CHAPTER I
INTRODUCTION

1.1. Background

Forest is a natural resource that can provide direct and indirect benefits. Directly, forests are a source of various types of goods or industrial raw materials to meet almost all human needs. Indirectly, forests help biodiversity, an invaluable regional and global environmental bank, a hydrological function, a source of medicinal materials, ecotourism, and an almost unlimited genetic bank (Forest Watch Indonesia,2011).

According to Geist and Lambin (2002), forests being harvested for commercial purposes (trade), wood material, and energy wood. As shown by the Bank of Indonesia's 2018 statistics, the growth of Indonesia's economy has been relatively stable in recent years, rising 0.10% from 5.07% in 2017 (Bank of Indonesia 2018). To improve environmental quality, Indonesia spends more money on protecting and restoring the environment. The budget reached about 863 million USD in 2016 and approximately 1,1 billion USD in 2018. (BPS-Statistic Indonesia 2018). Tthe gross domestic product growth of industries that directly utilize natural resources, such as agriculture, fisheries, and forestry, shows fluctuations in trend. While agriculture and fishery industries are experiencing decreasing growth rates, forestry grew with a considerably higher rate of 2.31 % in 2017 than 0.58% in 2014 (BPS-Statistics Indonesia 2018).

Deforestation is the permanent or temporary loss of forest cover (Sunderlin,1997). Forest Watch Indonesia (FWI) reports deforestation figures for several years in its book, Potret Keadaan Hutan Indonesia 2009-2013. In 2000, there were 2 million hectares per year of deforestation; from 2000 to 2009, it was 1.5 million hectares per year, and between 2009 and 2013, it was 1.1 million hectares per year. As in previous reports, Forest Watch Indonesia again reports on Indonesia's deforestation rate for the 2013-2017 period, including the finding that the annual rate was 1.47 million.

Based on table 1.1, forest cover in all regions has a decreasing trend from year to year. In 2000 the natural forest cover was 106.4 million hectares, then the

remaining forest decreased in 2009 with an area of 93 million hectares. As of 2017, the remaining natural forest cover is 82.8 million hectares, or around 43 percent of Indonesia's land area. The ratio of natural forest cover to land area is increasingly sad. In Java, Bali, Nusa, and Sumatra, their natural forest ratio is already below 30%. Kalimantan and Sulawesi regions are below 50%. Only in the Papua and Maluku regions where the percentage of natural forests is still quite large, namely 81% and 57%.

Table 1. 1 Natural Forest Cover For Year 2000-2017

Region	Natural Forest of Year 2000 (Ha)	Natural Forest of Year 2009 (Ha)	Natural Forest of Year 2013 (Ha)	Natural Forest of Year 2017 (Ha)	Land Area	Percentage Natural Forest of Year 2017 with Land Area
Sumatera	16,323,900	12,901,545	11,372,920	10,400,014	47,059,162	22%
Jawa	2,956,530	1,366,715	1,035,925	905,885	16,351,423	6%
Bali, Nusa Tenggara	2,240,910	1,406,543	1,261,504	877,494	7,160,447	12%
Kalimantan	33,234,711	28,358,386	26,886,772	24,834,752	53,067,791	47%
Sulawesi	10,768,513	9,318,071	9,128,560	8,179,422	18,391,419	44%
Maluku	5,880,802	5,256,738	5,058,983	4,515,417	7,948,933	57%
Papua	35,006,055	34,473,389	33,811,621	33,119,514	40,640,520	81%
Indonesia	106,411,422	93,081,388	88,556,285	82,832,498	190,619,696	43%

Source : Forest Watch Indonesia (2019)

According to Contreras and Hermosilia (2000), deforestation is sometimes desirable but often avoided. Deforestation brings positive impacts as well as negative impacts, but deforestation is necessary for development. However, the environmental and social costs of deforestation often outweigh the positive effects.

Deforestation has harmed people's lives, including floods, landslides, erosion and sedimentation, loss of biodiversity, and decreased state revenue from timber products. Activities that cause a reduction in forest area include the conversion of forest areas for development purposes in other sectors, namely for plantations, agriculture, settlements/transmigration, illegal logging, forest utilization activities, changes in the designation of forest areas, encroachment, and

land occupation, forest fires, natural disasters, and others (Kementrian Lingkungan Hidup dan Kehutanan Indonesia, 2019).

1.2. Research Problem

Economic growth can reduce the quality of the environment in the early stages of development. Deforestation is one of the enviromental degradation. Various studies that use data on a country's per capita income and environmental degradation in a cross-country analysis model have produced a hypothesis called the Environmental Kuznets Curve (EKC). Shafik and Bandyopadhyay (1992) were the first to research the EKC of deforestation with panel data from around 149 countries using deforestation data between 1961-1986. From this research, there is no proof for EKC deforestation.

Regarding Indonesia's research on EKC, many researchers are concerned about specific environmental indicators such as carbon dioxide emissions. Sasana and Aminata (2019) researched how economic growth, energy subsidies, total primary energy use, renewable energy, economic globalization, and population affect Indonesia's carbon dioxide emissions. They concluded that in the long run, there is no EKC hypothesis in Indonesia. The result means that Indonesia's economic growth does not seem sustainable, leading to increased carbon dioxide emissions. At the same time, Sugiawan and Managi (2016) found that the EKC relationship between economic growth and carbon dioxide emissions does not apply to Indonesia, with an estimated turning point of US$7,729 per capita. In addition, this study considers the importance of renewable energy in electricity production, which will reduce carbon dioxide emissions.

Research on the EKC hypothesis on deforestation and economic growth in Indonesia appears to be limited. This study uses provincial-level data and examines other factors causing deforestation to expand the research discussion. Based on the background, the research problem in this study is as follow :

1. What are the factors influencing deforestation in Indonesia?
2. How does economic growth impact deforestation in Indonesia?
3. Is there an EKC pattern for deforestation in Indonesia?

1.3. Research Objective

Based on the research problem above, the main objective of the study is as follows:

1. To examine the factor of deforestation in Indonesia.
2. To examine the empirical relatioship between economic growth and deforestation and the existence of the Environmental Kuznets Curve (EKC) for deforestation in Indonesia.

1.4. Research Advantages

1. Enrich research on the relationship between the environment and deforestation. Hopefully it can become an reference for further researcher.
2. Provide information to the Indonesian government on the factors causing Indonesia's deforestation and as a material for consideration in forestry and environmental policy making.

1.5. The Structure of Writings

The systematics writing of this study are :

CHAPTER 1 INTRODUCTION

Chapter 1 contains descriptions and explanations of the background to the problem, problem formulation, research objectives, reserch advantages and writing systematics.

CHAPTER 2 LITERATURE REVIEW AND THEORITICAL FRAMEWORK

This chapter describes the theoretical basis involved. Furthermore, it describes previous research, analytical methods, and hypotheses.

CHAPTER 3 RESEARCH METHODOLOGY

The research method will explain the approach used in conducting research, types and sources of data, variable operational definitions and analysis techniques.

CHAPTER 4 GENERAL OVERVIEW

This section contains an overview and descriptions of research variables.

CHAPTER 5 RESULTS AND DISCUSSION

This section contains an analysis of the model, proving hypotheses, and discussing research results.

CHAPTER 6 CONCLUSIONS AND SUGGESTIONS

This section contains the conclusions of the research results drawn by the author and the suggestions put forward based on the research results obtained.