

**UNIVERSITI TEKNOLOGI MARA**

**DIGITAL MAPPING OF  
RELEVANT FOOD INSECURITY  
INFORMATION AMONG POST  
FLOOD VICTIM AT BERA  
DISTRICT, PAHANG, MALAYSIA**

**SITI SALWANI BINTI MUSA**

**Thesis submitted in fulfillment  
of the requirements for the degree of  
Bachelor (Hons.) of Nutrition and Dietetics**

**Faculty of Health Science**

January 2016

## **AUTHOR'S DECLARATION**

We hereby declare the work in this thesis is our own except for quotations and summaries which have been duly acknowledged.

7 December 2015

SITI SALWANI BINTI MUSA  
2012691436

## ABSTRACT

Flood is one of the natural phenomenon that have high potential to cause damage in terms of loss of lives, destruction to property and economic loss. This cross sectional study conducted by using convenience sampling method. The objective of this study is to demonstrate and illustrate the factors affecting food insecurity among the flood victims at Bera, Malaysia on the digital mapping by using the Geographic Information System (GIS) as the study on the factors of food insecurity and the illustration of the factors through the digital mapping is limited. The combination of questionnaire from the Household Food Security Survey Model (HFSSM), Household Food Insecurity Access Field (HFIAS), and anthropometric assessment with some modification were used in this study. There were 210 of respondents out of 247 respondents were agree .to be interviewed. Chi square and logistic regression were utilized to know the factors that associated with household food insecurity. The results show that the percentage of the household with food insecure was 29.6% (n=73) according to HFSSM. Thirteen out of seventeen villages have been identified as food insecure in which the three highest food insecure were Kampung Padang Luas (50%), Kampung Kuala Triang (53.8%), and Kampung Bohor Bharu (53.3%). This paper highlight on the factors of food insecurity and on how the GIS application help to demonstrate and visualize the area of food insecurity at Bera, Malaysia.

## TABLE OF CONTENTS

AUTHOR'S DECLARATION.....	ii
ABSTRACT.....	iii
Acknowledgement .....	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES.....	vii
LIST OF FIGURES .....	viii
LIST OF ABBREVIATIONS.....	ix
Chapter 1.....	1
Introduction.....	1
1.1 AIM.....	3
1.2 RESEARCH QUESTIONS.....	3
1.3 OBJECTIVE.....	3
1.3 STUDY SITE.....	3
1.4 PROBLEM STATEMENT .....	3
1.6 HYPOTHESIS .....	4
1.7 CONCEPTUAL FRAMEWORK OF FOOD INSECURITY.....	4
CHAPTER 2 .....	6
Literature Review.....	6
2.1 DIMENSION OF FOOD SECURE .....	6
2.2 CLIMATE CHANGE .....	7
2.3 FACTORS OF FOOD INSECURE .....	9
2.3.1 Financial Income.....	9
2.3.2 Other factors.....	9
2.4 GLOBAL POSITIONING SYSTEM (GPS) .....	10
2.5 GEOGRAPHIC INFORMATION SYSTEM .....	10
2.6 DIGITAL MAPPING OF FOOD INSECURITY .....	11
2.7 GLOBAL SITUATION OF FOOD INSECURITY.....	12
Chapter 3.....	13

## CHAPTER 1 INTRODUCTION

The natural phenomenon of flood can happen in a form of cycle through the year in a certain country. The tropical country included Malaysia, were suffered a lot with flooding as it occurs annually. This catastrophe can happen anytime and anywhere without warning. But, nowadays with the increasing in technology development, people can get the information. In Malaysia, the Department of Irrigation and Drainage Malaysia (DID) is responsible for providing flood forecasting and warning services to the public (Chan, 2012) in order to increase the awareness and preparation. About 2,500 mm of the average of rainfall at all the states in Malaysia within a year, and it is become the heaviest rainfall compared to other country (Khalid & Shafiai, 2015). On December 2014 until January 2015, some states in Malaysia mostly on the east coast and northern region were hit by flood. Consequence from this phenomenon, a lot of infrastructure, economic and property were destructed. This problem can lead to food insecurity among the post flood victims as this unfavorable condition was one of the factor that could cause malnutrition.

Food security can be defined as the condition where people have sufficient access of the safe and nutritious food in which the intake of the foods are met the recommended need in order to live in a healthy life (Pérez-Escamilla, 2008). While the food insecurity can be defined as the existing of the inadequate and limited availability and accessibility of nutritious foods (Rosier, 2011). There are four main marker of the food security, which are; availability, accessibility, stability and utilization (Wong, 2008). The scanting of these four marker will lead to food insecure. According to these four markers, the factors that contribute to the food insecurity can be identified. Need to remember that the term of food security was not only focused on nutrition status but it also included socio-demographic such as income and household members (WHO, 2015). Therefore, the factors that could contribute to the food insecurity must be identified in order to overcome the problems.

According to the research review on the food security status, the households with low income and increase in household members were tend to have food insecure in life