

**INVESTIGATION OF THE POTENTIAL SUITABLE AREAS
FOR PINEAPPLE PLANTATION USING GIS**

HAFIZA BINTI YAHAYA

2006142497



**Thesis submitted to the Universiti Teknologi MARA Malaysia
in partial fulfillment for the award of the degree of the
Bachelor of Surveying Science and Geomatics (Honours)**


OCTOBER 2010



DECLARATION

I declare that the work on this project/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. The project/dissertation is original and it is the result of my own work, unless otherwise indicated or acknowledged as referenced work.

In the event that my project/dissertation be found to violate the conditions mentioned above, I voluntarily waive the right of conferment of my degree of the Bachelor of Surveying Science and Geomatics (Honours) and agree be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

Name of Student : Hafiza Binti Yahaya
Student's ID No : 2006142497
Signature and Date :  15/11/2010
Project/Dissertation
Title : Investigation of the potential suitable areas for pineapple plantation using GIS (case study: pontian Johor)

Approved by:

I certify that I have examined the student's work and found that they are in accordance with the rules and regulations of the Department and University and fulfills the requirements for the award of the degree of Bachelor of Surveying Science and Geomatics (Honours).

Name of Supervisor : Assoc.Prof.Sr.Abdul Malek Bin Mohd Noor

Signature and Date :

 15/11/2010

ABSTRACT

Geographic information System(GIS) becomes more popular and important in many application such as plantation, development and etc. This GIS is used to produce updated information, faster and help in decision making. GIS application in analyze the suitable to crop the fruit, that is constitute a research model to evaluate system in future. In our final project, GIS is a tool that help in make our analysis and also help in make a decision making to produce a map that is most suitable to plant Pineapple (Comulus Ananas) at Pontian Johor. The criteria to plant the Pineapple (Comulus Ananas) is depend on their land category and also terrain (contour) of the location that is refer to Soil-Crop Suitability classification for Peninsular Malaysia system. The suitable plantation analysis involves collection of spatial data, attribute data and manipulation process of both data. Data that are completed with manipulation process will be use in analysis process that use the GIS software. This project is focus on producing a map for the most suitable plantation of Pineapple (Comulus Ananas) where it depends on some criteria. The criteria are Slope of the location, Soil Type, Temperature, Rainfall and also Land use of site area. From this research product can help the decision maker to make their solution in planning to plant Pineapple(Comulus Ananas) and also can manage their planning with more effectie and succesfull.

TABLE OF CONTENTS

ABSTRACT	i
ACKNOWLEDGEMENT	ii
TABLE OF CONTENTS	iii
LIST OF FIGURES	vi

CHAPTER 1: INTRODUCTION

1.0	Introduction	1
1.1	Problem Statement	3
1.2	Aim	3
1.3	Objective	3
1.4	Scope and Limitation	4
1.5	Assumption	4
1.6	Planning of chapter	5

CHAPTER 2: LITERATURE REVIEW

2.0	Introduction	6
2.1	Geographic Information System	7
2.2.1	GIS's Definition	8
2.2	GIS and Pineapple Plantation	9
2.2.1	Introduction	10
2.2.2	GIS Components.	11
2.2.3	How Do GIS Works?	13
2.2.4	GIS's Tasks	13

2.2.5	Technologies Which Are Related To GIS	16
2.3	Pineapple	17
2.3.1	Introduction to Pineapple	17
2.3.2	The History of Cultivating Pineapple in Malaysia	19
2.3.3	Climate	20
2.3.4	Soil	20
2.3.5	Cultivation	20
2.3.6	Planting	21
2.3.7	Fertilization	21
2.3.8	Irrigation	22
2.3.10	Flower Induction	22
2.3.11	Harvesting	23
2.3.12	Food Uses	24
2.3.13	Other Uses	26
2.4	Classification of soil and plant capability	29

CHAPTER 3: METHODOLOGY

3.0	Introduction	35
3.1	Software and hardware	35
3.1.1	ArcGIS Version 9.3	36
3.2	Methodology	37
3.3	Methodology work process	38
3.4	Data collection	39
3.4.1	Criteria for selecting area for pineapple plantation	39
3.5	Data preparation	41
3.6	Software and Hardware	44
3.6.1	Software	44
3.6.2	Hardware	44