

**RELOCATION AREA MODELLING FOR MERAPI
ERUPTION'S IMPACTED SETTLEMENT IN BALERANTE
VILLAGE, KEMALANG SUB-DISTRICT, KLATEN**

THESIS

Compiled in Order to Fulfill the Requirements of
Master Program in Regional and Urban Development

By:

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**FACULTY OF ENGINEERING
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**RELOCATION AREA MODELLING FOR SETTLEMENT
IMPACTED BY MERAPI ERUPTION IN BALERANTE
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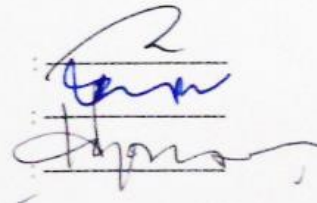
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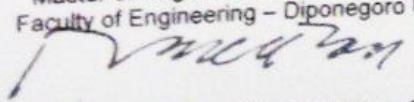
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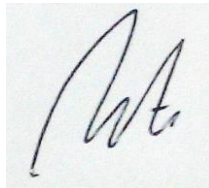
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*You're not rich until you have something money can't buy -
Anonymous*

This thesis dedicated to human kind.

ABSTRAK

Kejadian erupsi Merapi telah menghancurkan 3.705 unit rumah di Provinsi Jawa Tengah dan 3.424 unit rumah di Provinsi D.I. Jogjakarta (BNPB, 2010). Pada kejadian ini, Klaten merupakan salah satu area terdampak di Provinsi Jawa Tengah, tepatnya di Desa Balerante, kurang lebih seluas 501 ha lahan rusak dan tertutup abu vulkanik, sedangkan kurang lebih seluas 496 ha permukiman juga mengalami kerusakan parah karena erupsi. Penelitian ini dibuat untuk mencari alternatif lokasi yang aman bagi perumahan terdampak erupsi yang masih berada di kawasan rawan erupsi dengan memanfaatkan permodelan Sistem Informasi Geografis (SIG). Langkah penting dalam penelitian ini adalah mengidentifikasi dan menganalisis keadaan fisik alam, karakteristik masyarakat, dan mengkaji kebijakan serta peraturan pemerintah yang berkaitan dengan kepentingan relokasi untuk area terdampak erupsi. Dalam proses analisis ditemukan 3 lokasi utama yang sesuai untuk menjadi arahan relokasi. Lokasi ini telah dikaji berdasarkan aspek fisik, masyarakat dan pemerintah. Lokasi yang menjadi prioritas utama berada di Desa Tegalulyo dengan luas area 35.9 ha, kemudian pilihan kedua jatuh pada Desa Kendalsari dengan luas area 20.1 ha, dan sebagai pilihan ketiga adalah Desa Talun dengan luas area 26.8 ha.

Kata Kunci: erupsi merapi, permukiman, relokasi, model SIG

ABSTRACT

According to BNPB (2010), Merapi eruption has destroyed 3.705 units of house in Central Java Province and 3.424 units of house in D.I Jogjakarta Province. Klaten is the most affected area In Central Java, approximately 501 ha of land had degraded and covered by volcanic ash in Balerante Village. While the severely damaged settlements impacted by the eruption reached 496 ha (BNPB, 2010). The research is made to comprehend GIS model on finding alternative locations for impacted settlement in hazardous zones of eruption. The principal objective of the research study is to identify and analyze physical condition, community characteristics, and local government regulation related to settlement relocation plan for impacted area of eruption. From the analyses found that priority relocation areas approved by the natural physical, governmental and community aspects are Tegalmulyo as the first priority with 35.9 ha area, Kendalsari as the second priority with 20.1 ha, and Talun as the third priority with 26.8 ha.

Keywords: erupsi merapi, settlement, relocation, GIS model

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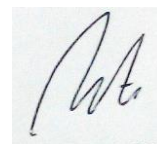
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CHAPTER I

INTRODUCTION

1.1 Background

Disaster is a part of human life. It often happens as an unpredictable phenomenon againsts our will. It can occur suddenly or through a slow process in various ways such as flood, landslide, drought, tsunami and eruption. A particular tool can predict some disasters, but others cannot accurately predict when and where it will happen. However, disaster will always affect human activities in the form of physical damages, financial losses and psychological traumas.

Indonesian archipelago is one of the regions having the most active volcanoes in the world, commonly called as *The Ring of Fire*. That is why Indonesia has a high vulnerability in geological hazards. Located between oceans and plains which are characterized by plenty of hills and mountains, Central Java becomes prone to the volcanic eruption. Some of volcanic mountains located in Central Java are Merapi, Slamet, Sindoro, and Sumbing. Merapi has the highest number of eruptions in the previous years and have caused a great deal of damages and losses in majority areas of Central Java. Merapi is surrounded by four districts, *i.e.* Magelang, Boyolali, Klaten in Central Java Province and Sleman in D.I Yogyakarta. Merapi eruption has caused 389 casualties in D.I. Yogyakarta and Central Java (BNPB, 27 November 2010).

On October 2010, Merapi erupted and subsequently lasted until early November of 2010. It was marked as the 100-year eruption cycle and the largest volcanic eruption since 1994 (compared to similar disasters in the period of 1994, 1997, 1998, 2001 and 2006). This cycle has a significant eruption impact by the glide of hot cloud along 18 km which flows through Gendol (BPPTK5, 2011). Hot cloud is equivalent to *awan panas* in Indonesian language or in Javanese term is known as *wedhus gembel*. Merapi eruption in 2010 cost immense losses of assets and lives. It has destroyed Balerante Village in Klaten, also Kepuharjo Village, Wukirsari Village and Argomulyo Village in Sleman. More than 300 families were left homeless, 386 people died while more than 70,000 people were