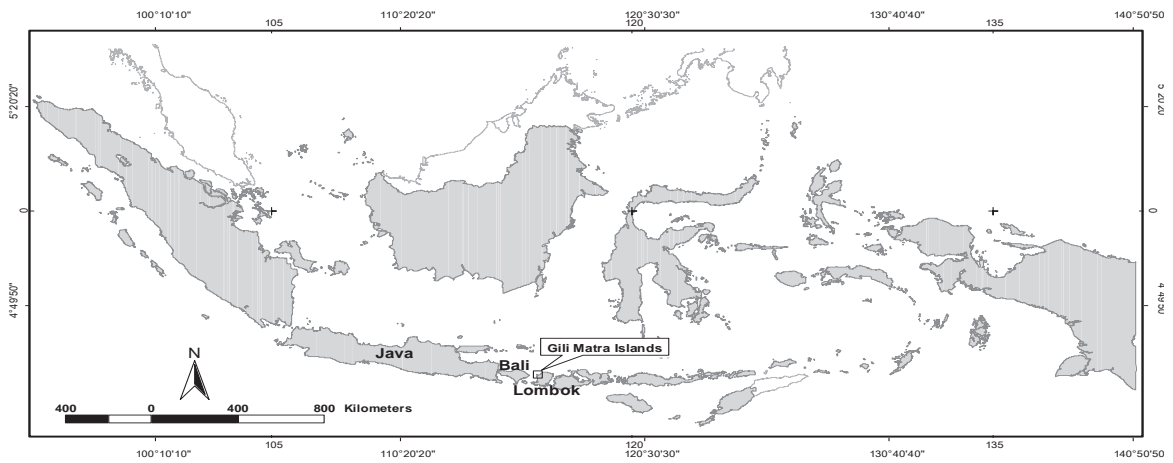


Fig. 1. Gili Matra Islands.

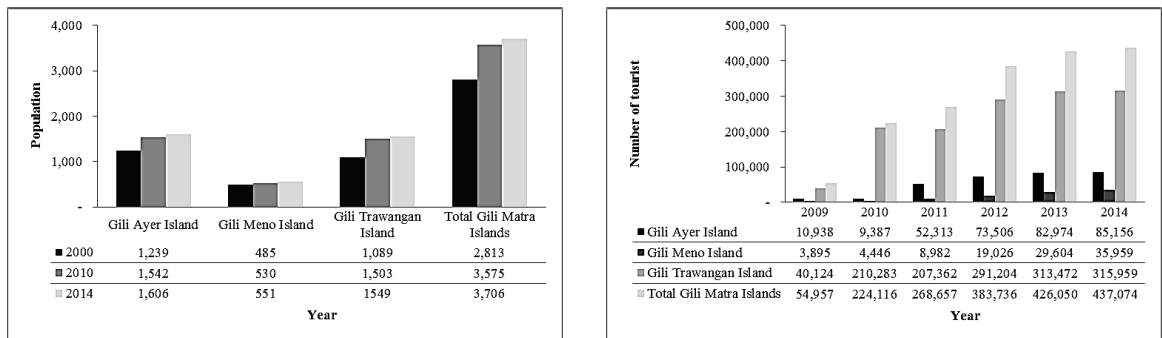


Fig. 2. (a) Population growth in Gili Matra Islands on 2000, 2010 and 2014; (b) Tourist arrival growth in Gili Matra Islands on 2009-2014.

Islands (Jakarta), Karimunjawa (Central Java), Bunaken Island (Manado), Waigeo Island (Raja Ampat), Banda Island (Maluku), etc.. Additionally it provides significant economic benefits as a source of income, employment and livelihood (Bottema & Bush, 2012; Hampton & Jeyacheya, 2014; Long & Wall, 1996; Yulianto, Fahrudin, & Kusmaningsih, 2007). However, tourism is also one of the actors that responsible for environmental degradation, due

Download English Version:

<https://daneshyari.com/en/article/1107351>

Download Persian Version:

<https://daneshyari.com/article/1107351>

[Daneshyari.com](https://daneshyari.com)